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Eric Mutisya Kioko

Poverty and Livelihood Strategies at Lake Naivasha, Kenya

A Case Study of Kasarani Village

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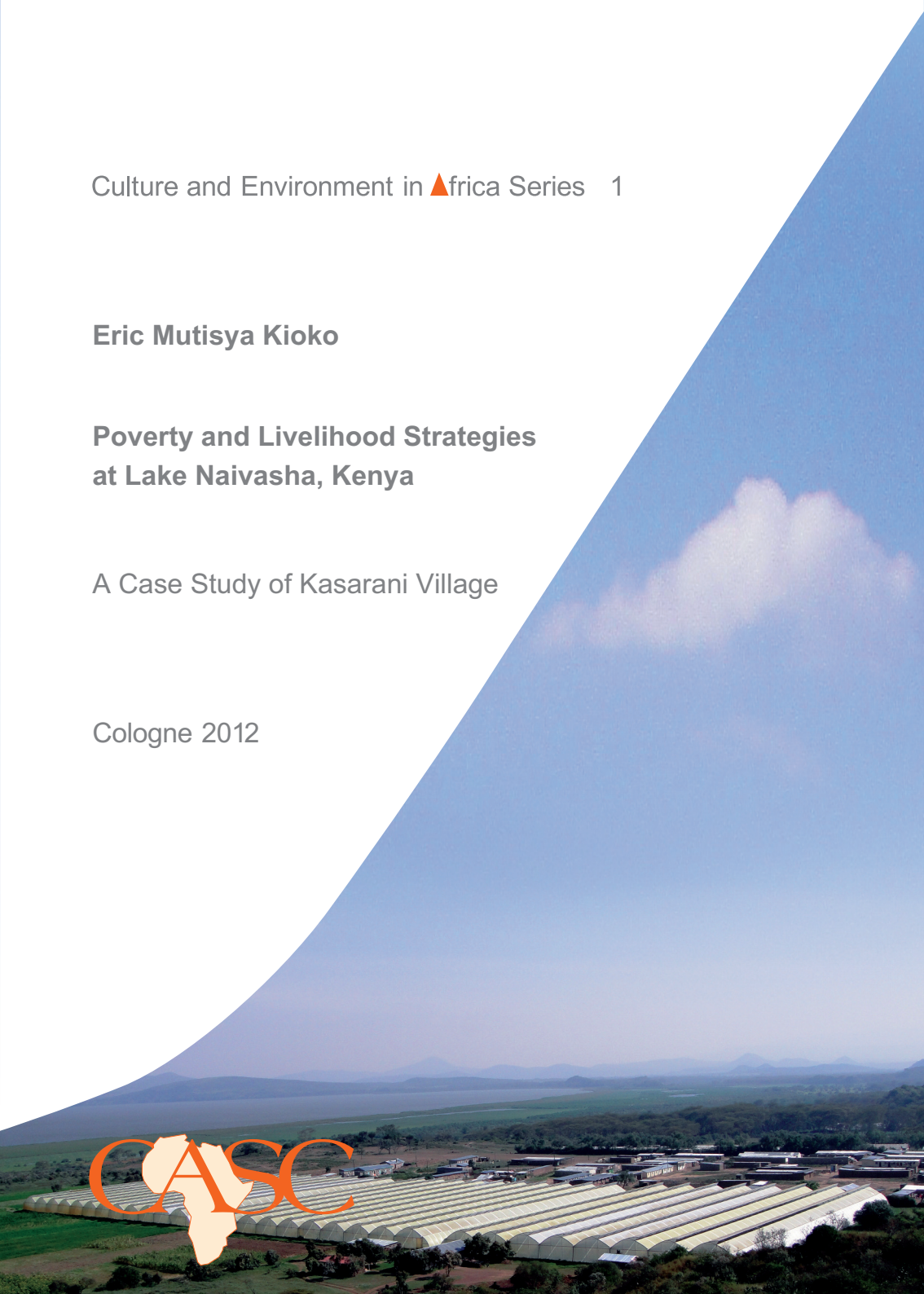

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Preface

Kenya's Lake Naivasha has come into the focus of international reports: the lake environment is at once the hub of agro-industrial flower production in Kenya and supplies about a large percentage of cut flowers sold in north-western Europe. The region also hosts ten thousands of tourists yearly who are anxious to experience at the natural beauties of this Rift Valley Lake. Lake Naivasha is protected via the internationally recognized RAMSAR status but it is also home of about 60 giant greenhouse complexes. The rapidly growing flower industries are nowadays the major driving factor within this social-ecological system: ten thousands of job-seeking Kenyans turned to Naivasha during the past two decades to seek employment. Hemmed in between large farms many immigrants look for additional incomes and invest time and capital into small-scale farming at the lake shore, into fishing or small-scale businesses.

Within the context of a larger interdisciplinary project of the University of Cologne Eric Kioko has studied one such village, Kasarani, which came into existence in the 1950s but only grew significantly after the 1980s. Nowadays Kasarani has about 13.000 inhabitants (estimated) and in some aspects it is rather a small town than a village. Kioko spent two months in Kasarani doing anthropological research in the place. Kioko applied standard anthropological methodology. He interviewed heads of households, did further interviews with small-scale entrepreneurs, captured case studies of emerging social institutions and organizations. In a very convincing manner Kioko combines qualitative accounts with quantitative data to argue his case. It is – to my knowledge – the first anthropological study in this context, in which contestations over resources, interethnic tension and global as well as national influence is always perceivable.

To my grandmother

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List of Acronyms

BMU	Beach Management Unit
CIPEV	Commission of Inquiry into Post-Election Violence (Waki Report)
COTU	Central Organization of Trade Unions
DFID	Department for International Development
IDS	Institute of Development Studies
JB	Joint Body
KEMFRI	Kenya Marine and Fisheries Research Institute
KLA	Kenya Land Alliance
KKV /KYEP	Kazi Kwa Vijana (Jobs for the youth)/ Kenya Youth Empowerment Project
KPAWU	Kenya Plantation and Agricultural Workers´ Union
NGO's	Non-Governmental Organizations
NEMA	National Environment Management Authority
NCP	Naivasha Community Project
RA	Resilience Alliance
SLA	Sustainable Livelihood Approach
SL	Sustainable Livelihoods
SES	Social Ecological System
UNDP	United Nations Development Program
WWF	World Wildlife Fund

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This thesis is part of an ongoing interdisciplinary project 'Resilience, Collapse and Reorganisation in Social-Ecological systems of African Savannas' under the universities of Cologne and Bonn collaborating with African partners, which started in 2010. Most importantly, much gratitude goes to my supervisor, Prof. Dr. Michael Bollig; his patience, the will to assist and guide and creating opportunities for his students has my greatest admiration of all times.

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Last, but not least, I am grateful to the Kasarani community for cooperation in the study and our friendly co-existence during my two-month stay in the village. I am indebted to Mama Beth and all informants who gave us the time and patience to talk to them. I thank my grandmother, uncle, brothers and sisters for their unrelenting love and support.

The list of important people in my academic journey is long. Whereas I may not mention all, my constant reflection of where I have come from vividly reveals the support accorded to me by each person.

1. Introduction

Development in Africa has focused on reducing poverty and eradicating related extreme cases for the past decades. The topic remains dominant nationally and internationally in policy research and implementation of key strategies as well as attracts high interest within international development practitioners in most developing countries; making it a principal focus for international cooperation. The Millennium Development Goals (MDGs) stem from this concern; the top of which is eradicating extreme poverty. Poverty, as used here, follows the World Bank´s definition:

'Poverty is pronounced deprivation in well-being, and comprises many dimensions. It includes low incomes and the inability to acquire the basic goods and services necessary for survival with dignity. Poverty also encompasses low levels of health and education, poor access to clean water and sanitation, inadequate physical security, lack of voice, and insufficient capacity and opportunity to better one's life'1

The breadth of knowledge and practices depicting lessons and findings on poverty reduction strategies so far (*see* for example Wohlmuth et al. 2009) seem to ignite a profound hunger for more solutions as poverty continues to pose as one of the world´s greatest enemies. Among the ways of fostering development by improving the well-being of poor people that I discuss is sustainable livelihoods (SL), an approach developed in the early 1990s with a more actor-oriented perspective for reducing world poverty, especially among the rural poor (de Haan & Zoomers 2005:38; Ashley & Carney 1999:7).

The study also discusses rural livelihoods from a social resilience perspective in the context of Kasarani, a recently developed village at the north of Lake Naivasha in Kenya. Social resilience receives much attention, especially within social sciences, as a renewed thinking towards research into human social systems (social change) and sustainable development; this breaks from 'resilience' as understood in ecology (ecosystem resilience). However, consensus on meaning, measurement and application of social resilience remains a challenge for scientists; to some, the concept is elusive and vague (*see* Friedland et al. 2005; and Kuhlicke & Steinführer 2010:38-39).

Lake Naivasha is renowned for extensive cut flower investment among other developments, drawing labour migrants from across Kenya. Paradoxically, while immigrants expect better livelihoods by working in the cut flower industry, which exports roses and other horticulture internationally, most of them are confronted with poor pay, job insecurity and seasonality as well as working in unhealthy and sometimes inhumane conditions, thereby placing their lives and livelihoods at risk. These challenges are heightened by differential resource access and use; powerful resource users (flower farms, tourism etc.) have the upper hand while the majority local population is

[1] 'Poverty and Inequality Analysis', worldbank.org

marginalized, making livelihood diversification ever challenging. This is exemplified in the situation of Kasarani village.

The Naivasha region has registered rapid multi-ethnic population growth against insufficient infrastructure, corresponding problems of health and sanitation, conflicts, violence, poverty and environmental degradation (*see* for example Mireri 2005:92; and Betch et al. 2006:278). The recent 2009 census estimates the total population of Lake Naivasha basin at 650,000, of which approximately 160,000 people live around the lake itself (WWF 2011:7). The population has grown steadily in the last 30 years with the decade between 1989 and 1999 (boom years of the horticulture industry) experiencing 64% growth (ibid.: 7).

With this rapid population growth, big farms and other employers do not match the job demands of all people. However, unemployment (especially of labour migrants) does not necessarily translate into return or out-migration. Most unemployed people continue to stay in the settlements anticipating for jobs; forming the main group involved in competing for resources with powerful actors and the most vulnerable. Insecurity occasioned by casual employment for most employees mostly translates to rampant dismissal from work as employers argue of high operation costs while some simply want to maximize profits at the expense of poor job seekers. Under such hardships of everyday life, building social resilience becomes the prominent dialogue in much of Kasarani and Lake Naivasha region.

This study's focus is on how different marginalized groups in Naivasha cope and respond to livelihoods shocks and stresses and what strategies they pursue to move out of poverty and enhance their well-being. Taking the Kasarani case, two broad objectives are addressed: first, the dynamics of wetland resource access and user rights between different actors and the factors negotiating asymmetries of these rights are discussed with a focus on how global markets for Naivasha's horticulture and the 'big man-big land' syndrome breeds a low-level marginalized group; secondly, the concrete livelihood strategies related to coping and response mechanisms are analysed from an actor-oriented perspective, and new challenges of adaptation are revealed.

I relate coping strategies, such as diversification, cash and commodity flows etc. and response mechanisms, such as informal networks, alliance creation and informal credits to social resilience or mechanisms of building capacity to adapt to livelihood challenges. Response strategies/mechanisms refer to strategies that address livelihood shocks[2], such as sudden loss of employment from flower farms (layoff of horticulture workers). Coping strategies/mechanisms refer to strategies that address livelihood stress. However, classifying livelihood stress and shocks based only on time span of occurrence is

[2] Shocks are violent and come unexpectedly ; stress is less abrupt, but may last longer in most cases (de Haan, 2006: 3)

insufficient. It is imperative to consider variations in shocks and stress especially in the way they affect different people at different environments or in different economic situations. The use of 'livelihood challenges' covers both livelihood shocks and stress.

Studies conducted in Naivasha have a general acceptance of the importance of the large-scale farms in terms of employment to the local population, but most of them do not detail the conditions these workers have to encounter each working day. Additionally, there is a tendency to assume 100% employment of anyone seen living in the informal settlements surrounding the lake and farms (especially women), an assumption lacking support from interviews and observations in the area. However, women still form the largest percentage of flower farm employees[3].

Whereas scores of outsiders continue to encourage the proliferating cut flower industry, which began in the 1980s[4] by looking at employment of the local population and a growing national economy, I present a different picture in this paper. This is a situation where a high valued industry, both in Kenya and around the world, has not sufficiently addressed the needs of most 'local' workers; thereby prompting the desire for alternative survival strategies albeit with inherent problems[5]. In so doing, the wish is not to propagate a 'good-for-nothing' picture of flower farms and other investments in the area or to emphasize the destitution of cut flower workers. The role of these investments, especially in employment cannot be underestimated; however, negotiation loopholes between employers, workers and workers' unions need to be refined for sustainability and for the insurance of beneficial livelihoods.

Previous research in the Naivasha area, mostly in the area of natural sciences, has largely focused on the lake and flower farms (*see* Becht & Harper 2002; Becht & Nyaoro 2006; Harper et al. 2002; and Hughes 2000; 2001). Data for specific settlements around Lake Naivasha and residents' conditions of life is either scanty or nonexistent, especially for Kasarani and the north lake while much of earlier studies tend to generalize cut flower workers, settlements and flower farms; ignoring underlying differences in each case. Importance is attached to these variations in this study.

Social science research is rare; especially studies that detail conditions of poverty and the causal factors. Studies on resource-related violence and conflicts are also missing. The work by Opondo (et al. 2002), which highlights major problems experienced by flower workers in some horticulture farms in Kenya, is a major step towards understanding

[3] Women constitute 65%-75% of flower industry workers in Kenya (Opondo et al. 2002:12), while approximately 65% of women work in flower farms at Lake Naivasha (NEMA 2011).

[4] Floriculture at Lake Naivasha began in the 1980s and expanded in the 1990s (Becht et al. 2006:278), similar dates were given during research in Kasarani.

[5] The term 'local workers' is used to refer to labour migrants from different parts of Kenya seeking employment at the expansive investments at Lake Naivasha. The population of the area is also included. 'Outsiders' refer to Kenyans and international scientists, institutions and organizations or ordinary people.

poverty within local populations working on valuable commodities. Current studies at Lake Naivasha covering wetland use and resource-related conflicts among others are underway within an interdisciplinary project of the universities of Cologne and Bonn in collaboration with African counterparts[6]. This study is part of the project.

This thesis is meant to add knowledge on challenges faced by flower workers and other employed and unemployed labour migrants in Naivasha and show causal factors of poverty as well as strategies used to build social resilience (using Kasarani as a specific case). Since fieldwork concentrated on Kasarani settlement, a fact-based generalization of these findings on conditions of all settlements at Lake Naivasha is only possible with extensive research in the entire lake basin. Accessibility to services, amenities and facilities as well as operations of large-scale farms affect different settlements in dissimilar ways. However, personal observation (not backed by in-depth study) on other settlements such as Kihoto (largest settlement next to Naivasha town), Kamere (south lake) and Kongoni (west lake) suggest some shared conditions. This study also suggests some recommendations for the pursuit of sustainable livelihoods and poverty reduction. Fairtrade[7], which comes under criticism, is discussed due to its importance especially in relation to livelihoods of horticulture workers.

Three main causal factors of poverty are emphasized. First, is wetland conversion, which has eroded former property rights (commons) and continues to favour the powerful against vulnerable minority groups. This also relates to the role of investments in the Lake Naivasha region. Horticulture and other investments are important; big farms breathe life into the employment-deserving settlements around the lake. However, the value of these investments should be streamlined to affect the local population in a positive way as they do to the national economy and horticulture markets.

Second, is the sensitive topic of land in Kenya and in the Naivasha region, which is frequently discussed, but rarely receives action. The deep-seated inequalities in land ownership between rich and poor, unresolved colonial land legacies of ethnic disintegration and post-colonial 'big man-big land'[8] games have continually marginalized the poor. In the case of Naivasha and Kasarani, descendants of colonial settlers and some political elites own big chunks of land while ordinary citizens are squeezed within small parcels and many do not own any land[9]. Rural livelihood strategies are heavily reliant on the natural resource base (de Haan 2006:1; and Scoones 1998:11). Therefore,

[6] http://www.fg1501.uni-koeln.de/
[7] The concept of Fairtrade is discussed in chapter six.
[8] *See* The Ndung'u Report (Southall 2005: 142), Waki Report (CIPEV), 2008: 32).
[9] Ownership of land is based on own observation and interviews in Kasarani and Naivasha.

lack of land and rights of access or use of related resources renders most natural resource-based livelihoods untenable.

Third, livelihood assets crucial for diversification are limited, such as inadequate physical capital and inaccessible formal credit from financial institutions. Facilitation of avenues that aid access to micro-credits and infrastructure development will greatly encourage better livelihoods in the larger Kasarani, especially through the broadening of economic options.

Cooperation of formal and informal institutions, organizations and all actors within Lake Naivasha basin is important in seeking sustainable management and conservation solutions for the ecosystem. The role played by informal institutions and social organizations in promoting pursuits of better livelihoods in Kasarani (discussed in detail in chapter six) is not to be underestimated or neglected in favour of formal institutions of resource management.

1.1 Research Questions

This study sought to answer one main question:

How are different marginalized groups in Naivasha able to cope and respond to livelihood shocks and stresses and what strategies do they pursue to move out of poverty and enhance their well-being?

Out of the main question, specific questions were used to address the problem. These include:

- What are livelihood shocks and stressors in Kasarani?
- How do people in different work environments prepare for livelihood shocks?
- What coping and response mechanisms are employed by people with differential income to avert poverty and related vulnerabilities?
- Which livelihood assets are available and how important are they in the livelihoods of individuals and groups constituting the multi-ethnic Kasarani community?
- Which institutions and organizations are important in supporting and/or regulating pursuits of better livelihoods?

1.2 Composition of the Thesis

Chapter two discusses the resilience theory and specifically tries to link social resilience to livelihoods and poverty alleviation discourses, thus bridging it to Sustainable Livelihood Approach (SLA). Related concepts of vulnerability, households, institutions and organizations are also discussed as they apply to livelihoods in Kasarani. Methods used in data collection and analysis form the third chapter. Chapter four gives a description of the

context of African wetlands in general, then focuses on Kenya and Lake Naivasha. Focus is on wetland conversion driven by the global economy, resulting resource access and use asymmetries between powerful and powerless actors. Related implications, such as resource contestation and challenges of wetland conservation are discussed. Chapter five documents a previously undocumented history and development of Kasarani. Chapter six is the most extensive of the thesis and describes in an analytical way the primary livelihood strategies in Kasarani. Much interest is drawn to livelihood diversification, which represent detachment from over-reliance on single livelihood options, the unequally accessed wetland resources and seasonal employment. In so doing, some residents are seen to forge alternative activities that build social resilience. The importance of informal institutions, social organizations and livelihood assets, together with responses and coping mechanisms for livelihood challenges are discussed. In the conclusion, I raise thematic issues discussed in this paper such as the feasibility of a better future in Kasarani and reflect on application of social resilience to sustainable development.

2. Theory and Concepts

This chapter discusses the two main theoretical approaches used to study and analyse livelihoods in Kasarani. These are social resilience and sustainable livelihoods. However, it is imperative to start the discussion with a short overview of resilience as applied to ecosystems and later show how social resilience applies in studying social change in human groups/communities. The study follows the idea that social resilience (understood as the ability of human groups or societies to cope with uncertainty and changes in their environment, sociopolitical and economic spheres by seeking mechanisms to reduce vulnerability from challenges brought by these changes) is important in pursuit of sustainable livelihoods. I agree with scholars who find ecological resilience limited in addressing social change, adaptive capacity and individual, group or community risk minimising strategies[10]. Concepts of vulnerability, institutions, organizations and household, as relates to Kasarani, form the last part of this chapter.

2.1 Resilience

Holling, a Canadian ecologist, introduced resilience to ecological systems in 1973; four decades later, the theory is receiving much attention through discussions in conferences and debates as usage and application goes multidisciplinary. According to Holling, ‘resilience determines the persistence of relationships within a system and is a measure of the ability of these systems to absorb changes of state variables, driving variables and

[10] *See* for instance www.fg1501.uni-koeln.de

parameters, and still persist. In this definition, resilience is the property of the system and persistence or probability of extinction are both possible' (Holling 1973:17). 'Stability, on the other hand, is the ability of a system to return to an equilibrium state after a temporary disturbance. The more rapidly it returns, and with the least fluctuation, the more stable it is. Therefore, stability is the property of the system and the degree of fluctuation around specific states the result' (ibid: 17).

Following Holling's definition, authors interpret this concept differently and as Gallopin argues, its interdisciplinary application and plurality of definitions could be a hindrance to understanding and communicating across disciplines (Gallopin 2006:293). In most resilience literature (*see* Folke 2006:259), scholars have tended to understand ecosystem/ecological resilience as the capacity of a system to absorb disturbance and re-organise while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks (defined by Walker et al. 2004:2).

The concepts of resilience, vulnerability and adaptive capacity are related in their biophysical and social realms and in their application to social-ecological systems (SES) (Gallopin 2006:293). A SES is defined as a system that includes societal (human) and ecological (biophysical) subsystems in mutual interaction (ibid.:294). Looking at the definitions of Holling (1973:17) and Walker et al. (2004:2) and related literature in ecology, the application of the resilience concept to SES (as defined by Gallopin) has been more skewed towards the ecological subsystem as compared to the societal or human subsystem. However, these concepts are interpreted differently across disciplines. Adger emphasises the link between social and ecological resilience through the dependence of communities' and social groups' livelihoods and economies on ecosystems (Adger 2000:346-47).

Formation of the Resilience Alliance (RA)[11] interdisciplinary group of scholars brought a more unified understanding of the resilience concept and as a result most scholars understand the concept as summarised by RA. According to RA, resilience as applied to ecosystems or to integrated systems of people and the natural environment has three defining characteristics, which include:

- The amount of change the system can undergo and still retain the same controls on function and structure;
- The degree to which the system is capable of self-organization;

[11] Resilience Alliance is an interdisciplinary research organization interested in the concepts of resilience, adaptability, and transformability and provides a foundation for sustainable development policy and practice in social-ecological systems dynamics (www.resalliance.org). *See* also Folke 2006:260.

- and, the ability to build and increase the capacity for learning and adaptation (*see* Folke 2006:259-60)[12].

Resilience has been, in some cases, used to mean stability, and in other cases, related to sustainability or sustainable development. Ludwig uses conceptual models, mathematical models, ecosystem analogues, and model of a savanna system, to discuss the link between the complex concepts of sustainability, stability and resilience (Ludwig et al., 1997). A problem brought by applying the imprecise resilience concept to contribute to the goals of sustainable development emanates from its different interpretation, understanding and use across disciplines to serve different purposes. This generates confusion in usage (Walker et al. 2004:1).

There is increasing use and application of `resilience/social resilience´ in livelihood and development studies; especially within poor rural communities, populations living in marine and coastal environments and other groups vulnerable to natural or man-made disasters. In most cases, studies within these subjects often use 'sustainable development' or 'sustainable livelihoods' interchangeably with 'resilient livelihoods' and in most cases talk of resilient communities, building resilient communities or livelihoods (*see* Adger et al. 2002; Marschke & Berkes 2006; Elasha et al. 2005; Derissen et al. 2009; and Hegney et al. 2008). The importance of resilient livelihoods in sustainable development has also gained much attention in both environmental and social sciences (International Council for Science 2002; Brand 2009; and Derissen et al. 2009).

Although separate debates on resilience and on sustainable development concepts continue, a misunderstanding is possible when the two abstract concepts are used together without clear links. Scholars like Derissen have increasingly sought connection between the two concepts (Derissen et al. 2009:3).

Therefore, the questions of definition, measurement and availability of supportive or non-supportive theories and models in resilience, social resilience, vulnerability, stability, sustainability, sustainable development and related concepts will no doubt linger in the science community in the future. In short, I see a situation where most scientists agree that resilience and social resilience are bedrocks for sustainable development, yet they do not agree what the three concepts entail or how they could be applied and measured.

Whereas debates and criticisms over appropriate usage and measurement of resilience exist, other scholars have reviewed the concept (for example Abesamis et al. 2006; and Folke 2006). There is also the problem of discussing resilience of natural systems in isolation, because humans are dependent upon natural systems; the two interact and in most cases shape each other. This co-existence raises question of whether resilient ecosystems enable resilient communities in such situations (observed by Adger

[12] Definition of resilience is also found under RA website - www.resalliance.org.

2000:347). It is imperative to discuss these salient concepts within a platform of holism. Anthropologists and other social scientists will benefit from applying these concepts to understand humans (life ways and perceptions) within contexts of changing cultures, growing populations and changing environments.

2.1.1 Social Resilience

Social resilience has been defined as the capacity of a social system, involving multiple levels of government, communities and users, to embrace uncertainty and change in the advent of political, social, or economic disturbances by building knowledge and understanding of resource and ecosystem dynamics (Abesamis et al. 2006:2). Friedland defines social resilience[13] as a societal attribute, relating to a society´s ability to withstand adversity and cope effectively with change. The authors argue that social resilience should express, on the one hand, society's ability to withstand adversity with its values and institutions remaining intact. On the other hand, social resilience is also manifest in society's ability to cope with changing, sometimes hostile environments by changing and adjusting in new and innovative ways (ibid.:8). In this definition, it may be impossible to expect societal values and institutions to remain intact. Just like any other societal aspect of life, values and institutions undergo transformation within (or even outside) resilience systems. We could however take the evolution of institutions as part of their resilience (see for example Adger 2000:351).

Adger defines social resilience as the ability of groups or communities to cope with external stresses and disturbances resulting from social, political and environmental change. The external shocks and stresses (when talking about communities dependent on natural resources) include changes in government policy, civil strife, or environmental hazards, to name a few, which exert pressures on social structures, livelihoods and resources (Adger 2000:347). I follow Adger's emphasis that taking resilience from ecological sciences and applying it to social systems assumes that there are no essential differences in behaviour and structure between the two, even though they are related (Adger 2000:350).

The general thinking of the ability of human societies to self-organize as well as retain the same function and structure when faced with disturbance or stress is therefore problematic; especially within dynamic cultures and changing environments. However, scholars define this concept to suit their work and thus, lack of consensus is inevitable. I

[13] Friedland argues that there exists a divide between social resilience and individual resilience although the two are related. Social resilience is not just, or not simply, the sum total of its individual members´ resilience (Friedland et al. 2005:7). In this study, I combine both individual and group resilience under social resilience.

argue that since we agree that societies and environments change and shape each other, we should also understand that resilience of humans (communities) faced with changes in ecological systems is a special case compared to ecological resilience. Thus, the resilience of ecosystems may not necessarily lead to resilient human groups within these ecosystems, and that human groups may desire own resilience (social resilience) within non-resilient ecosystems or even within resilient ecosystems. Therefore, studying both ecological resilience and social resilience should capture these essentials and draw disciplines together owing to the agenda of making societies better and promoting sustainable environments.

Friedland et al. (2005:8) argue that even with the ambiguity of social resilience, the concept is 'real' and societies and their leaders cannot ignore it, though it is very elusive. The priority for scientists is to ease the bottleneck surrounding indicators, measurement and methods for studying social resilience.

Maguire and Cartwright argue that social resilience approach identifies the resources and adaptive capacity that a community can utilise to overcome the problems that may result from change. The approach builds upon the inherent capacities of a community, rather than only relying on external interventions to overcome vulnerabilities (Maguire & Cartwright 2008:3).

Drawing from the previous definitions, there is an appreciation of communities' (individuals, households and groups) active participation to build resilience and enhance survival and adaptation by confronting livelihood challenges. For example, human societies faced with adversity, like poverty or environmental changes that affect food security, have the ability to transform their situation to minimize vulnerability by, for instance, willingness to venture into diversified livelihoods. These arguments on social resilience differ from the general ecosystem resilience theory as defined in ecology, and as relates to the three characteristic given in the RA definition.

Although social resilience lacks consensus on the mentioned aspects, there seems to be agreement on its precedence especially within communities affected by manufactured or naturally occurring hazards and disasters. I follow the emphasis of Friedland that the challenge to social scientists is to refine the definition of social resilience, to develop methods for its measurements and to identify and investigate factors and processes that enhance social resilience or undermine it (Friedland et al. 2005:9).

Scholars have used social resilience when addressing human societies to show adaptation in the face of adversity (Abesamis et al. 2006; Adger 2000; Adger et al. 2002; and Friedland et al. 2005). The last decade has witnessed extensive research focusing on strategies to promote resilient communities especially against poverty and disasters. The

efforts have culminating into blue prints or hand books for building resilient communities, rural development as well as building the adaptive capacity of poor people in line with sustainable development (see for instance Folke et al. 2002; Hegney et al. 2008; U.S. Indian Ocean Tsunami Warning System Program 2007; Resilience Alliance 2007; and world resources Institute 2008).

Despite the wide usage of ecological and social resilience across disciplines and application to sustainable development, the concepts elicit misunderstandings as earlier mentioned. Some scholars are still cautious of the existence of little empirical evidence, and hence understanding, of how resilience emerges, is socially produced or declines as a structural property of SES as well, as how individual risk minimizing strategies translate (or do not translate) into the resilience of the overall system[14]. Others like Kelman criticize the most cited authors in social resilience (including Janssen et al. 2006; Adger et al. 2006; Adger 2005; and Folke et al. 2006) as the concepts broaden in usage across the scientific community (see Kelnman 2008).

Social resilience in this study refers to the ability of individuals, households and groups in Kasarani to adopt risk minimizing strategies that overcome changes occasioned by the conversion of Lake Naivasha and resulting social and economic challenges. The combination of strategies and behaviours at individual, household and group levels utilized to deal with livelihood challenges and the outcome of continued adaptation and survival prompt the social resilience thinking.

Questions regarding the preparedness of people for possible future livelihood challenges demonstrated a mixture of uncertainty and anticipation of more challenging times and thus justify the need to harness available assets and abilities to be able to respond; especially through livelihood diversification and strengthening social relations (social capital).

How sustainable their responses are in the future and the measure of livelihood resilience or vulnerability requires careful measurements through well-defined methods, processes and theories and is dependent on current and future political, institutional and economic dynamics in the area. This paper does not promise to achieve these aspects, but appreciates their significance within livelihood studies, poverty alleviation strategies and discussions on sustainable development.

2.2 Vulnerability

Vulnerability in livelihood literature refers to the probability that livelihood stress will occur - with more stress or less capacity to react implying increased vulnerability; thus, vulnerability might be denoted 'livelihood vulnerability' (Alwang et al. 2001:11). The

[14] http://www.fg1501.uni-koeln.de/

definition, use and measurement of vulnerability differ across disciplines (see for instance Eakin & Luers 2006; and Alwang et al. 2001).

Livelihood vulnerability needs to be considered when devising measures that promote social resilience. I use vulnerability in this study drawing on the definition in livelihood literature to address the various factors that expose people of Kasarani to livelihood stress and shocks, referred to as 'vulnerability context' (de Haan 2006:3; and Ashley & Carney 1999:47) and explain their response and coping mechanisms. Concepts of livelihood shocks and stress receive minimal definition within livelihood literature. However, if we take livelihood shocks to mean unexpected disturbance to livelihoods, which is abrupt and violent, and livelihood stress to mean less abrupt livelihood challenges, which last longer, as discussed in de Haan (2006:3), we expect these shocks and stress to be context or case specific. Dependence on a single livelihood strategy may prompt shocks or stress when changes or disturbance occurs to the livelihood. People engaged in multiple livelihood activities are less vulnerable since their activities are mostly mutually supportive and disturbance may not destroy all of their activities.

In the case of Kasarani, periodic layoff from large-scale farms is considered the main factor contributing to the vulnerability of workers. Flower workers depend upon the self employed (business owners) for goods and services. These two groups are mutually dependent of one another; meaning that disturbance on one affects the other albeit in dissimilar ways.

2.3 Sustainable Livelihoods Approach (SLA)

Generations of research have yielded various approaches with some representing blue prints for alleviating poverty and fostering sustainable development. Poverty elimination and sustainable development approaches as normative goals attract interdisciplinary usage. A most notable approach introduced to development studies is 'sustainable livelihoods' (SL) by Chambers in a 1987 paper at IDS[15]. Earlier approaches like the perspective of *dependencia* and neo-Marxism of the 1970s and 1980s and a micro-oriented 'survival studies' were replaced by this more productive actor-oriented perspective at the beginning of 1990s (de Haan 2006:9).

Chambers and Conway proposed a definition of livelihood to comprise the capabilities, assets (stores, resources, claims and access) and activities required for a means of living. The authors argue that a livelihood is sustainable when it can cope with, and recover from, stress and shocks and maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contribute net

[15] The Institute of Development Studies (IDS) in the UK is involved with international development research, teaching, and communication and aims at addressing world challenges including poverty (www.ids.ac.uk).

benefits to other livelihoods at the local and global levels and in the short and long terms (Chambers & Conway 1991:6) . A livelihood strategy refers to the range and combination of activities and choices that people make/undertake in order to achieve their livelihood goals including productive activities, investment strategies, reproductive choices etc. (DIFD 1999).

The SL approach owes its roots and development to research institutions (e.g. Institute of Development Studies), NGOs (CARE, OXFAM), and donors (DFID, UNDP) (Ashley & Carney 1999:5). The approach and framework was boosted by, among others, its adoption by the DFID following a 1997 UK government's *White Paper on International Development,* whose main target and aim was to halve the proportion of people living in poverty by 2015 (ibid: 5). According to the DFID, poverty-focused development activities should be people-centered, responsive and participatory, multi-leveled, conducted in partnership, sustainable and dynamic (see Ashley & Carney 1999:7). The DFID framework recognizes the priorities that people identify and the different strategies they adopt in pursuit of their priorities as well as institutions, policies and organizations which govern access to assets and opportunities and people´s livelihood assets (ibid.:7).

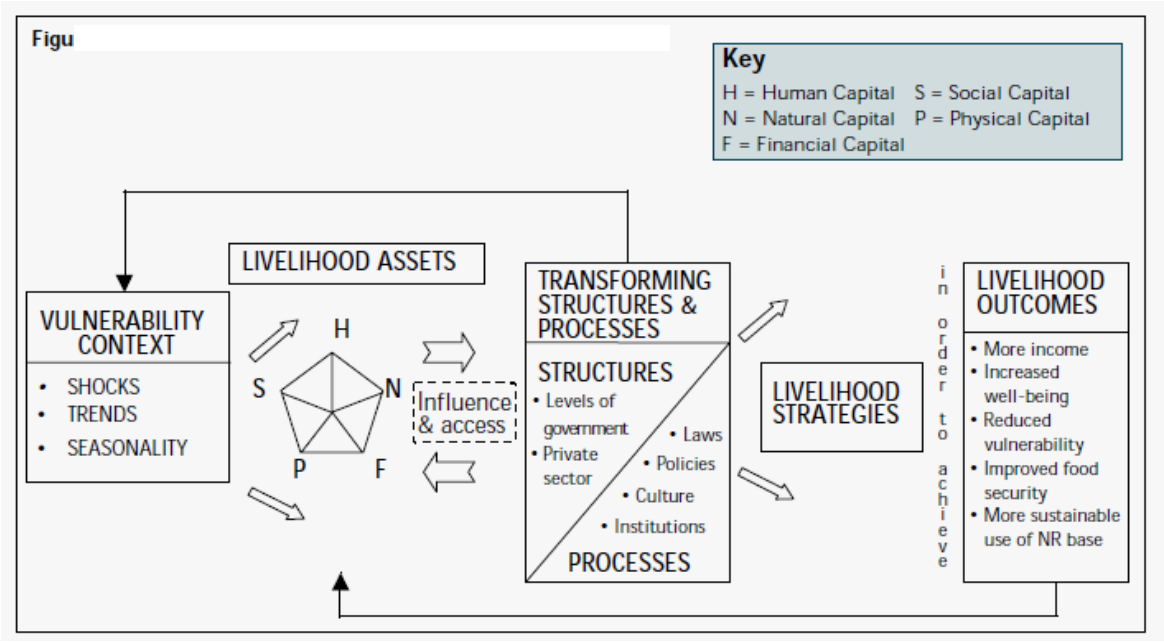


Figure 1: DFID SL Framework (Ashley & Carney 1999:47)

Carney explains the assumption behind the framework: that people pursue a range of livelihood outcomes (health, income, reduced vulnerability etc.) by drawing on a range of assets to pursue a variety of activities. Their priorities, preferences and influences of different vulnerability, including shocks (such as drought), overall trends and structures (such as the roles of government or of the private sector) and processes (such as institutional, policy and cultural factors) determine the livelihood options they pursue. The

combined factors determine access to assets and livelihood opportunities as well as the way in which they can be converted into important outcomes (Carney et al. 1999:3).
The SL approach has its limitations and challenges of application. Drawing from a DFID conference in July 1999, five of the twelve useful guidance and challenges for SL discussed in Ashley & Carney (1999:1) are listed in Box 1. In addition, a seeming reluctance in furthering SL studies is reported by Batterbury, who describes decreased attention by the DFID on SL research today as opposed to the 1990s (Batterbury 2008:3).

In this study, it is important to acknowledge that Lake Naivasha and the investments in the area (especially floriculture, wildlife conservation etc.) fall within diverse national and international governance structures. Being a ramsar site[16], whose products are consumed nationally and internationally, the wetland is a playground for different formal institutions and organizations (state and international) and informal institutions and organizations representing the minority[17] groups (mostly floriculture workers).

Box 1: Useful guidelines and Challenges for Sustainable Livelihood Approach (Ashley & Carney, 1999)

1) *Holistic SL analysis can provide an invaluable basis for design, but should lead to focused entry points. Projects guided by SL approaches may be anchored in a single sector, but the contribution to livelihoods and links with initiatives in other sectors should be clear.*
2) *The SL framework is just one tool for livelihoods analysis. A wide range of other methods – including elements of poverty, stakeholder and institutional analysis – is required to implement SL approaches.*
3) *SL analysis can contribute to the process and content of policy dialogue; other tools/skills are needed to understand the complexity of structures and processes and to build momentum for change.*
4) *SL approaches can be used in any sector and as a common language for cross-sectoral teamwork. Perceived differences between various development 'approaches' are greater in language than in practice.*
5) *The SL framework is a useful checklist for the design of monitoring systems. However, measuring change in livelihoods is difficult. Participatory approaches to monitoring and evaluation are essential.*

2.4 Households as Units of Study in SL

The conventional understanding of a household as a social group, which resides in the same place, shares meals and makes joint or coordinated decisions over resource allocation and income pooling (Ellis, 1998: 6), has been revised. This follows, among

[16] Wetland of international importance (Ramsar convention of wetlands, 2009) http://www.ramsar.org/cda/en/ramsar-about-sites/main/ramsar/1-36-55_4000_0__
[17] Minority in respect to their counterparts, such as large-scale investors who have greater bargaining power.

other factors, increased mobility, decomposition of households and individualism in decision-making on economic or subsistence options; leading to 'new' forms of households such as single person and female-headed households (de Haan 2006:10).

De Haan argues that rather than pursuing an optimal balance in a harmonious domestic unit, individuals (especially the poor) now pursue their own ways to improve their situation, such as diversification or migration, to exploit new opportunities (ibid: 11). Households became important units for collection of empirical data in SL studies (ibid: 9) allowing the possibility to describe livelihood strategies at an individual, household and village or even regional and national levels (Scoones 1998:14).

With reference to Kasarani, interviews and observations show a growing tendency of disintegration of some households from extended and nuclear households into the formation of single-person households and female-headed households. This form of disintegration represents individualism rather than collectivism on income-related decisions making. In short, labour migrants have their own households in Kasarani and some have networks with their rural homes necessary for mutual exchanges (cash and commodity flows). This study covers the activities of individuals, households and groups of people from different households and with varying assets and income endowments.

2.5 Institutions and Organizations as Applied to Livelihood Analysis

Institutions are constraints that human beings impose on human interactions and their enforcement characteristics (North 1995:15). Institutions are defined in the broadest sense to include habitualised behaviour, rules and norms that govern society, as well as the more usual notion of formal institutions with membership, constituencies and stakeholders (Adger 2000:348). The use of institutions in this study draws on these two definitions, especially North's classification of institutions, to include formal rules and informal constraints. Formal rules may include the constitution of a nation while informal constraints are conventions, norms and self-enforced codes of conduct (North 1995:15). North defines organizations to consist of groups of individuals bound together by some common objectives: firms, trade unions and cooperatives are examples of economic organizations. He classifies political parties, the senate and regulatory agencies under political organizations, while religious bodies, clubs etc. are examples of social organizations (ibid.:16).

Scholars in SL emphasize the importance of institutions and organizations especially in terms of access to and use of resources/assets as well as access and involvement in livelihood opportunities (see Scoones 1998:11). In implementing SL, for instance, Ashley and Carney are wary of possible challenges brought by power asymmetries and politics (Ashley & Carney 1999:35). For purpose of this study, discussion will focus on formation

of informal institutions and social organizations, and their importance in day-to-day interactions and livelihoods as relates to social resilience building.

3. Data collection and analysis

3.1 Methodology: Choice of the Study Area and Informants

Various reasons (including indicators of poverty) explain why Kasarani village was selected as the site for this study; it represents one of the most recent settlements developed around Lake Naivasha owing to employment-driven in-migration based on cut flowers and tourism, among other investments and activities. Riparian cultivation is also a recent practice spanning two year since its introduction in Kasarani in 2009 (field data 2010). Other settlements such as Kihoto near Naivasha have well established small-scale riparian cultivation. Kamere, south of the lake, has limited riparian cultivation (I observed two smallholder gardens).

The unique location of Kasarani, being between four main large-scale farms (Bilashaka, Groove, Shalimar and Loldia farms (*see* Fig. 2)), with other farms extending after these four, provided the opportunity to interact with workers from different farms as well as residents engaged in other livelihood activities. Workers drawn from the four main farms were most frequently interviewed due to easier access in Kasarani.

Other settlements (Kihoto, Kamere and much of the area south of the lake) have easier access to better infrastructure due to proximity to the main town (Naivasha) such as tarmac roads, health facilities and transport; Kasarani is cut-off from Naivasha and does not enjoy such facilities and services. Despite their poor qualities and standards, schools, electricity, garbage collection by the municipal council, provision of security and drinking water are also new services and facilities in Kasarani.

Multi-ethnicity, differential income and diverse livelihood strategies as well as demographic patterns account for the heterogeneity of this village and are important aspect of study. The settlement is complex with housing units closely packed and with limited living space. Households could entail an individual or two people either related or not (like in the case of friends sharing a single room), with or without children, and also with or without active links with rural homes. As such, a household in this sense is defined in terms of decision making on involvement in economic activities and over the outcome of livelihood strategies. A household head is the person (male or female) providing income for the other member(s) and one who can decide upon use of this income, irrespective of age and gender or sometimes, blood relation.

However, households are quite different and one cannot generalize homogeneity in the area and across the other settlements. Some people who have lived in this area since its

establishment own land and have own permanent lifestyle and well defined households, while new migrants are lucky to get a one-room house (mud-built, iron sheet-built or sometimes stone-built) given the high demand for housing units as population grows due to continued immigration and fertility rates. A single room could house up to six people while in others only one person; monthly house rent ranges from 5€ and 15€ (according to the quality of housing).

Counting the number of households in Kasarani is quite challenging irrespective of its small size. This is explained by the absence of population and housing data even after the recent census of 2009 and the lack of planning and complexity of small housing structure. An earlier planned attempt to count proved futile and mapping was the last resort to enable choice of informants and data collection (as shown in the schematic map Fig. 2 and the preceding discussion).

Quota sampling, snowball sampling and purposive sampling were the main methods[18] used to choose informants (Bernard 2006:169-86). Qualitative data was collected through participant observation (ibid.:342), in-depth and key informant interviews and semi-structured interviews (Bernard 2006:210), as discussed later in this chapter. The limited time available for fieldwork (two months) made it sensible to use qualitative methods emphasizing meaning more than numbers.

Quantitative data was gathered via a questionnaire survey (following the mapped sub-divisions of Kasarani) and covered general household information: bio-data, household's/individual's assets, economic activity involvement and migratory behavior. It was not possible to get quantitatively representative samples for flower farm workers, ethnic differentiation and general population; this could affect drawing reliable generalizations of the entire population. Census results for 2009 were not available at the study period and no sampling frame existed for the area, adding to previously discussed problems. Despite lack of population and housing data and the complexity of the settlement, 31 questionnaire interviews were conducted, applying methods that could increase the validity of results (discussed after Fig. 2).

Our target groups were informants specialized in the various interest areas: large-scale farm employment, cultivation (including riparian cultivation), livestock production (especially small-scale), fishing and small-to-medium size business investments from which I present some cases later in the paper. Figure 2 shows where informants were selected:

[18] For a comparative analysis of qualitative and quantitative data in research, *see* Mack et al. (2005). The debate over reliability and validity of qualitative and quantitative approaches is discussed in Merriam 1995; Becker 1996; Denzin & Lincoln 2007, as well as Bernard 2006.

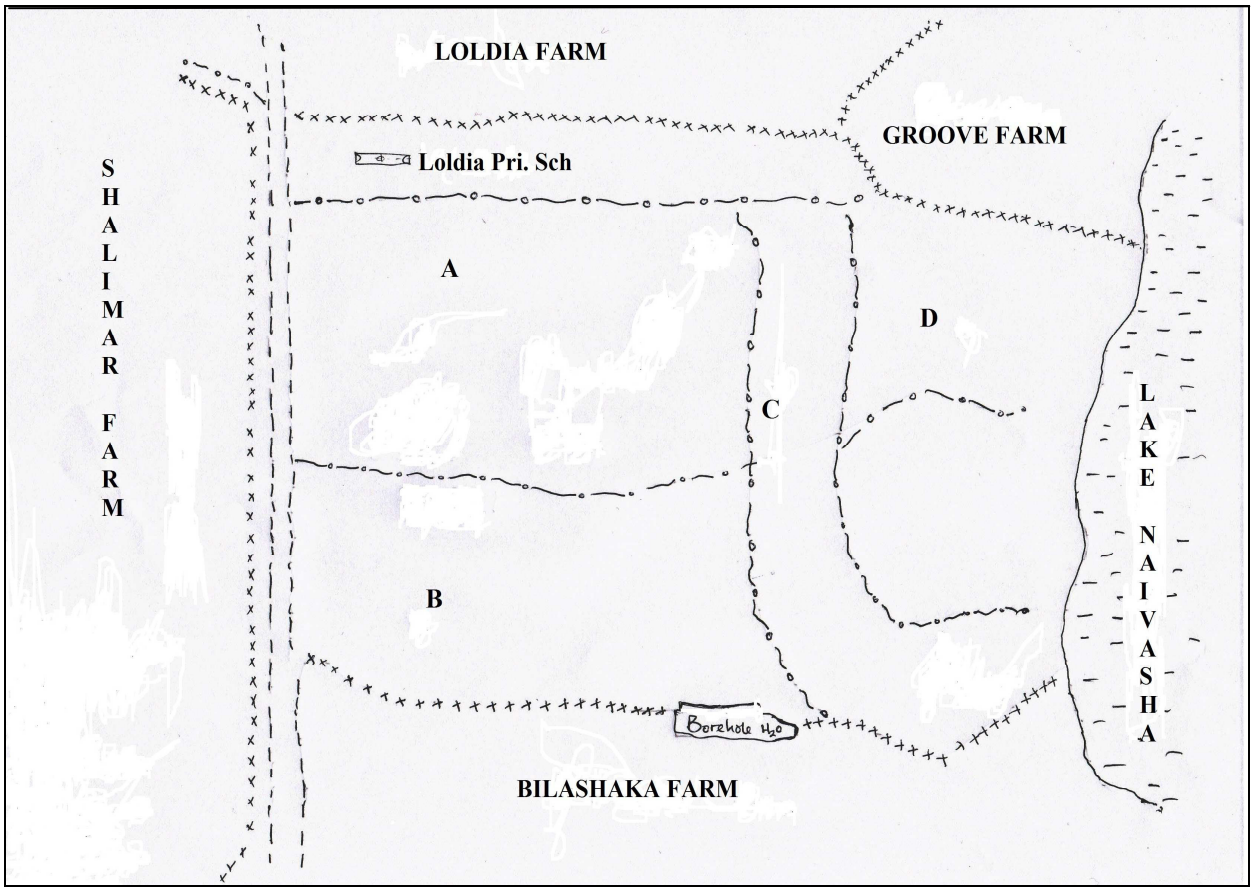


Figure 2: Schematic map of Kasarani showing the informal subdivisions[19] and the four main large-scale farms surrounding the village (field data 2010).

KEY

A-Kasarani, B-Matopeni, C-Ngurumuki, D-Tumaini

---------- Main earth road

From the schematic map of Kasarani (Fig. 2), we selected from the four informal subdivisions of the village (i.e., A-Kasarani, B-Matopeni, C-Ngurumuki and D-Tumaini/Kosovo), taking gender, ethnicity and economic activity variables as well as the required household information into consideration. These formed the samples for informal, semi-structured and questionnaire interviews covering the interest livelihoods.

[19] The subdivisions are informal and only known to the residents, the entire settlement is referred to as Kasarani. Each sub-division has a name which holds meaning, i.e Sub-division A (Kasarani) has its name borrowed from Moi International Sports Centre in Nairobi. B (Matopeni) derives its name from the mud-houses dotting the entire area (*matope* is Swahili word for mud). C (Ngurumuki) is named after the original owner of the land which has recently been sold to other residents, and D (Kosovo) borrows its name from the late 1990s Kosovo War, at one time the area was considered to be a hide-out for criminals and immorality until recently; the church leaders in the area have pushed for a change of name to Tumaini.

3.2 Data collection

3.2.1 Participant Observation and Semi Structured Interviews

Participant observation involves immersing yourself in a culture and learning to remove yourself every day from that immersion so you can intellectualise what you've seen and heard, put it into perspective, and write about it convincingly (Bernard 2006:344). Participant observation[20] in this study involved living in the village with the informants from August to October 2010 and interacting with them in their daily activities, recording observations as well as carrying out informal interviews and semi-structured interviews (*see* Table 1). Rapport building was enhanced by my ability to speak the language of informants (Swahili). Most people were free to discuss some of the sensitive issues they experienced at work, such as sex-for-work and bribery occurring in a few of the big flower farms. In the interest of my informants, I conceal their identity throughout this paper.

Informal conversations, which also enriched this data, were possible through hanging out with community members whose main topics involved hardships at work, forth-coming job offers and general aspects and problems in the settlement. All information about the general way of life of Kasarani residents was noted down as was information regarding facilities and services available (general infrastructure) along with livelihood assets and activities.

Semi-structured interviewing is an open-ended form of interview based on the use of an interview guide or a written list of questions and topics that need to be covered in a particular order (Bernard 2006:210). Topics covered in semi-structured interviews included diversification, multi-locality of livelihoods and livelihood networks and decomposition of households. Additionally, informal institutions and social organizations, cash and commodity flows, the question of Fairtrade and residents perceptions on future stay in Kasarani were covered. Data collected in Kasarani and informants' details are summarized in Table 1.

Table 1: Summary of methods and data collected

Methods	**Data Collected**	**Period of data collection**	**Details of informants**	**Time span**
Participant observation	-Household composition and livelihood strategies -Day-to-day life -Ethnic composition and relationship -Livelihood assets and	August 2010-October 2010.	Stayed in the village for the whole period and had constant interaction with	Contemporary issues

[20] More information on the use of participant observation method, its strengths and weaknesses *see* Mack et al. 2005; Bernard 2006.

	their importance -Fairtrade implications to workers -Shocks to livelihoods		Kasarani people.	
Key informant/ In-depth interviews	-History and development of Kasarani -Land use and change causes -Perceptions on lake`s variability in water levels. -Importance of horticulture farms and tourism -Education in Kasarani -Perceptions on future of Kasarani		7elders interviewed (3 men, 4 women)	From 1950 to present
Semi-structured interviews	-Diversification, Multi-locality and livelihood networks -Decomposition of households -Institutions and organizations supporting and regulating livelihoods -Cash and commodity flows -Fairtrade -Perceptions on future stay in Kasarani		4 Government officials interviewed. 30semi-structured interviews conducted	From 1980 and 1984 to present (period of establishment of large-scale flower farms and the initial stages of the development of Kasarani Village)
Household survey	-Household composition a Bio-data -Households´ Assets -Household income and sources -Migration history of household members -Cash and commodity flow -Perception of future stay Kasarani		31 household heads	From 1984 to present Before 1984 to present

3.2.2 Household Survey and Data Analysis

Thirty-one households were selected for questionnaire interviews in Kasarani. This number was based on the diversity of ethnic groups in the area and a need to capture at least half of the ethnic groups in the interviews. As earlier mentioned, the survey is not a quantitative representative of the total population of the village. The village's population is estimate at 13,000 and no exact numbers were available during the study; this number

actually surpassed an earlier estimate of 3,000 people. Other than being referred to as a village, Kasarani actually represents a complex and heterogeneous town with closed-packed single-room housing units, which challenged the choice of informants to ensure reliability and validity of data as representative of whole population. This scenario is not uncommon in the many unplanned and rapidly urbanizing parts of Kenya.

As earlier mentioned, the data collected included household composition and bio-data, assets, livelihood strategies and migration history. Interviews covered most income-earning household heads (male or female) and a majority of unemployed people. Other data included information on cash and commodity flows as well as the perception of future stay in Kasarani. This data was necessary to understand general lifestyle of the people.

SPSS formed the basis for quantitative data analysis. Qualitative data, which formed the largest part of work done, is combined with survey results to capture the totality of experiences from informants representing the main interest areas. Short cases are presented as examples of livelihood diversification and social resilience building. Despite challenges in the survey, findings corroborate in most cases.

3.3 Research Limitations

The two-month period for data collection could not allow for comprehensive research based on detailed triangulation methodology and covering comparisons of settlements, livelihood activities and flower farms. A fact based discussion on most (if not all) formal and informal institutions and organizations and their interaction (positively, negatively or both) and ensuing impacts on livelihoods as well as management or conservation of the wetland could provide additional data on poverty reduction and sustainable management of the ecosystem.

Lack of population and housing data and the complex structure of the village posed a big challenge, especially in sampling. Choosing informants as an outsider in Kasarani was marred with instances of suspicion and caution, especially when informants were asked to share information about their employers (flower farms). This is explained by worker´s fear of losing jobs in case of breach of anonymity; therefore, names of informants are not mentioned here. It takes a good rapport to get not only adequate data, but also truthful and reliable information.

For the case of flower farms, more women than men were interviewed because flower farms employ more women within green houses (for harvesting, grading etc), a scenario replicated for majority horticulture investments. Men’s work mostly includes spraying farms and crops, extending green houses and security guards, among others.

Most cut flower workers work every day throughout each week and off-days mostly depend on workload; they are not mandatory and often are not pre-arranged. This made scheduling interviews problematic in some cases.

4. Context of wetlands: conversion and global markets

This chapter proceeds from a short discussion on the context of African wetlands in general and specifically in Kenya and Lake Naivasha relating to changes introduced by incorporation of these ecosystems to the national and global economies; resulting competitive resource access and use and the nightmare of management and conservation are also discussed.

4.1 Wetland Conversion and Implications

Natural resources remain the mainstay for most world economies and more so in Africa. In the Ramsar's convention on wetlands resolution namely Ramsar COP Resolution V111 34, wetlands are amongst the recognized natural resources expected to alleviate poverty by enhancing food security in most of Africa, especially among poor and rural communities[21]. However, concerns are that wetland degradation, poverty within wetland ecosystems, unequal resource access and use within and between different actors as well as, conversion of some wetlands due to effects of national and global economies (such as global markets for agricultural produce from wetlands, tourism etc.) may pose threats to African wetlands and future livelihoods.

Many wetlands in Africa, as well as other parts of the world, are at risk. A list of some threatened African wetlands discussed in Kabii (1996:4-6) include: the Senegal River, Tana and Athi rivers (Kenya), Waza National Park (Cameroon) and Lake Victoria. Threats include changes in wetland water quality due to the effects of industrial effluent and agricultural pesticides, siltation from highland catchment areas and introduction of alien species of flora and fauna leading to colonisation by single species and loss of endemic species diversity (ibid.:4).

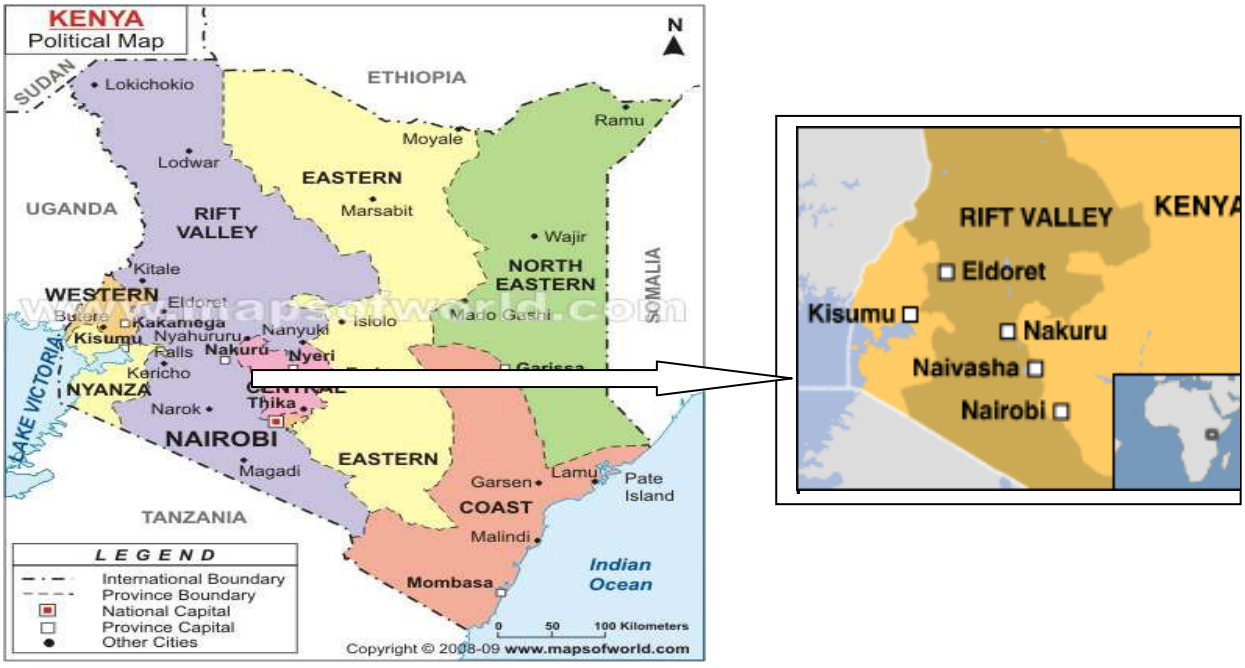
However, more interesting is how most wetlands are increasingly being incorporated into national and global economies and the outcome of such conversions. Scholars like

[21] Ramsar COP Resolution VIII 34, notes the high dependence of local communities on wetland resources, particularly in developing countries, especially in small-scale subsistence agriculture, domestic water supply and other uses that may contribute directly to poverty alleviation and that the poor, in particular women, often depend on wetland resources for their livelihoods and can be severely disadvantaged if wetlands are degraded or lost. The Lake Naivasha wetland is a key resource not only for the country´s economy and subsistence of local and migrant populations, but also serves world markets with agricultural produce and tourism. In Kasarani, asymmetry of resources ownership, access and use as well as poor remuneration from employers render most livelihoods difficult to manage making poverty a common subject in the area.

Carney (1993:402) consent that environmental resources of most developing nations are increasingly being integrated into the global economy, leading to changes in property rights and the attachment of new value to these resources. A case in point is presented by Southgate and Hulme (2000) on the dynamics surrounding wetlands and property rights in Kajiado district of Kenya. I follow Carney's position to emphasise that the conversion of wetlands (driven by global economy) is largely responsible for dynamic property rights and instances of resource scarcities and contestation leading to socio-economic stratifications and inequalities, which are felt more by poor populations within these ecosystems. This follows gaps in consultative dialogue that tend to neglect former property rights of such resources, the triumph of powerful investors against weak local populations and the so called 'protected areas', which in some cases fence off minority indigenous groups for the benefits of national economies or global markets.

4.2 Kenya: Context of Wetlands

Kenya is positioned in the Eastern part of Africa and shares borders with Tanzania, Uganda, Ethiopia, Somalia and Sudan (Map 1). The country has eight provinces subdivided into 47 counties. This study was conducted in Naivasha, a division of Nakuru County in the Rift Valley province of Kenya.



Map 1: Provincial Map of Kenya and Rift Valley Province (right) showing some important towns (source: www.mapsofworld.com)

Kenya's rainfall is relatively low and unreliable in most parts. The country's total land area is 582,650 Sq km of which 11,000 Sq km is covered by water and only 16% of the land area receives more than 1000 mm of annual rainfall (Irrigation and Drainage Master Plan,

2009: 1). Arid and Semi-arid areas cover 80% of the land and receive an annual rainfall of less than 1000 mm, thus limiting agricultural productivity (ibid: 1). The north eastern and eastern Provinces and the northern parts of the Rift Valley around Lake Turkana are the driest with an annual rainfall estimated at 200 mm or less. The Central, Rift Valley, and western Provinces are the wettest, with annual rainfalls estimated between 1200 mm to over 2000 mm, especially at Lake Victoria and Mt. Kenya regions.

Kenyan economy and the livelihoods of people largely depend on wetland resources, especially given the country's insufficient rainfall in some parts for rain-fed agriculture. An estimated 12% of Kenya's land surface forms the medium and high agricultural potential land (Irrigation and Drainage Master Plan 2009:1). For a country whose subsistence is agriculture-based under conditions of low rainfall and poor soils, wetlands become essential for livelihoods, food security and the national economy.

Hughes and Hughes (1992:174) classify Kenya's wetland to include: tidal wetlands, the Lotikipi Plains, riverine swamps and floodplains (Tana River, Athi/Tsavo/Galana System, Ewaso Ngiro North, Ewaso Ngiro South and South-western Rivers), natural lakes (L.Victoria, L. Amboseli, L. Magadi, L. Naivasha, L. Elmenteita, L. Nakuru, L. Bogoria, L. Baringo and L. Turkana), isolated swamps and pans, minor lakes and artificial impoundments (*see* also Kiai & Mailu 1998, for a list of Kenya's wetlands). The authors argue that most of these wetlands are unprotected despite their importance in supporting biodiversity, economy and the livelihoods of people.

Wildlife, tourism, human habitation and industrial investments are among the main activities and investments within some wetlands in Kenya. Continued internal migration, settlement developments, extensive investments into small-scale and large-scale agriculture, industrialization and urban growth have resulted to contestation of some key wetlands by local populations, government and private investors in Kenya. Southgate and Hulme portray this contestation as having colonial background necessitated by British land policies which allowed for alienation of important highland and wetland regions of Kenya to settlers (Southgate & Hulme 2000:73; Okoth-Ogend, 1999; and WWF 2011).

Wetland resources in Kenya are faced with problems of limited (or lack of) access, especially by rural poor communities living near them, particularly to women or female headed households, therefore deepening poverty among them (Kenya Land Alliance 2006:2). According to Kenya Land Alliance (KLA), extreme poverty among the rural poor living around wetlands remains a daily reality for more than 56% of Kenya's population, who subsist on less than 1USD a day. KLA sites appropriation of wetlands by private developers as the main factor resulting in unequal access and utilization of wetland

resources by rural poor communities living within the areas, thereby undermining common property ownership, which exists for most wetland resources (ibid.:2).

The rural poor, especially women and female-headed households, gain access to major wetlands and other natural resources only by offering cheap labour (KLA 2006:2). Despite international recognition of secure access to wetlands by poor communities for food security and livelihoods, KLA notes that there is a failure of national and global institutions to identify problems and implement joint solutions that increase the ability to secure access to wetland resources and reduce rural poverty.

Most wetlands in Kenya are reportedly mismanaged and degraded; largely to blame are corruption and poor laws of wetland management, however poor communities fall victims to blame, in most cases. An example of land misappropriation is the corrupt/illegal allocation of riparian land within some key wetlands by government officials and institutions of Kenya to private developers as reported in the report of the Commission of Inquiry into the Illegal/ Irregular Allocation of Pubic Land, commonly known as the Ndung'u Report (*see* Southall 2005:142).

Management efforts have also been complicated by, among other factors, the existence of numerous conflicting acts and by-laws, which regulate activities related to rivers and riparian areas in Kenya (Karisa 2010:3), as illustrated, for instance, by the conflicting meaning of riparian land in Table 2.

Table 2: Conflicting meaning of riparian land from different acts and laws (Karisa 2010: 3)

Table 1: Statutory provisions (Kenya) on riparian width	
Statute/institution	Recommended riparian width (in metres)
Water Act (2002)	Minimum 6m and max. 30m from edge of river
EMCA	Minimum 6m and max. 30m from edge of river
Agriculture Act	6-10; sometimes ad hoc
Physical Planning Act	Minimum 2m in height and max. 30m horizontal from edge of river
Survey Act	Minimum 30m for tidal rivers only. No mention of other smaller rivers. Measurement from high water mark
Local Government Act	Ad hoc to a planner's discretion: 3m, 6m; in some instances it is taken as equal to width of the river or twice the width of the river.
City Council by-laws	City Council bylaws put a maximum of 30m from high water mark

GoK, Various Acts/City Council of Nairobi, 2007

Scientific data on Kenya's wetlands is minimal, a problem also shared in most African wetlands and wetlands around the world (*see* Finlayson & Spears 1999:6-7). This prompts need for interdisciplinary research on pollution, conversion, mismanagement, degradation, improperly planned settlements, poverty, urban and industrial growth, among other important factors, which need to be considered for effective planning, wise use, management and conservation of these resources. Putting into consideration the needs of

minority dependent groups and populations will largely contribute to sustainability of wetland management and wise use.

Kenya lacks adequate scientific studies on many important wetlands including the Nairobi River, which is heavily polluted yet passes through the city within reach of all concerned government institutions and conservation specialists. This river goes on to pollute the country's second largest river (Athi River) rendering the water unclean for human consumption and use in the many dependent populations in its course. East African wetlands have received considerable scientific research mostly from natural sciences (Lung & Schaab 2006; Dixon & Wood 2003)[22], but social science research is rare. Bridging this divide is important as it allows for consultative solutions drawn from interdisciplinary findings.

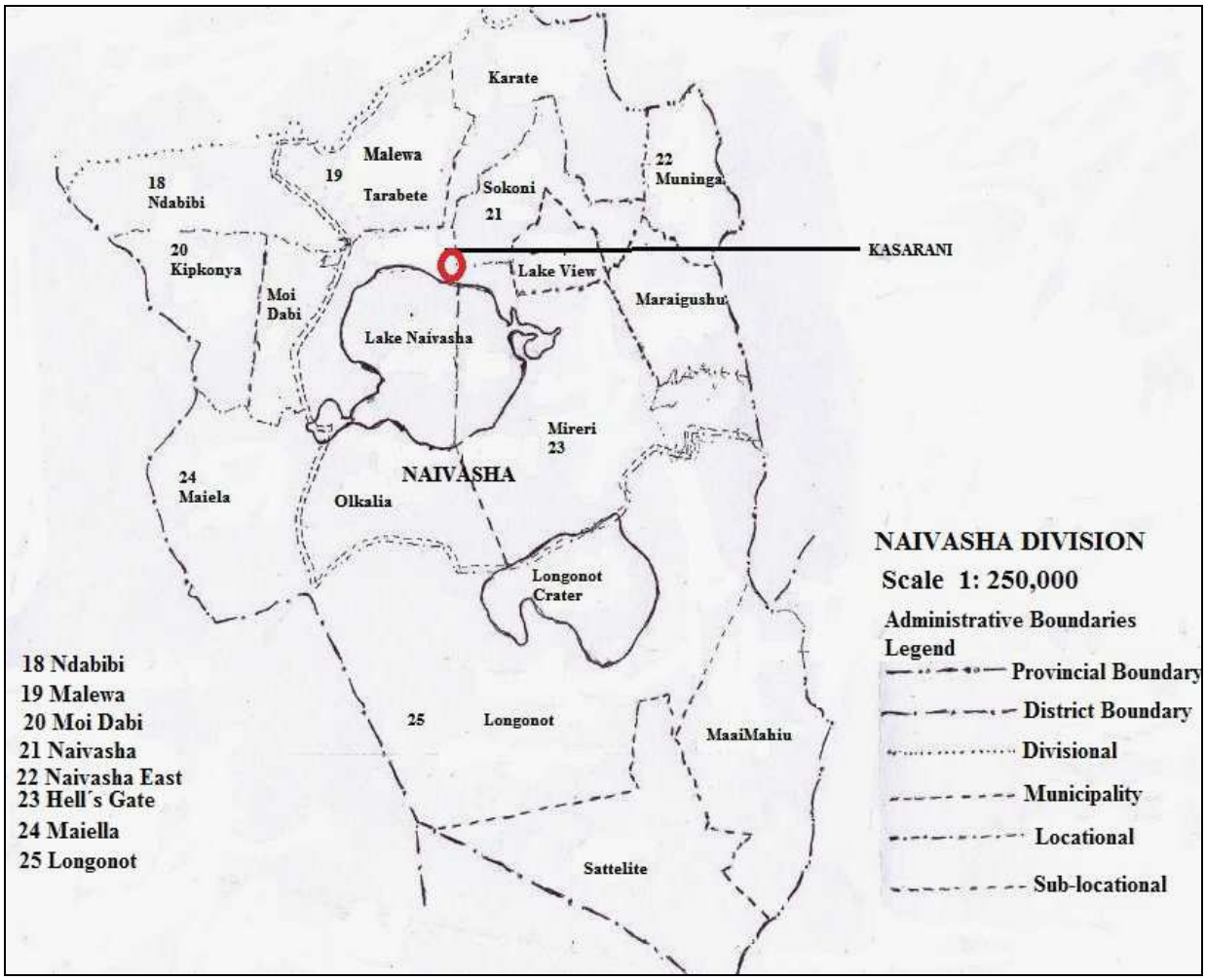
4.3 Naivasha Division and Lake Naivasha Wetland

4.3.1 Naivasha Division: Location and Economic Activities

Naivasha division lies in the Nakuru County of the Rift Valley province of Kenya and is located about 80km northwest of Nairobi in the eastern side of the Rift Valley. Nakuru County borders Baringo Central, Kericho, Laikipia, Nyandarua, Narok, Kajiado and Kiambu Counties and covers an area of 7,235.3 Sq Km (Nakuru District Strategic Plan 2005-2010:3). It is located between longitudes 35" 28" and 35" 36" and latitudes 0" 12" and 1" 10" south. The county has 16 administrative divisions, namely, Elburgon, Mauche, Lare, Nakuru Municipality, Bahati, Njoro, Mbogoi-ini, Naivasha, Gilgil, Molo, Keringet, Rongai, Olenguruone, Kuresoi, Kamara and Mau Narok (ibid.:3-4). Nakuru County is the fifth most populous of the 47 counties in Kenya with a population of 1,603,325 according to the Population and Housing Census of 2009[23]. Naivasha division is important for Nakuru County and Kenya as a whole due to its unique resources of industrial and horticultural establishments and tourism among others.

[22] *See* http://www.fg1501.uni-koeln.de

[23] http://www.knbs.or.ke/Census%20Results/KNBS%20Brochure.pdf



Map 2: Naivasha Division showing study area, Kasarani (field data 2010)[24]

Some of the most important resources in Naivasha division are Lake Naivasha/Lake Naivasha National Park (responsible for irrigated horticulture, tourism etc.), Hell's Gate National Park which lies to the south of the lake (tourist destination) and Olkaria Geothermal Power Plant (one of Kenya`s largest geothermal plants). Other resources include Eburru forest at the north of the lake and Mt. Longonot National Park (a few kilometers south of the Lake).

4.3.2 Lake Naivasha

Lake Naivasha is at 0°42 ' - 0 °50' S/36°16'-36°26' E, with an area of 15,600 ha (including islands) at an altitude of 1884 m, measuring 14 km from north to south and 17 km from east to west (Hughes & Hughes 1992:186). The nearest point of the lake is about 2 km[25] from Naivasha town; the lake is one of the fresh water lakes in the Rift Valley and the most

[24] This map was obtained from the area chief and had to be reworked to make it visible.
[25] Periodic fluctuations of L. Naivasha may interfere with the mentioned estimates.

important due to supply of irrigation water for large-scale horticulture in the area, tourism, wildlife and water for human consumption.

According to Hughes and Hughes, some 6,000 – 13,000 years ago, the lake was part of a much larger lake that encompassed the present lakes Elementeita and Nakuru and discharged down the Rift Valley southwards. This lake contracted rapidly after 6,000 BP and reached present levels approximately 4,200 BP (Hughes & Hughes 1992:186-88). The lake has a catchment of 2,378 Sq. km.

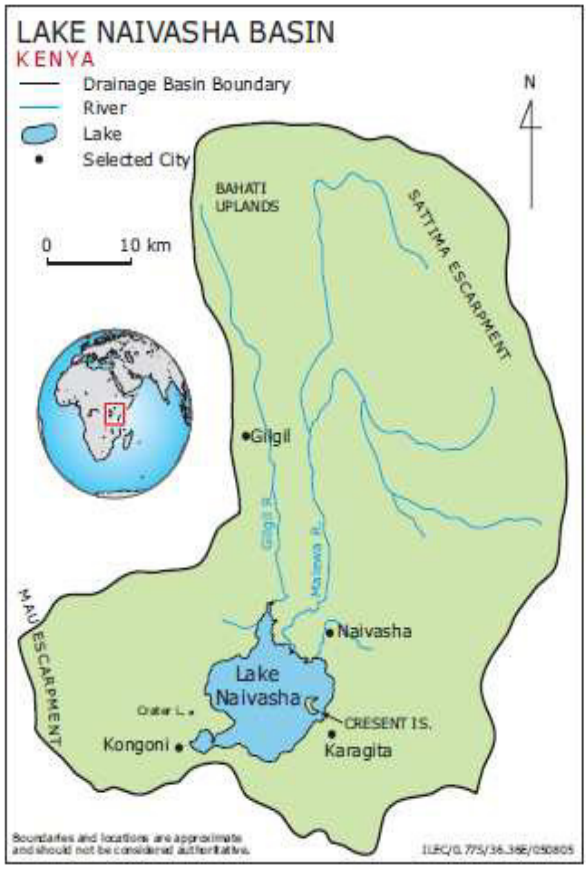


Figure 3: Lake Naivasha Basin (source: ILEC 2005)

The main water supply to the lake originates from the Aberdare Mountains and an area of high plateau farther north along the eastern rim of the Rift Valley. Two main rivers drain these areas and enter Lake Naivasha in parallel on the north shore. The Malewa River drains the western slopes of the nearby Aberdare Mountains and the Gilgil River drains on the plateau some 55 km north of the lake. A third and shorter river, the Karati, enters the swamp from the Aberdare Range at the northeastern extremity (details discussed in Hughes & Hughes 1992:186-88). The Malewa River has a catchment of 1,730 Sq km and provides 90% of the inflow. The Gilgil River with a catchment of 420 Sq km dissipates its waters before they reach the lake, while the Karati River flows to the lake only from December to February. Groundwater seepage, particularly along the north and northeastern shores is reputedly responsible for up to 16% of the total influx; the lake's

depth ranges from estimates of 6m-10m (Hughes & Hughes 1992; Becht & Harper 2002:1). This underground seepage is responsible for keeping the water fresh since the lake has no surface outlet.

Lake Naivasha is rich with various species of fauna and flora including different fish species, birds, hippos and various species of terrestrial wildlife. Dominant vegetation types are belts of papyrus (*Cyperus papyrus)* around the margins, stands of submerged macrophytes of which the principal species is *Najas pectinata* (Parl.) and mats of floating plants comprising *Salvinia molesta* Mitch and *Eichhornia crassipes* (Mart.) (Harper et al. 2002).

National Environmental Management Authority (NEMA) recognises Lake Naivasha as a crucial resource for the floriculture industry, generating billions of shillings per year and providing important avenues and pathways for employment for the vulnerable riparian and non-native communities; more so the women. Approximately 65% of the employees in the flower farm industry are women[26]. In 2003, the export of flowers created an export value of 211 million USD and accounted for 46% of the exported volume and 57% of the exported value of horticultural products (Westerman et al. 2005:5-7). A 2011 report by WWF indicates that Naivasha Basin accounts for 70% of Kenya's cut flower exports and generates approximately 9% or KSh 27.8 billion (approximately 400 million USD) of Kenya's total foreign exchange revenue of which almost half goes into production cost (WWF 2011:10). The report also estimates that flower farms in Naivasha employ 20, 000 people directly.

Europe is the leading market for cut flowers and other horticulture from Kenya. Figure 4 shows the Europe markets for cut flowers from Kenya.

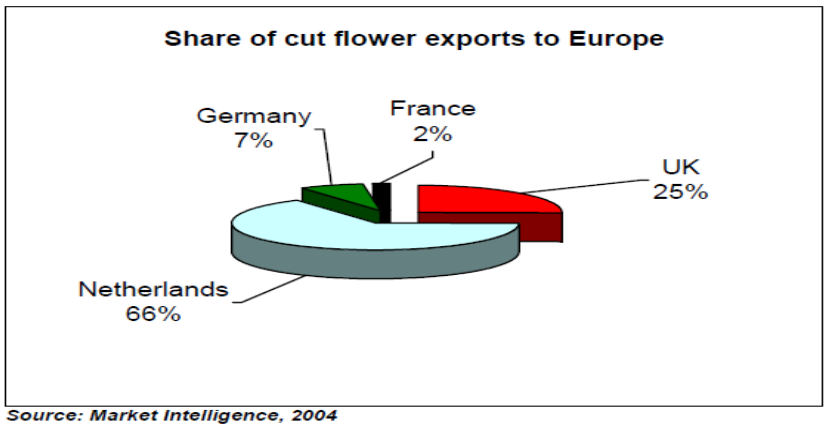


Figure 4: Share of Kenyan cut flower export to Europe in 2003 (Source: Market intelligence 2004).

[26] http://www.nema.go.ke/index.php?option=com_content&task=view&id=446&Itemid=37

4.3.3 Conversion of Lake Naivasha: Competition for Resources and Conservation Problems

Conversion of Lake Naivasha wetlands began with colonial alienation of land and the displacement of natives (WWF 2011:5) and later accelerated with the establishment of the horticulture industry for feeding global markets for flowers and other horticulture from the 1980s. For the case of Lake Naivasha, local people living in the informal settlements mostly created by migrant labour populations compete with big flower farms and other horticulture farms, large-scale livestock production investors (mostly at the north lake area), tourist facilities and wildlife, among others for wetland resources (especially land and water).

Media reports and previous studies have raised concerns about continued degradation of the lake; portraying it as occasioned mostly by human action of both weak local populations and powerful investors (*see* Mireri 2005:92; Jimoh et al. 2007:10-13; Becht et al. 2006; WWF 2011:18; Ochieng 2010; Betch et al. 2006:278-79; and Mireri 2005:94). Some suggestions point to destruction and mismanagement as fueled by the absence of or unclear conservation policies (for example, *see* KLA 2006:5) leading to the endangering of livelihoods and wetland resources and causing poverty in the area. Of course, actors within such a system vary in terms of benefits drawn from the wetlands; however, in most cases, poor people easily lose claims and become more vulnerable.

Competition for wetland resources at Lake Naivasha emanates from inequalities in ownership, access and use of these resources between rich investors and poor local population (field data 2010). A case in point is Kasarani settlement with an estimated populations of 13,000 people compressed within an estimated 120 ha of land (figures based on estimates during fieldwork) while the adjacent farms, whose land was 'grabbed' from natives in colonial period boast thousands of acres of land. Take Loldia farm as an example of the inequality in land ownership; Box 2 shows a quotation, which could be associated with asymmetries of power on land ownership.

Box 2: Comparing Land Size: Kasarani and Loldia

…the virgin untamed land drew the early settlers, in those days roamed by Maasai herdsmen and wild game…Loldia Farm was established by a settler who came to Kenya by ox-wagon after the Boer War and is still owned by the same family today. He was a renowned horseman who chose this beautiful corner of Kenya to enjoy all that was best in the early Kenyan Lifestyle.

On the farm's 6.500 acres, guests may walk or ride through herds of dairy and beef cattle and a flock of farmed ostriches, interspersed with impala, waterbuck and other plains game

(Adopted from www.safarinow.com/go/LoldiaHousekenya)

Prior to the 1980s, degradation of land and water at Lake Naivasha was not in the limelight as it is today. The increasing public outcry from the media, conservationists, some government quarters, non-governmental organizations and local population about a declining and degraded lake has persisted since the introduction of commercial floriculture. Despite their economic importance, many people see the rapid expansion of flower farms at Lake Naivasha as being quite detrimental to the wetland resources. On the contrary, flower farms are key employers of a large percentage of job seekers in Naivasha; some farms have been influential in the establishment of important facilities and services including schools and dispensaries, among others, in the settlements (discussed in chapter 6).

Today, Kenya holds five major interests within the Naivasha wetlands: the first is the multi-million large-scale horticulture industry dominated by cut flowers for international export; second is the unresolved colonial and post-colonial history of land grabbing, illegal allocation and ethnic segregation in land allocation (see Waki Report (CIPEV), 2008: 32) which remains a potential source for ethnic conflict and violence; third is the concern for wetland management and conservation, not only in the eyes of Kenyans, but also by the international community; the forth interest is the need to maintain sustainable tourism at the lake; and fifth, the interest of local people in terms of food security and employment. These interests are expressed within a wetland whose conservation policies are absent or very unclear to stakeholders (KLA 2006:4).

Conservation measures are also complicated by the existence of numerous conflicting actors working in more or less similar conservation measures (ibid: 4). KLA reports on the duplicity of functions and disjointed management of the wetlands by a number of institutions like the Lake Naivasha Riparian Association (LNRA), Lake Naivasha Management Implementation Committee (LNMIC) and the Naivasha Municipal Council, among others, which are also under-funded, under-supported and lack capacity. WWF notes the need for improved institutional arrangements to support a clear definition and management of water and the rules for its use in the different parts of the catchment (WWF 2011:2).

There is also the earlier mentioned problem of illegal allocation of riparian land at Lake Naivasha by government institutions and officials discussed in the Ndung'u Report (Southall 2005:142-51; Waki Report (CIPEV) 2008:30). For instance, the Kenya Wildlife Service (KWS) has illegally allocated land around Lake Naivasha since 1995 to some 14 beneficiaries, which severely affect the ecosystem (Southall 2005:147). Some named owners of big lands in the Naivasha riparian areas are Njonjo (first Attorney General of independent Kenya) where he has put up fabulous homes (Namwaya 2004:5).

5. Growth of a village at the fringe of a contested ramsar site

5.1 Kasarani: History and Development

The 21. century ownership of land at Naivasha region is embedded in the colonial history of Kenya (Okoth-Ogendo 1991:2) and the earlier mentioned post-colonial illegal allocation of public land in the 1980s and 1990s, especially to the so called 'politically correct individuals' (see Southall 2005; Waki Report (CIPEV) 2008:30). Alienation of fertile and well-watered parts of the Rift Valley also saw British settlers take up the Naivasha region, historically 'owned' by the Maasai (Okoth-Ogendo 1991:3).

The colonial 'divide and rule' policy concentrated ethnic groups to specific regions. This continued in the independent government where officials also allocated land within ethnic lines. As a result, for instance, the Kalenjin and Kikuyu, dominant in the Rift Valley, have continued to view each other as enemies (Waki Report (CIPEV) 2008:32). The Waki Report states that Kalenjin argue that the colonial government alienated land and then unfairly parcelled it out to Kikuyu and other groups whom they viewed as outsiders (Waki Report (CIPEV) 2008:32). The same sentiments are shared in some areas of Naivasha which still hold colonial and post-colonial land legacies and continue to be transferred to migrant populations from different ethnic backgrounds. This may have been a prerequisite for Naivasha becoming a focal point for inter-ethnic violent conflicts following the so called 'stolen elections' of 2007.

5.2 How Kasarani Came into Being

Kasarani is a recent village, having begun 27 years ago[27]. It is located to the north of Lake Naivasha in Tarabete sub-location, Malewa location in Naivasha division. The village signifies the sub-location's administrative and commerce centre, despite absence of infrastructure typical of a modern economic and administrative center. Most residents refer to Kasarani as a village while to some it is a centre due to its economic infrastructure and a confluence for labour migrants typifying diversities in ethnic and socio-cultural backgrounds. However, to some, including the local authority and government representatives, Kasarani is not a town yet.

Kasarani was originally known as Tarabete (some still use this name), named after Tarabete sub-location. Its development also saw the change of its name to the currently used name. According to residents, the name 'Kasarani' means 'doing things without concealing' and is borrowed from that of Moi International Sports Centre (Nairobi). People

[27] The village is said to have began in 1983, but expeditious growth started in 1984 (Key informant interviews, 2010).

would drink locally brewed beer and say or do immoral acts openly in the sight of other residents and thus led to the coinage of the village's name.

Elders who form the early labour migrants to British farms and who lived in Tarabete sub-location before 1950 recalled that, prior to 1984, Kasarani was under bush and acacia trees with minimal settlement of the sparsely distributed population of Tarabete. Some large-scale farms (mostly owned by British settlers) already existed at this time; some grew french beans and strawberries, among other horticulture, while others specialized in commercial dairy and beef cattle. Some farms were not as big as they are today; expansion is a result of the purchase of land from residents of Tarabete whose lands are adjacent to the farms.

Key informants support earlier assertions that floriculture in Naivasha began in the 1980s and mushroomed throughout the 1990s and the last decade. At the north lake area, floriculture began and proliferated towards the mid 1980s. Although people who lived near the farms (labour migrants and Tarabete residents prior to 1984) still obtained jobs there, a sudden shift of employment-driven in-migration started after 1984. Landowners saw the economic potential of small one-room houses for rent following the influx of in-migrants attracted by the booming floriculture industry.

Workers in large-scale farms would walk long distances to the farms populated near the lake; some from as far as Eburru hills further north of Naivasha division. The establishment of Kasarani does not necessarily mean that everyone settled there, but most did due to accessibility to work. Bicycles are still as important today as they were in earlier days in facilitating transport to and from work and are, in most cases, used for business[28].

Farms that existed before 1984 at the north lake and which surround Kasarani village today are Loldia farm (British owned), Shalimar farm (currently Indian owned), Bilashaka farm (has changed ownership and name since its establishment; at one time its name was Edward´s farm then later Sodom then Bilashaka) and Groove farm (Fig. 2). Other farms are a few kilometers from Kasarani. In total, 11 large-scale farms, some involved in floriculture, other horticulture, others in beef and dairy cattle, sheep and goats as well as wildlife protection, are within the reach of Kasarani residents where a large percentage obtain employment.

Key informants reported that Charles Njonjo (the first Attorney General of independent Kenya) 'bought' the land where Kasarani stands today from a British settler and later gave it to some Kikuyu members (his ethnic group). They later subdivided it amongst themselves and left out a 15 ha piece of land (size not verified) for the local authority

[28] An example is given in chapter 6

(Naivasha town council). Subdivision of the shared land took place in 1978-1979 (field data, 2010). Whether Njonjo bought this land remains a puzzle since earlier discussions and reports suggest that he illegally acquired some land in Naivasha.

The 15 ha piece of land was the genesis of present Kasarani; the village has continued to expand, covering adjacent lands owned by beneficiaries of earlier subdivisions. Kenya Power and Lightening Company (KPLC) and HZ (a construction company) were the first to put up camp on this plot as they set up basic infrastructure for farms and for the geothermal power plant at Eburru (interview with key informants 2010).

Landowners adjacent to the plot put aside for the local authority began to construct kiosks to serve the company's and big farm's workers. Later, the council sold this plot to several people, amongst them a former manager of Bilashaka farm, who owns much of it today. New buyers also acquired small pieces of land from earlier buyers of the council´s plot and began to invest into small business premises and one-room rental houses to capture labour migrants.

The 1980s establishment of flower industry in the north lake area is thus influential in the growth of Kasarani. Today, Kasarani covers an estimated 120 ha of land; a few individuals and households own land, mostly acquired through purchase from earlier residents, but scores are landless and either find accommodation through renting, some share housing with friends or relatives, while others resort to marriage or cohabitation to find residence. As indicated in Table 3, survey results in Kasarani showed that residents without land or who live in rented units, with friends/cohabit, or relatives form 65% combined whereas 35% of residents claim of ownership of some pieces of land mostly through purchase.

Table 3: Ownership of Land in Kasarani (field data 2010)

Parameter	Frequency	Percent	Valid Percent	Cumulative Percent
Owner	11	35.5	35.5	35.5
Renting	16	51.6	51.6	87.1
other (friends/relative/cohabitation)	4	12.9	12.9	100.0
Total	31	100.0	100.0	

The local population has not settled in the riparian area of Lake Naivasha at Kasarani, although in 2009, they converted it for small-scale cultivation, partly assisted by the government under the Kenya Youth Empowerment Program (KYEP) or widely known in Swahili 'Kazi Kwa Vijana' (KKV) (more details in chapter six). Smallholder livestock owners use the riparian for pasture. As earlier stated, some big farms have taken advantage of receding lake waters to justify ownership of riparian land.

Extension of fences by large-scale farms to acquire riparian land and curtail access for intruders is no surprise for Kasarani residents and has occurred even before the establishment of the village, as reported by residents who lived there in the 1950s; they argue that Lake Naivasha receded during the droughts of 1953-1961, which aroused concern of a rapidly drying lake. Large-scale farms constructed stores and drying grounds for lucerne and maize, among other crops, in the riparian zone only to be astonished when one-week of heavy rains in 1961 swept away the stores and drying grounds, calling for the military to assist in rescue. Residents called the rains 'Mvua Ya Mafuriko' (rain of floods) which rejuvenated a then dying lake.

The donation of a 15 ha[29] plot for construction of a primary school by Loldia farm (on whose grounds the only primary school existed) boosted the growth of Kasarani. Donations from tourists (especially British nationals who visit Loldia House) have supported education of poor children from Kasarani and its surroundings since 1984 when the school began. During fieldwork, Kasarani had one public primary and nursery school (Loldia Primary School). However, private nursery schools have mushroomed in the last decade taking the increased population of children below six years of age as an investment. In 2008, the first public secondary school started a few kilometers from Kasarani through donations from Shalimar farm.
Large-scale farms have no doubt supported employment and development in Kasarani, especially in an area where the government development agenda is regarded as absent. Whereas I speak of some failures on the part of farms, I certainly do not ignore their exemplary role. The problems experienced by farm workers reported during interviews form part of chapter six.

Currently Kasarani consists of four informal subdivisions (Fig 2). Residents have free access to water from a borehole donated by Bilashaka farm and can purchase water from a government borehole in the village.

6. Social resilience in the context of livelihoods and environment: the case of Kasarani village

This chapter opens by addressing the interplay between employment-driven immigration into Kasarani, key resource dependence (Lake Naivasha as the main resource) and the direct or indirect activities supported by the lake. I then analyze the lake in a twofold approach: first, by looking at Lake Naivasha under high water levels. 'High water levels' is

[29] Just like the local council 15ha plot, the size of land donated by Loldia farm for a primary school is based on estimations made by residents. We did not attempt a size verification exercise.

in reference to abundance[30] of water capable of sustaining consumption by the various users (e.g., large-scale and smallholder irrigation etc.). The premise is that high water levels support most activities, translating to sustenance of livelihoods. The second analysis discusses Lake Naivasha under low water levels by giving the factors responsible for decreased levels. Here, I suppose that low water levels breed livelihood shocks and stress (vulnerability context). Social resilience building thus incorporates reliance on available livelihood assets, informal institutions and social organizations. However, social resilience (e.g., diversification, etc.) is not limited to situations of low water levels, but exists during high water levels owing to much-needed food security for the unforeseeable future and problems inherent in pursuit of different livelihood options (discussed in details in each activity).

6.1 In-Migration, Resources Dependence and Support of Livelihoods

Kasarani village, just like the other settlements around Lake Naivasha, is multi-ethnic following multidirectional in-migration covering most ethnic groups in Kenya. The Kikuyu remain dominant in Naivasha as well as the larger Rift Valley Province. More than 12 ethnic groups are represented in this area. Table 4 shows trends of migration into Kasarani; from the table, it is clear that the area continues to attract migrants almost every year.

Some migrants have social networks in Kasarani prior to moving (such as friends and family), but for others, migration is a more exploratory venture for economic gain or diversification, explaining the high anticipations for possible residence and jobs. Multi-ethnicity suggests an amalgamation of languages, thus the national language (Swahili) serves as the unifying factor, whereas some opt to learn the dominant language, Kikuyu. Figure 5 shows ethnicity and languages in Kasarani; Kiswahili is the dominant language (55%) with Kikuyu representing 32% of interviewed households. Intermarriage has led to a mixture of ethnicities; interviews were based on the main language spoken in the households.

[30] I take notice of the terms ‘abundance’ and ‘sustenance’ because of their relative nature, making it impossible to dictate what water levels are abundant excluding external factors such as atmospheric conditions versus rates of consumption etc, as well as time and conditions when speaking of `sustenance of livelihoods´.

Table 4: Migration History in Kasarani (field data 2010)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	more than 15 years	17	54.8	54.8	54.8
	more than 10 years	1	3.2	3.2	58.1
	more than 5 years	5	16.1	16.1	74.2
	more than 2 years	5	16.1	16.1	90.3
	more than 1 year	1	3.2	3.2	93.5
	less than half a year	2	6.5	6.5	100.0
	Total	31	100.0	100.0	

Most migrants continue to maintain relations with family and friends at their rural homes, sustaining networks for cash and/or commodities exchanges that represent an important social resilience strategy, especially in light of food insecurity and job uncertainties.

However, for a few people, such networks or sharing perpetuate failure to save money or produce. Although the idea instills independence, it could increase the possibility of vulnerability shifting to poverty during bad times (job loss or unemployment), and undermines social capital as a foundation of persistence in most rural and vulnerable communities. However, it exemplifies a break from the traditional extended family's joint consumption and dependence, which de Haan refers to as 'decomposed households' (de Haan 2006:10). Figure 6 indicates symbiotic relationships and networks between migrants and their rural homes necessary for exchanges (discussed later in this chapter).

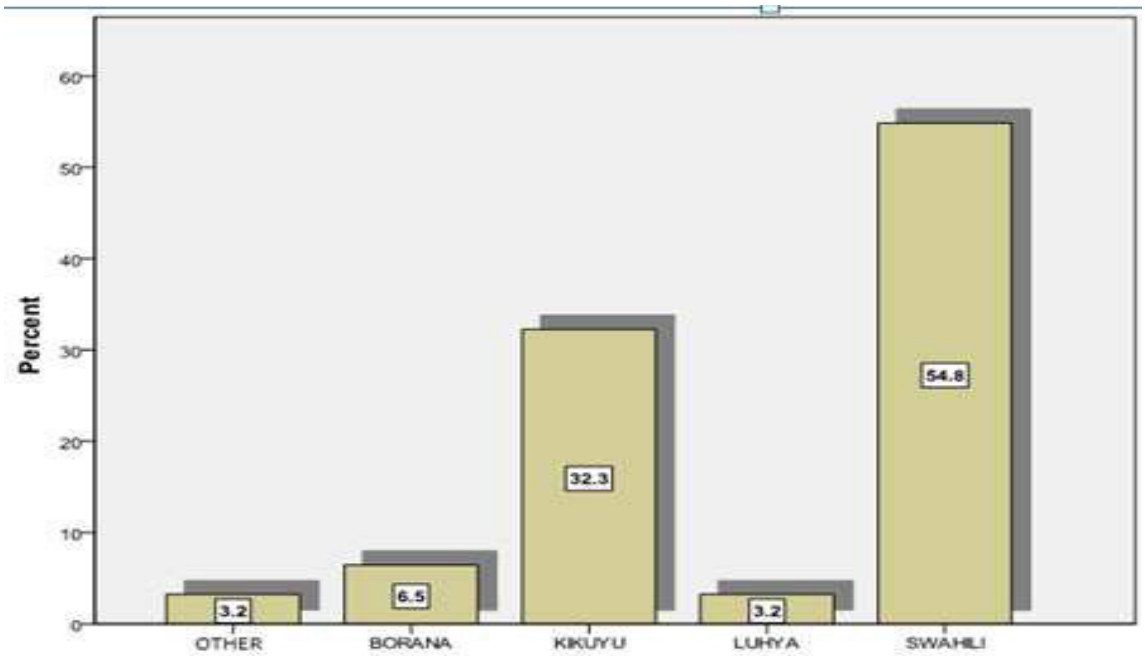


Figure 5: Ethnicity and Languages in Kasarani (field data 2010)

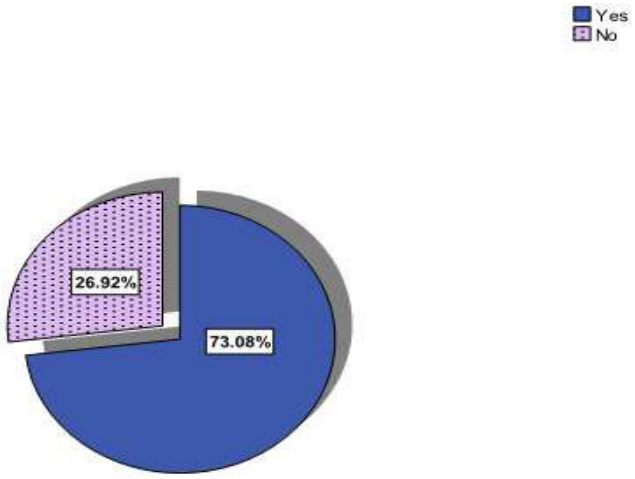


Figure 6: Reliable Social networks between migrants and their rural homes (field data 2010). Migrants who do not have reliable networks and are most vulnerable to food shortages constitute 26%, whereas their counterparts can benefit through support (e.g., food) from their rural homes.

Lake Naivasha is the main resource that supports life in this area upon which several activities and developments thrive. Main activities include large-scale floriculture, large-scale livestock production and tourism. Fishing, small-scale riparian cultivation, small-scale livestock keeping and small-to-medium size businesses represent diversifications in building social resilience. All mentioned activities depend directly or indirectly upon the lake, and mutual sustainability is hereby assumed if lake levels remain high by being backed by natural feedback (enough rainfall and limited evaporation) enabling prolonged consumption by the main activities and actors. Many people have minimal livelihood challenges in this situation.

However, livelihoods exhibit stress and shocks when lake levels fall (Fig. 8 and discussion thereafter). The analyses of Lake Naivasha under high and low water levels in the context of livelihoods in Kasarani form the preceding discussion.

6.2 Analysis of Lake Naivasha Under High Water Levels

Below is a simplified context of high water levels of Lake Naivasha, activities supported by the lake and the cycle of employment driven in migration and resulting livelihood problems in Kasarani.

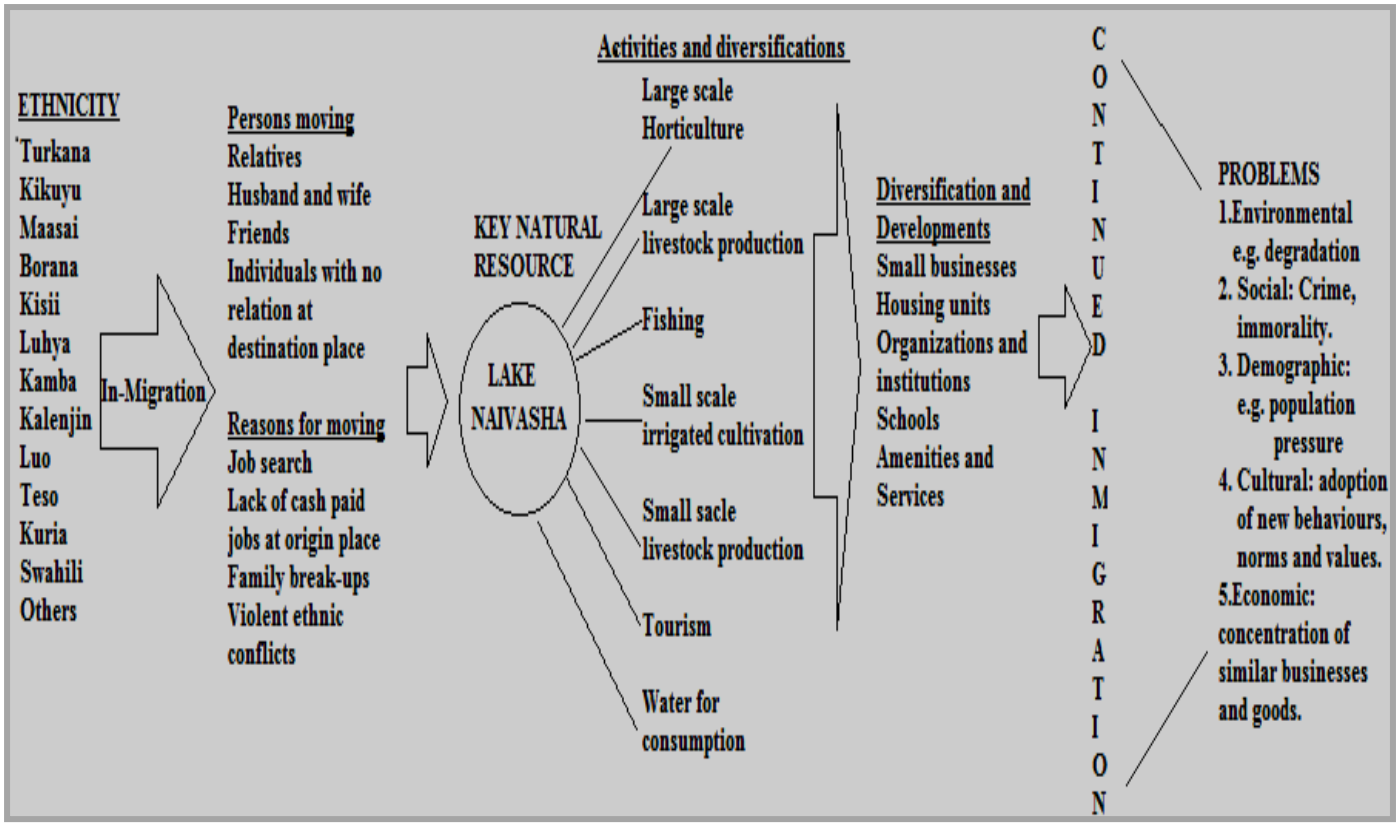


Figure 7: Context of high water levels of Lake Naivasha, activities supported by the lake, diversification and developments, and problems of continued immigration at Kasarani (field data 2010)

Earlier chapters have pointed out the multi-ethnic nature of the Kasarani community created by migrants coming from virtually all parts of Kenya. Different ethnic groups that I observed during the stay in Kasarani include Kikuyu, Turkana, Maasai, Borana, Kisii, Luhya, Kamba, Kalenjin, Luo, Teso, Kuria and Swahili, from the coast (*see* Fig. 7). Although this form of migration is primarily internal, one Borana household claimed to have migrated from southern Ethiopia into Kenya and to Kasarani.

The major reasons or push factors explaining out-migration include search for employment and lack of cash-paid jobs at places of origin. However, some migrants are forced to move due to violent ethnic conflicts, some resource related, as reported by a few Turkana households in Kasarani who lost stocks to the neighboring Pokot raids in

northern Kenya leading to loss of livelihood and life. While such people flee from conflict-stricken areas, yet another group flees from broken marriages (divorce or separations). These categories of migrants turn to Kasarani seeking the opportunity to begin a new life, meaning that diversities in origin, migrant characteristics and drivers of movements vanish under the spectrum of pursuing beneficial outcomes.

Lake Naivasha thus become a convergence zone for migrants, local population of Tarabete sub-location, floriculture and other horticulture investors, wildlife conservancies (Lake Naivasha and Hell's Gate National Parks) and government institutions (KWS and KARI etc), tourist investors and commercial large-scale livestock investors. Apart from the famous flower farm employment at Lake Naivasha, observations and interviews signal alternative livelihood strategies, which have become part of the Kasarani way of life.

These strategies are important coping and response mechanisms against insufficient wages and salaries as well as related problems within employment. Among these social resilience-building strategies aimed at preparing for livelihood challenges is livelihood diversification, which includes smallholder cultivation and livestock keeping as well as small-to-medium size businesses (all activities detailed henceforth).

6.2.1 Large-Scale Horticulture, Livestock Production and Tourism

Large-scale farms employ the highest number of Kasarani residents, and as earlier discussed, employment at these farms began before the establishment of the settlement. Due to the settlement´s strategic position between large-scale farms, the majority of residents are employed in Shalimar, Bilashaka, Groove or Loldia farms (Fig. 2). Those employed in these farms have the advantage of walking a short distances to work. Workers living further from Kasarani use bicycles for transport to work, especially for the majority of farms, which do not offer vehicle transport for workers. Farms, such as Color Crop, transport workers to and from their work areas.

Photograph 1: Groove Farm bordering Lake Naivasha and Kasarani (field data 2010)

Apart from the four mentioned farms, other farms further from Kasarani where residents mostly obtain employment include Indu, Aquila, Olsuswa, Korongo and Locco farms. Not all farms are engaged in cut-flower business; some like Korongo practice commercial sheep and goat rearing while Loldia has wildlife conservancy, practices tourism, keeps large numbers of cattle and sheep and is involved in horticulture (not flowers). Locco farm, which has donated the only public dispensary in Kasarani, is involved in wildlife and tourism.

Farms also vary in terms of pay for workers, working conditions and the general treatment of employees. Interviews with flower workers from different farms (taking the four main farms and four others) showed that most farms have continued to mistreat workers with poor working conditions, poor pay and offering casual jobs, which lack employment security. From the interviews, a clear differentiation typifies cases of Shalimar and Loldia farms as best and worse scenarios, respectively, for Kasarani. The south lake area was not part of this study and thus could reveal differing conclusions.

Shalimar (Indian owned) ranks best (following interviews across eight farms nearing Kasarani) in terms of pay, acceptance of workers to form a union charged with 'fighting' for worker´s rights and providing various services. Shalimar farm reportedly offers better salaries (at least 80€ (8000 kshs) per month to most workers), protective clothing and jobs are secure with most workers being permanently employed. The farm also provides staff with houses, has put up a clinic for staff and their families as well as bearing burial costs for deceases workers. Furthermore, it offers paid sick leave, paid maternity leave and assists farmers in learning various skills such as driving, among other benefits.

These benefits are only possible because the farm has recognized the existence of Kenya Plantation and Agricultural Workers Union (KPAWU)[31], which negotiates with employers on better services, facilities, pay, working conditions among others, an aspect not recognized in some farms. The case of Shalimar is different compared to Loldia farm and several other farms that have shown a lack of commitment to KPAWU, raising the question of enforcement of the workers' union requirements.

A manager at Loldia said that the farm has 789[32] workers, with women forming the largest number, 481. However only 250 workers of the total are permanently employed (including the management); the remaining 539 risk losing their jobs at any hour of whichever day,

[31] KPAWU is an organization for Agricultural workers in Kenya, under the Central Organization of Trade Union (COTU). Although the union has continued to advocate for workers' rights, there seems to be a disconnect within itself, workers, and big farms, which may explain manipulation of workers by some farms, while others commit to improving workers' conditions and pay. KPAWU is not limited to some farms but mandates to protect all workers. Interestingly, workers believe that farms dictate either to cooperate or not to cooperate with KPAWU. More discussion on KPAWU follows later in this chapter.

[32] The actual number of workers is not verifiable since claims by some key informants suggested that some farms have more workers than they would indicate; they want to evade taxes and paying health insurance among other requirements for employees.

should they be late to work, sick, require maternity leave or giving inadequate excuses (discussions with key informants and Loldia workers 2010).

Sampled workers argued that the farm may be the worst in terms of pay compared to other farms, yet most people take the jobs as the only available options. For example, workers who harvest french beans earn between 0.06 and 0.10€ (6-10 kshs) per Kilo of french beans picked. This translates to less than 1€ (100 kshs) for a whole day of work, especially when harvesting has been done repeatedly reducing the amount of french beans available in the farm. The conclusion thus follows that wages and salaries of workers are incomparable with the amount of work done and the profits reaped by the farm each day irrespective of transaction costs. Loldia prides itself in extensive wildlife conservation and draws what appears to be a huge return out of it.

As a farm that protects wildlife for tourism purposes, workers are constantly at risk from wild animal attacks. Interviewed workers complained of lack of compensation because of injury or deaths caused by wild animals and in most cases view the animals as being more valuable to the farm than human life.

Employment at Loldia was reported to be a big puzzle; job seekers are handpicked from the main gate in case of job openings and lucky ones proceed to work without disclosure of terms[33]. They do the work rather than choosing to stay idle and face poverty, as a woman working in Loldia farm said:

> *'…I go there just to earn some money however small the amount; otherwise, I cannot sit here and watch my children die, yet the same jobs are not easy to get. We work and work without questioning. Any one seen to incite others is fired…'*

Loldia farm, though having a low reputation from workers, has supported the oldest and only public primary school in the area, presumably to obscure the hidden realities. Other farms that are ranked low by workers due to poor conditions and pay include Malewa Bay, Olsuswa and Korongo. Shalimar remains a favorite for most workers followed by Bilashaka farm.

A major problem cutting across most farms is exposure of workers to poisonous crop/flower pesticides and insecticides, especially in green houses. Interviewed workers argued that management forces them back to work after one hour of the required three hours after spraying farms. Consequently, some workers, especially pregnant women faint during duty under contaminated air while scores suffer from skin infections and other unhealthy conditions.

[33] The workers in Loldia farm that I interviewed said that people are handpicked and posted to any areas that need staff within the farm. They do not question pay or workers' rights and whistleblowers are fired in no time.

Some residents of Kasarani consider sexual harassment in form of sex-for-work and bribery habitual on some farms. Unscrupulous farm managers solicit sex or bribery in exchange for jobs with common victims of sex-for-work being women while bribery (mostly 50€ /5000 kshs) affects men and some women too. Key informants and workers quoted Bilashaka farm as having a record of these immoral and corrupt acts, which go unreported to either local police, concerned civil society organizations or KPAWU and COTU. Sex-for-work blame could relate to ignorance of rights, poverty and probable consciousness of shame on the part of the victim, whose desire for an economic activity stretches beyond morality. However, opportunistic managers carry the greatest blame. Similar cases of sexual harassment at flower farms are reported in Opondo et al. (2002). An unemployed young woman working temporarily in a small hotel said:

'I cannot take a job and then be forced to follow a manager to his house or do it in the farm like I know of some women here…I´d rather work in this small hotel or go back home…'

Therefore, categorization of farms and the inhumane treatment of workers at some big farms question the requirements and whole idea of Fairtrade (discussed next) and the roles of KPAWU and COTU in protecting workers. Workers' rights to negotiate with employers, get decent wages and work in healthy conditions are either absent or ambiguous at best. COTU has been quite vocal over workers' rights but there seem to be a failure here, which needs to be addressed. KPAWU and COTU also need to revise tactics of dealing with employers, from the traditional issuance of worker strike notices and organizing such strikes to achieve a more proactive dialogue and sanction-based approaches to intimidations on the side of workers. The challenges faced in flower farm employment are responsible for the motivation of most people to diversify livelihoods and avoid over-reliance on this single activity.

The concept of Fairtrade[34], which is widely known within European horticulture markets, faces questioning here. Interviews revealed that most flower workers in Naivasha have not felt its importance and know either little or nothing about it. The continued mistreatment of flower workers, poor payment and improper work conditions even within

[34] According to the Fairtrade Foundation (2008), Fairtrade certification provides an independent verification that workers on large-scale flower farms have decent wages and working conditions in line with the core International Labour Organization (ILO) Conventions. This includes the right to join a trade union, the right to negotiate collectively with the employer on terms and conditions of employment, freedom from discrimination, no child labour, and a safe and healthy working environment.

the so called 'Fairtrade Certified' farms questions this concept's importance, especially for 'voiceless' workers. Endless street demonstrations by flower workers (especially on Valentine's Days) in demand for better pay and other rights top their options of airing concerns while roses and other horticulture fetch high returns in Europe and other markets and contribute millions of foreign exchange to the local economy, which does not necessarily trickle down to the poor workers.
Studies on how Fairtrade certification affects labour standards and human rights are few (Rieper 2010:3). However, Fairtrade certification should not be seen only as a marketing promotion of Fairtrade labels and products internationally; the concept should contribute significantly to the economic and social welfare of cut flower workers.

I argue that for Fairtrade to be respected and recognized, concerned parties should ensure that flower workers benefit socially and economically and that flowers of Naivasha not only benefit global markets and a national economy. Fairtrade receives less reputation from the side of workers and complaints of mistreatment even within farms that are certified continue. February 2011 marked the most recent street demonstrations by flower workers demanding better working conditions and pay. Naivasha has become a commonplace for such scenarios, which may persist in the future.

Tourist facilities are important employment areas for Kasarani residents as well. As earlier mentioned some large-scale farms have frequent visits by tourists and therefore protect wildlife within their land. On the other hand, various private investors have moved into tourism to offer facilities and services. Fewer people are employed at tourist facilities than other areas because these facilities require fewer workers compared to large-scale horticulture farms.

6.2.2 Small-Scale Riparian Cultivation

Riparian cultivation by smallholders at Kasarani represents a risky form of diversification, though aimed at building social resilience. Riparian land use is widespread in most of Kenya's wetlands, with cultivation reported as a main land use activity. This applies to the Nairobi River sub-basins (Kithiia & Ongwenyi 1997:121-27), riparian farming at Lake Victoria (Kipkemboi et al. 2007:257–72) and riparian cultivation at Kihoto, Naivasha (Johnstone, no date), among other wetlands.
Interviews in Kasarani indicated that small-scale riparian cultivation began following a forestry project in Naivasha division under 'Kazi Kwa Vijana' (KKV) program of the government of Kenya. The coalition government launched KKV in March 2009; a program aimed at employing youth in rural and urban areas in labour-intensive public works

projects implemented by different line ministries (Youth Empowerment Project ESMF 2010).

KKV's objective was to employ between 200,000 - 300,000 young people, male and female, in selected projects such as conservation and management of the environment, providing irrigation and water supply, improving road transportation in rural and urban areas and waste collection and other cleaning activities in urban areas (KKV Manual, 2010).

The Government Land's Act Cap 280 bestows presidential powers of allocation or grants of any estates, interests, or rights in or over unalienated government land, normally through the commissioner of lands. Such categories of government land, in this case, include open water bodies (Waiganjo & Ngugi 2001; Government Lands Act Cap 280 2010). Phase one of the KKV projects involved water, irrigation and forestry and was executed by the Ministries of water and irrigation and forestry (KKV Manual 2010).

The riparian land at Kasarani arises from receding waters of Lake Naivasha. When water receded in 2009, the riparian zone became a target of the forestry projects executed by the Forestry Ministry under KKV. Youth, mostly drawn from Naivasha and its surroundings, were involved in planting trees and later the local government, with assistance from the Chief of Kasarani, permitted riparian access through allocation of cultivation gardens to some residents with an aim of establishing agro-forestry (field data, 2010).

Photograph 2: Agro forestry at Lake Naivasha's riparian in Kasarani (field data 2010)

Although the youth were the target group for allocation of riparian land, interviews revealed that allocations were marred with bribery and tribalism and as a result, only a handful of the intended youth have gardens in the riparian, as a key informant who owns land at the riparian explains:

'when youth planted government trees at the riparian, they were required to take care of

them and so with the help of the chief it was agreed that youth should be given some gardens within the riparian where they could grow crops as well as protect the trees. However, much of these gardens were given to other people through bribes; few youth have gardens now though most of them have given theirs to other people or have rented them out…'

(interview with key informant 2010).

The practice of agro-forestry in the area has accelerated destruction of Papyrus due to slash and burn or uprooting to open up crop gardens. Farmers in Kasarani are conscious of lack of ownership rights to the land and although various gardens may change ownerships through certain agreements (including cash, gifts etc.), it is usually temporary. This consciousness arises from the fact that the government may claim the riparian land once the trees are grown and do not require any constant care or, most annoying to them, if the lake reclaims its land through advancing of earlier receded water as witnessed in October 2010. Advancing of water that takes up riparian land occurs when heavy rainfall feeds the lake through the main rivers.

Smallholder cultivation is challenging as farmers grapple with many problems including conflicts with hippos and buffalos. The riparian land is a feeding ground for these animals so its conversion to cultivation means that the animals lose feeding grounds. Farmers in Kasarani complained of crop destruction by hippos and buffalos at night and, sometimes, buffalos and farmers engage in running battles during the day (own observation). Theft of vegetables and other produce from riparian gardens is rampant, resulting to abandonment of gardens by some farmers. All interviewed farmers cited the problem of theft of their produce from the gardens as among their biggest challenges.

Advancing lake waters present a threat to crops by submerging both them and the trees planted under KKV. In October 2010 when lake levels increased, cultivators at the riparian were scavenging for vegetable and other crops to avoid a total loss as advancing waters covered open riparian grounds. When waters recede like in 2009, most gardens dry out after difficulties in accessing irrigation water. Small-scale farmers lack pumps for irrigation; only a few can either rent or borrow from friends. Therefore, the receding and advancing of lake waters create both advantageous opportunities and hardship.

All of the interviewed farmers have no formal training in agriculture-related studies and therefore depend on their life experiences to cultivate. Conflicts over riparian between cultivators and pastoralists is also rampant given the shared resources and the need to protect one's own livelihoods. Other problems include crop pests and diseases, as well as the limitations caused by lack of ownership rights concerning land as well as the blame of degradation.

New plans to conserve and restore the lake with assistance from Britain's Prince Charles through the International Sustainability Unit, Cambridge University Program for

Sustainability and the World Bank among other international organizations[35], are expected to eliminate most activities of smallholders. Against these problems, smallholders find the riparian to be quite productive and in most cases are able to reap many benefits, especially by growing vegetable such as potatoes.

6.2.3 Small-Scale Livestock Keeping

Small-scale livestock keeping, just like riparian cultivation, is a risky investment. Only two of the interviewed farmers consider this as their main source of livelihood, while the rest rely upon livestock for additional food while engaging in other activities. Pastoralists with large numbers of stock (mostly Maasai) come to Kasarani to water their stock or graze in the riparian, especially when livestock feed is scarce outside Kasarani due to drought. Domesticated livestock in Kasarani include cows (mostly for milk), sheep, goats, donkeys and chicken. Most farmers have small numbers of stock, but one Turkana household has 50 small stocks: 37 goats, 13 sheep and had just lost three cows to disease at the time of research. For this Turkana household, retaining their traditional pastoral culture and social value attached to livestock, by fostering pastoral practice in Kasarani is satisfying irrespective of the challenges faced in an area void of space and pasture.

Livestock pens in Kasarani is equally challenging considering limited space, so most people construct small sheds within their small compounds. Veterinary services in the area are absent, inaccessible or expensive so most stocks succumb to diseases, especially those who cannot afford treatment or drugs. The riparian is the main pasture for all small-scale livestock owners, but comes within existing contestations. Farmers do not own the pastures and therefore planned evictions of smallholders from the riparian would render their livestock untenable. Educating Kasarani residents on taking up less risky ventures such as commercial poultry farming, which takes less space and has less feeding problems, will limit losses and transaction costs resulting from unrealistic investments. Most livestock owners in Kasarani employ one man for herding; he collects stocks from the owners and takes them to the fields as the owners embark on other activities.

6.2.4 Small-to-Medium Size Businesses

Diversification into small and medium-sized businesses is widely practiced and is a main coping strategy for both employed and unemployed people in Kasarani. The activity, though still confronted by hardships, has been a key pillar for the settlement´s development involving a large percentage of the residents. Kasarani is close-packed with

[35] Internet source: http://www.capitalfm.co.ke/news/Kenyanews/Lake-Naivasha-ruin-worries-PM

small businesses, available but unreliable transport, increasing electricity connection and communication services, among other factors. This may challenge the perception of the area as still being a village (as relates to deficiency in infrastructure).

Business opportunities continue to rise as more immigrants arrive in the area, forming a ready market for goods and services. Workers on large-scale farms are the main customers for goods and services. All sorts of businesses are run in the area: sale of foods, clothes, household equipments, charcoal, small hotels, locally-brewed beer, bicycles, motorbikes and vehicle transport, rental houses, small bars, electronic equipments and Khat (*miraa*), to mention a few.

Some businesses are run indoors (in small shops or within living units) while some people opt to distribute their goods on bicycles, motorbikes or on their backs to willing buyers. The most rewarding business observed in Kasarani is rental of small one-room dwelling units because owners have a guarantee of income given the high demand for houses.

Small-to-medium size businesses persist under poor infrastructure, heightening problems of supply of goods and restocking. The Naivasha Municipal Council is charged with issuing trading licenses for business owners. However, 'small' business owners claimed that they could not afford the Council´s license fee and often run businesses illegally (without registration). This situation creates uncertainties for them since they are forced to remain vigilant lest Council inspectors discover their activities. Ordinarily, they close shop when word goes around that the inspectors might be showing up.

Photograph 3: Bicycle transport of goods and people in Kasarani. Some men use bicycles to supply water for pay (field data 2010)

6.2.5 Fishing

Lake Naivasha is divided into three beaches: Tarabete (Kasarani), Kamere and the main beach (near Naivasha town). Fishermen argued that despite the divisions, freedom to fish

around the lake is possible because no maritime boundaries exist. Interviewed fishermen and boat owners reported that fishing is probably the best paying job in Kasarani compared to working in flower farms or engaging in agriculture, despite huge challenges. At times when the water level is high, some fishermen can earn over 20€ (2000 kshs) in a day, but may get nothing on other days. As of October 2010, Kasarani beach had 12 boats: four owned by Luo, three by Kikuyu, three by Turkana, one by Luhya and one by Meru ethnicities. Each boat operates on a maximum of 10 fishing nets and is run by two or three men (crew).

Not all boat owners engage in actual fishing; most prefer to employ other people and the money from sale of fish for each day is divided amongst the boat owner and the fishermen. Fishermen usually start their work at 5am and end at 3pm each day as stipulated by the Beach Management Unit (BMU) and the Ministry of Fisheries Development (under Kenya Marine and Fisheries Research Institute, KEMFRI). Fish is sold to dealers who form a ready market and transactions occur at the beach limiting transport or storage costs; trading in fish is done by both men and women who mostly sell their supply to the nearby towns of Naivasha, Nakuru and Gilgil. The introduced Common Carp species dominates Lake Naivasha, having colonized Tilapia.

Fishermen complained of water poisoning by flower farm discharge leading to death of fish or, sometimes, imposition of fish bans. The self-proclaimed ownership and fencing of riparian complicates 'landing' at the beach for fishermen, especially when strong winds push their wooden boats in other directions. This forces them to struggle to return to their 'landing' area, otherwise they risk arrests if seen trespassing on large-scale farm's land in the riparian. At times, their catch is bountiful but the lack of stable markets and competition from other beaches leads to losses, which are increased by lack of proper storage facilities. Fishermen also have to grapple with water weeds (water hyacinth), as well as poachers, boat maintenance costs and receding lake waters, among other problems.

Fishing is a main activity for boat owners and a few traders. Given the various challenges within fishing, most people have other income generating activities. A case of livelihood diversification within fishing activities is provided later in this chapter.

Photograph 4: Fishing boats at Tarabete landing beach (Kasarani). Fishermen cut through water hyacinth to fishing areas in the lake (field data 2010)

When Lake Naivasha's water level is high, as indicated in Figure 7, all discussed activities take place without many problems. Large-scale farms employ more people as they expand their farm operations, businesses obtain customers and the market for goods and services leads to creation of more businesses. The government does not impose fishing bans and riparian cultivators have access to irrigation water. This ideal atmosphere fuels immigration into Kasarani, which leads to environmental, cultural, social, demographic and economic problems (*see* examples in Fig. 7).

The situation changes when lake waters reduce to low levels. This scenario generates shocks and stress to livelihoods, forcing people to seek for survival mechanisms to reduce vulnerability. Many residents of Kasarani have historically witnessed the situation of shifting lake levels and have devised ways of preparing for bad times that come with the situation (some examples discussed earlier in this chapter). Analysis of Lake Naivasha under low water levels is shown in Figure 8 and a discussion of building social resilience using coping and response mechanisms follows.

6.3 Lake Naivasha Under Low Water Levels: Vulnerability Context, Coping and Responses To Livelihood Stress and Shocks

In the simplified situation of Lake Naivasha under low water levels (Fig. 8), various causes explain fluctuating water levels of the lake. Low water levels of the lake translate to livelihood shocks and stress (vulnerability context). To reduce risks of poverty and ensure survival in such cases, most people rely upon mechanisms that build social resilience,

specifically by utilising livelihood assets, informal institutions and social organizations to better their situation.

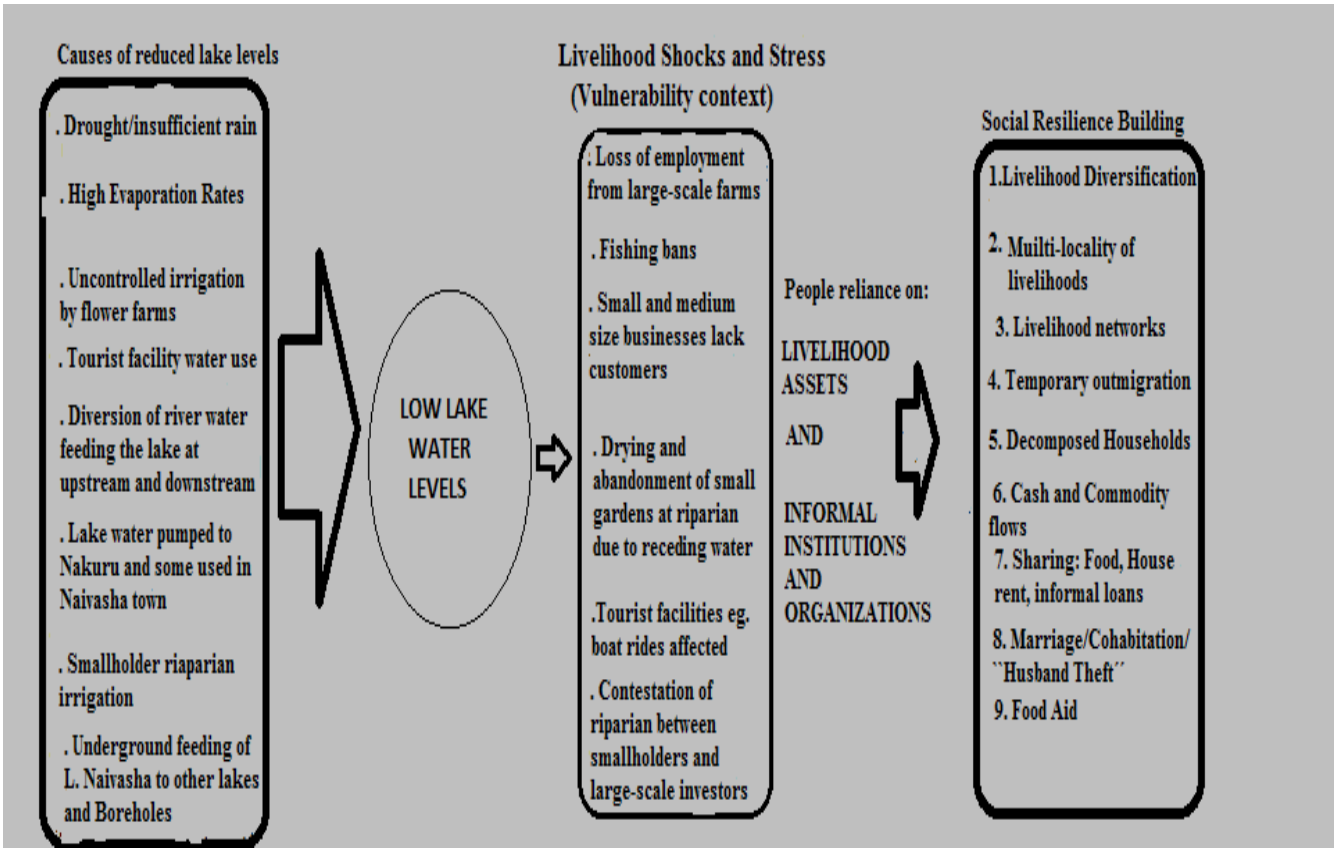


Figure 8: A simplified context of low water levels of Lake Naivasha: causes of reduced lake levels, livelihood shocks and stress, and combination of livelihood assets, institutions and organizations to build social resilience in Kasarani (field data 2010).

6.3.1 Vulnerability Context (Livelihood Shocks and Stress)

Drought, insufficient rainfall and high evaporation rates at Lake Naivasha are amongst the leading factors accounting for decreased lake levels[36]. The vast majority of natural water loss comes from evaporation, considering that the lake is shallow with a large surface area (WWF 2011:16).

Other factors (shown in Fig. 8) include the competitive and uncontrolled intake of irrigation water by large-scale farms, tourism use (swimming pools, irrigation of flowers and compounds), diversion of water from rivers feeding the lake for irrigation and consumption, pumping of water from the lake to nearby town of Nakuru as well as consumption in Naivasha. The lake has no surface outflow but some water is lost through its underground seepage to other lakes (*see* Becht et al. 2006). This water loss accounts for 12% of the total natural water loss per annum (between 18-50 mm cubed) with the

[36] For more information on causes of decreased water levels of Lake Naivasha *see* Harper & Betch, 2002, Harper et al., 2004, Betch & Nyaoro, 2006, and WWF, 2011.

shallow aquifer draining into a deeper aquifer system which, over thousands of years, takes the water towards Lake Magadi, Lake Elementeita and Lake Baringo (WWF 2011:16). There are three geothermal projects located in the southern area of the lake shore, which obtain their water supply of about 1 million mm cubed per year from the lake (ibid.:12).

Reduced lake levels results in a cycle of livelihood shocks and stress in Kasarani. A summary of these and some earlier discussed livelihood problems follows here: large-scale farms normally reduce their activities (like in 2009) such as cutting down on the amount of horticulture and expansion fields and thus laying off both permanent and temporary employees.

Laying off workers translates to poor performance of small businesses due to the reduced purchasing power of customers (normally the farm workers). Most victims resort to informal credits and arrangements such as purchasing food and household items on credit and postponing payment of house rent. Business owners in Kasarani complained of bad debts, especially when farms lay workers off. Some workers vacate their rented houses because of insufficient funds to cover monthly housing rents.

Reduced lake levels also results to a ban on fishing for a specific period (mostly two months). Tourist activities, such as boat rides are minimized or sometimes stopped. As water continues to recede, small-scale cultivators face difficulties in irrigating their riparian gardens due to the lack of mechanisms to draw water; most gardens dry out and are abandoned. As waters recede, large-scale farms begin to extend fences to claim riparian area limiting access to local population. The riparian area becomes a contested zone between large-scale farms, Maasai pastoralists who bring their stocks from outside Kasarani, small-scale livestock owners and cultivators. Whereas the resources become scarce and contested, the vulnerability of most residents increases.

Most poor people notice that working on big farms alone is not sustainable and as a result engage in multiple income generating activities. Building social resilience by preparing for livelihood distress involves a blend of available livelihood assets and reliance on informal institutions and social organizations to facilitate diversification as well as mutually supportive activities within and outside Kasarani (referred to as multi-locality of livelihoods and livelihood networks in de Haan 2006). In times of livelihood shocks, some response mechanisms include reliance on food aid, cash and commodity flows, while informal credits (food, house rent and small loans from friends) form the livelihood of majority.

6.4 Coping Mechanisms: Preparing for Livelihood Stress and Shocks

The combination of livelihood assets (capitals) and institutions are central within poverty alleviation and sustainable livelihood studies (*see*, for example Ellis 1998; and Chamber 1995:193). Available livelihood resources/capitals as well as institutions and organizations influence adoption of diverse livelihood strategies aimed at creating resilience within poor communities. Livelihood assets in Kasarani are quite limited, but asset deficiency does not impede residents from utilizing the available options. Considering the availability or access to the five livelihood assets prominent in sustainable livelihood discourses (see Ashley & Carney 1999; and DFID 1999), i.e., social capital, natural capital, financial capital, physical capital and human capital; social capital represents the most important asset for most people of Kasarani. This is shown in Figure 9 (and the preceding discussion on each asset). Figure 9 summarizes livelihood assets in Kasarani, with respect to availability or lack of the mentioned assets and their implication in the pursuit of better or sustainable livelihoods.

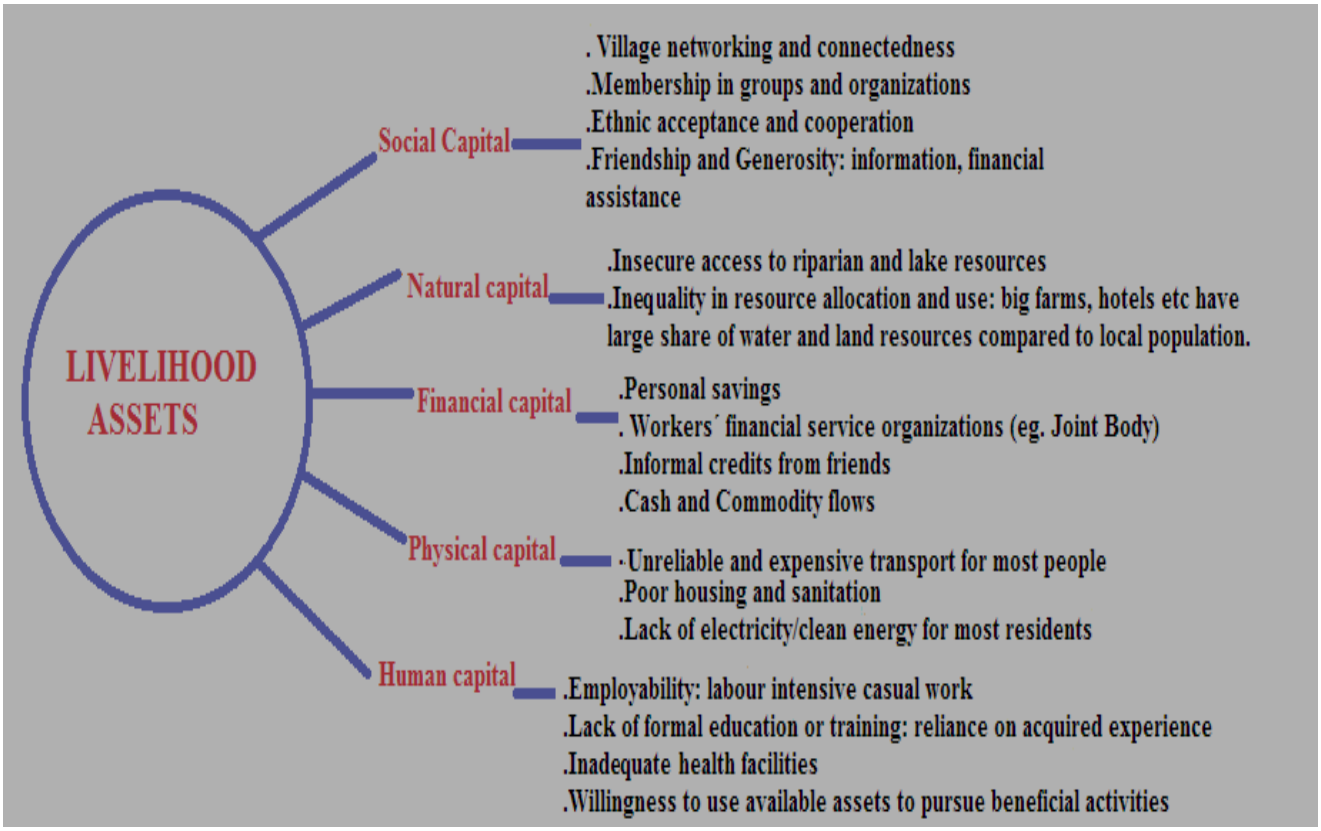


Figure 9: Summary of livelihood assets' accessibility in Kasarani (field data 2010)

6.4.1 Natural Capital

According to the DFID (1999), natural capital (land, forests, water bodies, etc.) is very important to those who derive all or part of their livelihoods from resource-based activities (farming, fishing, gathering in forests, mineral extraction, etc.). Land and water represent the main resources deprived of most immigrants and residents of Kasarani, whereas the

opposite is true for flower farms and other investments as well as a few individuals who control the 'lion's share' in and around Kasarani[37]. Although Lake Naivasha and surrounding land support the mentioned livelihood activities, the question of property rights heightened by asymmetries of power regulating access and utilisation of such resources bedevils the ecosystem. As earlier discussed, very few people in Kasarani own land, while most landowners have small pieces to enable a combination of livelihood activities. It is also evident to the government, conservation institutions and organizations at Naivasha that priority for irrigation water and land is granted to flower farms and other powerful investors.

6.4.2 Social Capital and Financial Capital

Social capital represents a community's connectedness and networking (social networks). These networks have been responsible for, among other things, information sharing on employment opportunities and various forms of assistance amongst and between people. As witnessed during fieldwork, most people in Kasarani know each other and are interdependent of one another in most of their life ways. Ethnic acceptance and cooperation in this multi-ethnic village accounts for a large part of interdependence, including participation in inter-ethnic activities (jobs, organizations, such as workers´ unions, religious groups etc.).

However, instances of ethnic suspicion cannot be underestimated, irrespective of the community's willingness to work together and cooperate in most spheres of life. The 2007/2008 post election violence was a litmus test for Kasarani. Although no inter-ethnic fighting was witnessed in the area, members of some ethnic groups (mostly those who did not support the Kibaki/Kikuyu faction, mostly Luo)[38] fled due to heightened tension and possibility of inter-ethnic conflicts.

Social capital is responsible for creation of various informal institutions and social organizations. Most workers in similar working environments are bound by the challenges they face and are willing to assist each other should anyone get into financial, social or health- related problems. Assistance ranges from small informal loans to start businesses or other livelihood activities, food sharing and bearing the costs of burials jointly with

[37] WRMA measures water consumption by flower farms, limiting usage seems beyond their capacity especially with accrued borehole digging which could disguise overuse of lake water, while the same could be fed through underground connectivity to the lake. Whereas attention is now directed to farmers in the upstream and downstream to combat what is commonly said to be 'poor' agricultural methods, through enthusiastic projects (e.g. Payment for environmental Services, by WWF), the pumping of water from Lake Naivasha to Nakuru, boreholes and use by flower farms seems to be neglected.

[38] Kikuyu, whose support for presidential candidate mostly followed ethnicity, dominate Naivasha.

others. However, this takes trust and deep knowledge of parties involved and does not extend to strangers.

An important aspect of social capital observed in Kasarani involves willingness of those workers experienced in various manual activities to teach new workers the skills required in these activities. These include skills in fishing, repairing fishing boats and nets, harvesting flowers and other horticulture.

Financial capital is one of the most inaccessible assets, formal credits from financial institutions, for many residents of Kasarani. Workers in large-scale farms have salaries or wages accounts with financial institutions but are not able to get loans that can assist in diversifying livelihoods. The system of unsecured bank loans in Kenya, based on pay slips as security for loans, blocks most flower workers from accessing formal credit. Interviewed business owners reported that their starting capital was mostly through personal savings. Some people depend on family members or loans from friends to build boats for fishing or to enter into other livelihood activities.

6.4.3 Human Capital and Physical Capital

Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives (DFID 1999). Most workers in Kasarani lack technical skills required for better jobs in most investments at Lake Naivasha, but largely depend on acquired experience and skills. Therefore, they do manual activities such as extending green houses, guarding farm resources, herding and harvesting horticulture. These activities do not require formal training but some farms have retained workers with acquired experience. Lack of public health facilities is blamed on the government and flower farms, as earlier mentioned. Only one public dispensary is operational through donations and the only government dispensary was non-operational as of October 2010. I discuss education facilities later in this chapter.

Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods (DFID 1999). Basic infrastructure required for sustainable livelihoods is absent, inaccessible or expensive for many residents of Kasarani. These include health facilities, secure and good living conditions, available and reliable transport and affordable energy. Small business owners face the problem of transport for supplies and lack of proper health care makes most people to turn to unauthorised personnel for treatment, while poor sanitation (water and living areas) breeds endless ailments and diseases especially among children.

For example, a journey taking 30 to 40 minutes from Kasarani to Naivasha town may require up to 3 hours waiting for other passengers to fill a vehicle. Livelihood activities

based on frequent travel are thus curtailed as transport becomes a major factor to consider when deciding on activities and diversification.

6.5 Informal Institutions and Social Organizations

Institutions and organizations are central in influencing the pursuit of livelihood options, as earlier mentioned. Informal institutions and social organizations in Kasarani and the larger Naivasha receive less or no attention, especially within academic, lake management and conservation discourses. North explains how agents shape institutions; he argues that human mental models invoke choices based on perceptions of costs and benefits and thus institutions are created to reduce uncertainty in human exchanges and limit transaction costs (*see* North 1990). Informal institutions in Kasarani represent rules, norms, or self-enforced codes of conduct developed or adopted by small or large groups of people united by similarity in work environments, resource sharing or in other ways of life to bring social order in day-to-day livelihoods. Individuals with diversities of thought, religion, ethnicity, employment, among others differences are united by the pursuit of beneficial outcomes and resource sharing, appealing for beneficial institutions and organizations in socio-economic interactions.

The most elaborate informal institutions in Kasarani that I discuss include the Beach Management Unit (BMU)[39] and Naivasha Community Project (NCP). Social organizations include Kenya Plantation and Agricultural Workers´ Union (KPAWU), Joint Body (JB), religious bodies and schools. These institutions and organizations have been important in the pursuit of better livelihoods that build social resilience. Whereas focus in this study was on informal institutions and social organizations, their analysis indicate interaction and instances of cooperation with formal institutions and organizations in the area, although the higher bargaining power bestowed upon the latter has a great impact on how informal institutions and social organizations are shaped (especially for BMU).

6.5.1 Beach Management Unit (BMU)

BMU represent rules, norms and regulations that govern fishermen, boat owners and fish traders in Kasarani. Membership is mandatory for the mentioned parties as it reduces poaching or uncoordinated fishing activities. Assisted by KEMFRI, fishermen informally learn the tenets of sustainable fishing. They learn about importance of controlling the number and required sizes of fishing nets to ensure the fish population's survival and both fishermen and traders are issued with licenses as a way of controlling unplanned fishing

[39] BMU´s formation borrows much from the Kenya Marine and Fisheries Research Institute (KEMFRI)

and limiting the involvement of many people in the activity, thus ensuring sustainability within the industry.

KEMFRI weighs fish, does monitoring, issues licenses and records number, sizes and profits earned from daily fish sales. BMU oversee membership adherence on regulations. An important rule observed by fishermen within BMU is protection of fish breeding areas. This is a self-enforced rule, which stipulates reservation of fishing within 200-300m around the lake, an area referred to as the breeding zone. Fishermen enforce rules by monitoring each other and report on misconduct or breach of rules by members.

Breach of rules includes fishing in the breeding zone, possessing more than the maximum allowance of fishing nets (10 is the maximum) and if the net sizes are less than the required minimum of 4 inches, as well as poaching. Use of nets above four inches enables harvesting of mature fish, which promotes sustainability of fishing. Consequences for violators of rules include ban from fishing for a period agreed upon by members of the BMU and their chair. However, monitoring within fishing is difficult especially given the fact that nets are set overnight and retrieved as early as 5 am while poaching is usually conducted at night when no one is watching. Additionally, the seeming positive cooperation between BMU, KEMFRI, and fish traders is only based on mutual trust and rationality owing to sustainable fishing. Therefore, it is practically impossible to measure compliance, especially on the part of fishermen, since some could still have more than the maximum number of nets and some smaller than the minimum 4 inches. This could be possible because immature fish forms a small fraction of daily catch by fishermen (personal observation).

6.5.2 Naivasha Community Project (NCP)

The Naivasha Community Project (NCP)[40] is a community initiative aimed at improving security, crisis response services and reducing crime within the Naivasha community. The project was launched in June 2005 under the Crisis Response Development Foundation (CRDF) and is sponsored on a voluntary basis by the community of Naivasha district and partners between the police, business community and local residents. This diverse nature of the actors shows cooperation between formal institutions (Kenya police) and organizations (CRDF) with the community, thus termed 'Community-Based Policing' (CBP)[41].

[40] http://www.crdfafrica.org/Projects/Naivasha-Community-Project

[41] CBP is both a *philosophy* (a way of thinking) and an *organisational strategy* (a way of carrying out the philosophy), that allows the police and the community to work together in new ways to solve problems of crime, disorder and safety issues to improve the quality of life for everyone in that community (Saferworld, 2008: 4)

According to key informants and personal observations, large-scale farms, tourism sector and other big investors at Lake Naivasha are the main sponsors of this project, thereby guaranteeing them more security surveillance from police. This situation may cripple the intended participation of community members in promoting their own security through cooperation with the police, like in reporting criminals. Having been recently launched in Kenya (since 2003[42]) and Naivasha (since 2005), CBP suffers many challenges despite the well-intended goals of reducing crime and fostering security. Saferworld (2008:23-27) detail the main challenges affecting the growth of CBP in Kenya, top most being low public trust and confidence in the police service and the sustained high rank of corruption in police institutions (ibid.:23).

Although cases of theft and insecurity still exist, Kasarani residents feel that the frequency of occurrence is minimal compared to the time before launch of the NCP. Most medium-size businesses in Kasarani are party to the project, meaning that regular police patrols are observable in the area, but free riding is usually a common practice especially for small business owners. Participation of the NCP in Kasarani is essential for 'small' and 'big' investors and the public since it bestows conscious assurance of a quick response by the police in cases of security matters; however, the NCP requires much public awareness and police reforms (as relates to corruption) to raise public confidence of the institutions and foster mutual cooperation.

6.6 Social Organizations Supporting Livelihood

Various organizations are involved in supporting livelihoods in Kasarani, though some, like KPAWU, are faced with problems such as lack of capacity. Other organizations include JB, the church/religious bodies, and schools.

6.6.1 Kenya Plantation and Agricultural Workers Union (KPAWU) and Joint Body (JB)

KPAWU fosters protection for agricultural workers through Collective Bargaining Agreements (CBA) between KPAWU and employers and is involved in negotiating better pay and working conditions, among other workers' rights43. Wangui (2004) cites continued deterioration of workers´ terms and their employment conditions owing to reduced capacity of the union to effectively bargain in light of the negative effects of globalisation, ineffective participation of the workers in CBA negotiations and the ever-increasing resistance and cost cutting measures by employers. This shows a clear disjuncture between employers, workers and KPAWU; a problem that employers seem to

[42] Saferworld 2008.

[43] The information is based on interviews with workers, and is supported by Wangui 2004 (although the author has written this on a workshop proposal).

take pride in as they persist in laying workers off to either reduce transaction costs or maximise profits (example discussed in 6.1.2).

Although KPAWU may lack capacity, it would be inappropriate to assume failure because the organization is praised in some cases (as discussed for Shalimar farm, *see* 6.1.2) and the media attraction that it receives in the quest for workers' rights at times is successful in 'forcing' employers to reinstate workers through court injunctions[44].

JB, in the context of Shalimar farm, is an organization that manages what workers call 'appreciation money' (Fairtrade premium). According to the Fairtrade Foundation[45], Fairtrade premium is an additional 10% payment from the negotiated price between farms and their exporters who buy flowers for the Fairtrade market. This money is intended for specific investment in projects that benefit workers and their wider communities. Workers at Shalimar reported that for every flower exported, they earn 2kshs, which goes into the Joint Body account and is therefore utilized to benefit workers and the community.

Amongst the major achievements from this money is the construction of the only secondary school in Kasarani which began operating in 2008; workers were also assisted by the farm to purchase a lorry from which they and other community members take driving lessons. Workers also borrow money from JB to purchase necessary items such as bicycles, cooking stoves and televisions to make their lives better and easier.

During fieldwork period, workers were proposing what they called 'rotating money'. This involves getting 100€-200€ (10,000-20,000 kshs) from the JB in form of loans to assist them establish various livelihood activities as well as covering other financial needs. This case of Fairtrade premium exemplifies important steps taken under Fairtrade but much needs to be done, especially to enforce the compliance of all farms. JB operates without much chaos or conflicts of interest, supposedly because the money is channeled from the exporters of Fairtrade horticulture mainly in Europe. However, it would be important to study the practice and dynamics surrounding Fairtrade premium from the local to the international space, taking actors and processes into consideration and its implication on the social economic welfare of local participants.

6.6.2 The Church

Like most peripheral rural and poor communities in Kenya, the church, civil organizations, business community and non-governmental organizations are foreseeable solutions to problems of food, health and education, among others, faced by marginalized groups. The

[44] Daily Nation, 23rd February 2011, The Standard, 8th May 2011, Nairobi star, 21st July 2011

[45] http://www.fairtrade.org.uk/what_is_fairtrade/fairtrade_certification_and_the_fairtrade_mark/the_fairtrade_premium.aspx

government faced criticisms from Kasarani residents for negligence on the development agenda.

The church not only brings hope and inspiration to the community but also promotes peace in this conflict and violence-prone area. Religious and civil society organizations play an important role in recapturing lost trust and mutual coexistence within earlier conflicting parties, necessary for continued harmony in socio-economic activities. Being a multi-ethnic village housing unit with dominant conflicting ethnic groups, especially at the 2007 election violence, Kasarani was a potential area for conflict; however, such cases did not materialize. Nevertheless, as earlier mentioned, some ethnic groups fled for fear of revenge attacks, leaving their livelihood activities and assets. The church has continued to support and promote peace and reconciliation after the poll crisis.

However, it may not be sufficient to relate peace in Kasarani to the church alone; social capital and the localized nature of employment and resources prompts reconciliation and peace building. Most people who fled Kasarani in fear of violence have returned and resumed their livelihoods.

The church has also been quite influential in capacity building by providing space for education facilities. Some residents and churches take on low-level education as a business and enrollment is dependent upon the amount of tuition fees charged. As of October 2010, Kasarani had 37 churches including a mosque, some separated only by a few meters. Almost half of these churches are used as schools.

6.6.3 Education (Schools)

Education in Kasarani has suffered hardships through time. The first public primary school started in 1983/4 while the only secondary school (St. Andrews) started in 2008, reflecting almost three decades of lack of higher education for the majority who are incapable of affording higher education outside the area. One of my key informants had to ‘hide’ her daughter who had finished secondary education by sending her to live outside Kasarani with her relatives because she viewed Kasarani as an improper environment for her socialization, especially fearing for early marriage.

Despite the high levels of illiteracy, the livelihoods of some residents have improved following their educated youth who offer economic assistance when employed in or outside Kasarani. Education has created numerous teaching positions in the various schools and returns are observable by the conditions of life in majority households. Poor households seem to give education much priority and the community banks heavily upon the new secondary school to transform the village. A teacher in Loldia primary school argued that the influx of pupils follows free education possible through donations from

outsiders (like British national visiting Loldia farm). This has prompted some residents of Kasarani to bring children from their rural homes for purposes of free education.
However, problems of unemployment mostly confront the educated most since their acquired status may limit flexibility in taking up manual jobs mostly reserved for illiterate people. Education has been influential in the lives and livelihoods of many people of Kasarani; the settlement prides itself not only for having arenas to send children, thus creating space for uninterrupted commitment to livelihood activities, but that education has proved capable of transforming the community.

6.7 Summing up Social Resilience: Coping Strategies and Cases

Many residents of Kasarani have not survived on flower farm employment alone. With the discussed livelihood challenges, reliance on limited livelihood assets, informal institutions and social organizations to improve livelihoods become crucial. The activities of small-scale riparian cultivation, livestock keeping, fishing and small-to-medium sized businesses represent the main forms of diversification and means for building social resilience, albeit against deep-seated threats. However, most people recognize the importance of multi-tasking as a way of life as shown in the following cases.

6.7.1 Diversification, Multi-Locality and Livelihood Networks

Multi-tasking or diversification is a way of compensating for insufficient income or temporary crisis situations and is a strategy to escape poverty, to cope with insecurity or reduce risk (de Haan & Zoomers 2006:131). De Haan (2006:11) and Ellis (1999) insist that few of the poor derive all their income from just one source or hold their wealth in one single asset; the poor are now diversifying their portfolio of livelihood strategies, often as a means of risk aversion and survival.
Multi-locality of livelihood increases with mobility and so are the livelihood networks created. For the case of migrants and their rural homes, the outcome of mobility, multi-local livelihoods and livelihood networks is the capability to sustain reliable social networks responsible for, among other things, cash and commodity flows and mutually supportive livelihood strategies (*see* also de Haan & Zoomers 2006:132-33).

Scores of Kasarani residents rely upon multi-tasking and establishing supportive livelihoods and networks, cutting across flower farm workers, fishing, business, smallholder cultivation and livestock keeping. For instance, 67% of cultivators in Kasarani reported having other income-generating activities. Practitioners in small-to-medium size businesses diversify goods or services thus making it commonplace to see an individual managing several forms of businesses spatially, within or outside one store. For example,

most shop owners have extended space by constructing stalls to enable trade in a mixture of items including charcoal, vegetables and some foods, such as fruits. Shops stocked with foods may have a separate area for clothes and cereal. This holds true not only for good but also service provisions, such as salons, which amalgamate services and goods in most observed premises.

Photograph 5: Plurality of goods and services within single business premises. A shop used as a salon, phone charging, darts game, and sale of clothes (field data 2010)

Riparian cultivation opened a new way of diversification in Kasarani since 2009 despite the discussed challenges of sustainability. Some flower farm workers and business owners have small gardens which serve to provide food and income through sale of surplus. Interviews revealed diversification of crops and delocalization of gardens for cultivation within and outside Kasarani. Some interviewed farmers reported of owning more than one plot within the riparian area, while others have other gardens at the settlement or outside Kasarani, on plots acquired through renting or lease.

This form of delocalization reduces overdependence solely on riparian land for cultivation and assures farmers of more secure rights in other gardens compared to the riparian area, as well as less problems as compared to riparian cultivation. When asked if they had expanded their gardens in the last growing season, 86% of the interviewed households reported to have expanded their gardens either through buying additional land (those who could afford), leasehold (for most farmers) or gift by friend or neighbours (personal observations).

Diversification, multi-locality of livelihoods and livelihood networks (mutually supportive activities) as well as decomposition of the household within Kasarani are shown in Boxes

3, 4, and 5, which are presented here in the form of cases. In the interest of protecting the identity of the informants, names have been changed.

Box 2: Case 1; Diversification, Multi-Locality, Livelihood Networks (field data, 2010)

Eliud Jana, aged 42, is a Kisii by origin and a resident of Kasarani. Just like most immigrants, his brother who works at Shalimar farm housed him for two months when he moved to the area to search for work. With the help of his brother, Jana got a job at Shalimar farm and then moved out of his brother's house to start a separate life.
As an employee with Shalimar, he has the benefit of getting a staff house with a garden at the compound, where he grows vegetables. Jana has a second small garden at a church compound where he has opted to put up a small mud house and cultivate some vegetables- the land belongs to the church and he stays there as a watchman. His option to leave Shalimar staff houses is beneficial since he earns 10€ (1000 Kshs) each month as house allowance from the farm whereas he does not pay rent for the mud house at the church compound, and that through a friendly arrangement, he still has access to the Shalimar garden.

Jana has a third garden given to him by Loldia primary school to practice agro forestry as he takes care of the school´s young trees. In this garden, he plants maize, beans, and irrigates with Lake Naivasha water pumped by the school to its compound. Jana is considering getting a forth garden at the riparian area although he is careful of the inherent problems including theft of produce. His produce is enough to feed his small family and he sells the rest and at times shares with friends.
Like most immigrants, Jana married in Kasarani and has two children. The wife (a Luhya by ethnicity originally from Migori) also works at Shalimar farm enjoying similar benefits as the husband. Jana and his wife are considering returning to Kisii and so they are putting aside some money with plans to invest in business back home.

Although Jana (from the case) does not own any of the gardens, he is involved in multi-tasking within several income generating activities. Though facing multitudes of hardships within his activities, he clearly may not be as vulnerable as households subsisting on

single livelihood options because the livelihood security of the latter is easily compromised if the sole subsistence activity is disturbed. Some farmers have leased plots elsewhere (from private owners) or run small businesses within or outside Kasarani and do not rely on the riparian. Most farmers lease plots in Ndabibi, several kilometers from Kasarani and depend on rain-fed agriculture, as shown in Box 4.

Box 3: Case 2: Livelihood Diversification and Networks (field data, 2010)

Janet is 47, married with three daughters and hails from Gilgil (Kikuyu ethnicity). The family came to Kasarani 15 years ago and is among the few landowners in Kasarani who have built one-room rental units on their plot. Janet runs a small butchery and rears three sheep and a cow (for milk) within her compound. Recently the family bought land in Ndabibi, away from Kasarani, where she practices rain fed agriculture. Although Janet does most of the work, her husband assists in the butchery and occasionally does transport business with their vehicle. The gardens away from Kasarani are a great challenge to her due to management, yet she cannot leave her other income generating activities. Janet complained that her past employees have not been dependable in managing her garden. Her two daughters are in school and the third assists in household chores. None of Janet´s family has worked for the flower farms.

Support is essential, especially in obtaining gardens since accessing formal loans for agricultural development or expansion is almost nonexistent in most of Kasarani. Pooling all sources of livelihoods together strengthens people´s adaptive capacity and thus builds social resilience.

Fishermen and fish dealers are also involved in livelihood diversification. A case of one woman in the group of interviewed fishermen and dealers (Box 5) stood out.

Box 4: Case 3; Livelihood Diversification (field data, 2010)

Beth), aged 58 is a Luo originally from Kisumu. She has no family in Kasarani but has close ties with her rural home. Beth owns a fishing boat and has employed three fishermen. Every day she is present when the fishermen return from their long hours of work and everyday´s sale is divided between the four persons. The fishermen are out from 11am to 3pm, which gives her ample time to operate her small shop in Kasarani. Beth is also a trader in fish, so she participates in selecting and buying fish like other traders. Unlike most traders, she cooks her fish every evening in her small `mabati´(iron-sheet) Kiosk for sale. Beth is also among the few landowners in Kasarani with one-room houses for rent. Although she fled the tension that mounted Kasarani during the 2007/2008 post-election violence, Beth has returned and resumed her activities.

6.7.2 Cash and Commodity Flows

Cash and commodity flow refers to money, items or materials (mostly foods) transferred from and between migrant workers and their non-resident households (referred here as rural homes). Cash and commodity flows are a fundamental coping strategy as well as a social resilience mechanism for most migrants and their rural homes, especially when viewed from a mutually beneficial perspective. This means that successful labour migrants send money/items to their rural homes whereas the migrants receive items/money from

their rural homes, especially during job perturbations. As earlier mentioned, most residents of Kasarani have engaged in migration as their coping strategy, some from conflict or poverty stricken backgrounds, while others move in search for 'greener pastures' and others from broken marriages. For many of these people, existent networks, which necessitate exchanges, become central.

Cash flow plays a colossal role in Kasarani as compared to foods and other materials. Technology innovations in Kenya have made possible the mobile-phone based money transfer service commonly known as 'Mpesa', operated by Safaricom mobile network provider. Since the service's launch in 2007, Mpsea has witnessed tremendous growth indicative of high customer subscription as it addresses the financial needs of the majority of unbanked Kenyans who are either deprived of access to financial institutions, especially in the rural areas, or cannot afford the financial services. Mpesa's importance in enabling fast, easy and affordable way of sending and receiving money through mobile phones has contributed to the service's expansion[46].

Sending and receiving of money through mobile phones has not only simplified cash flow and brought a new approach in looking at migrant networks and exchanges, but has also enabled development and support of livelihoods especially in rural areas. Exchanges in Kasarani vary through time and are dependent on prevailing job situations (for migrants) and availability of food or money (at their rural homes).

Table 5 below shows data collected from the main Mpesa agent (provider of Mpesa services authorised by Safaricom Company) in Kasarani. Choice of the agent was based on stability of the business since its establishment compared to other agents and the high customer enrollment.

Table 5: Mpesa Data for Kasarani

Date	Deposits (amt. Kshs)	Withdrawals (amt. Kshs)
1st Sept, 2010	53	25
2nd Sept, 2010	33	10
3rd Sept, 2010	42	16
4th Sept, 2010	33	18
15th Sept, 2010	20	15
17th Sept, 2010	34	20

From Table 5, Mpesa transactions involved more deposits than withdrawals in the six days indicated for the month of September. Transactions are more at the start and mid month, referring to the payment periods for most workers' wages and advance payments, respectively[47]. However, it should be emphasized that Mpesa transactions (withdrawals or deposits) do not necessarily mean that money has been exchanged between a migrant

[46] http://www.safaricom.co.ke/index.php?id=250
[47] Data based on interview with Mpesa agent and customers.

and their rural homes. This contrasts popular assumption that Mpesa transactions translate to exchanges between migrants and their rural homes or friends for assistance. Interviews with the agent and customers revealed that most people of Kasarani use Mpesa for at least three purposes:

1. Mpesa as 'mobile bank accounts': most people in Kasarani do not have bank accounts thus prefer to save money in their mobile phones unlike keeping it in cash. They withdraw when need arises. 'Mobile' as used here covers mobile phones and the flexibility of 'carrying' ones account around allowing for withdrawal whenever necessary;
2. Mpesa is used to pay bills, informal loans and related credits. These could include informal loans from friends; and
3. Sending and receiving money (cash flow): This forms the largest proportion of Mpesa transactions and is easy to measure by computing monies send or received or through interviews.

6.8 Response Mechanisms to Livelihood Shocks

6.8.1 Temporary Out-Migration

As earlier indicated, there is little evidence to support temporary out-migration from Kasarani as a response strategy for most people grappling with poverty. Instead, migration to Kasarani is, in itself, a coping strategy for the majority. Most interviewed people did not mention having to leave Kasarani for another place then return when situations are better. However, a few migrants (who were not yet employed and without beneficial strategies) talked of plans to return to their rural homes if the situation of poverty worsened at any given time. This is not surprising for frustrated labour migrants.

6.8.2 Informal Networks and Arrangements as Response Mechanisms

Informal arrangements and networks serve as essential response mechanisms to livelihood shocks in Kasarani. People working within each of the livelihood strategies discussed in chapter six (specifically 6.1.2 to 6.1.5) face various shocks; for instance, unexpected loss of jobs from large-scale farms, periodic ban on fishing with receding lake water, flooding of riparian area which leads to destruction of crops, among others. People with additional or supportive livelihood strategies are not as vulnerable as those without.

Key informants reported on the existence of informal networks created as a way of sharing available income. These include cohabitation, especially among single and unemployed females who want to depend upon working males. There is also an increase in the so called 'husband theft' in Kasarani during bad times. This is a scenario where

some women (especially the unemployed) become promiscuous to attract working males irrespective of their marital statuses with the aim of seeking financial assistance, especially in shouldering bills, such as house rent. As a result, HIV/AIDS remains a threat in the area (according to interviews with residents).

6.8.3 Food Aid

Supply of food aid to hunger-stricken populations is a major response strategy by national and international donors especially at the height of poverty, not only in Kasarani, but also in most parts of Kenya and less developed countries affected by scorching poverty. Whether these food aid responses are timely or well coordinated, remains a puzzle for many. Whereas food aid comes under criticisms for perpetuating dependency and sustaining hunger in some cases, it still plays an essential role by serving as the backbone of survival for many. Kasarani residents have received food aid in several occasions, like in 2009, when conditions of poor rainfall and receding lake levels affected the livelihoods of most people in both direct and indirect ways. However, the area lacks proper structures of sharing aid. Residents complained that distribution of food, normally executed by the area chief, follows ethnic lines.

7. Conclusion

This thesis has discussed the link between conversion of Lake Naivasha wetland under global markets for cut flowers and flourishing investments (horticulture, commercial large-scale livestock keeping, tourisms etc.) with poverty and marginalization of the local population of Kasarani, who mostly consist of employment-driven immigrants. Several factors have been accorded prominence:

The upsurge of horticulture, tourism and other investments has led to occupation of most land surrounding the lake including riparian land. Whereas these investments have positive feedback to the national economy and sustain international markets for agricultural produce and tourism, among others, they come under criticism for perpetuating poverty through multiple ways, like creating asymmetries in resource access and use (land and water), non-sustainable employment with instances of poor pay and unhealthy working conditions, especially in flower farms.

Mushrooming of sanitation-deficient settlements (informal settlements) around the lake, ensuing population expansion owing to employment-driven immigration and demands for cheap labour in the thriving industries results in uneven job availability and unemployment for scores of immigrants. Livelihood threats stemming from population growth in the informal settlements and extensive investment around the lake include limited assets,

broadened gaps between the rich and poor, resource competition and conflicts, resource depletion and degradation.

The combination of these factors breeds deep-seated environmental/resource and human vulnerability, referring to resource scarcities and poverty, respectively. For Kasarani residents, building social resilience against livelihood shocks and stress is the foundation for survival albeit enormous challenges within diversified livelihoods exist. However, broadening social relations and pursuing multiple, diverse economic options remain the main survival strategies.

7.1 Feasibility of a Better Future

Reliance on limited available livelihood assets, informal institutions and social organizations has facilitated pursuit of diversified livelihoods for most residents of Kasarani. However, it is imperative to recognize and address the factors that have hindered pursuit of sustainable livelihoods in the area.

Financial returns from horticulture and other investments at Lake Naivasha should not only benefit the national economy and international markets, but also raise the socio-economic status of local workers. Poor pay and working conditions in some big farms, evidenced in this study, cripple workers increasing the likelihood of poverty against the anticipated better livelihoods from employment. Strengthening workers' rights groups, such as COTU and KPAWU will go a long way in negotiating for workers' rights, but cooperation of employers, workers and Fairtrade is necessary for sustainability.

Diversified livelihoods, in Kasarani, have commonly come against increased transaction costs, which undermine the perceived benefits. It is essential for civil society organizations to engage in teaching the community profitable and realistic opportunities that suit limitations in space and reduce negative competition in small-scale investments, such as small-to-medium size businesses. The government and other stakeholders have a role to play, especially regarding provision of livelihood assets that support pursuit of sustainable livelihoods, such as financial capital (micro-credits and other formal credits), physical capital and human capital (such as health facilities), among others.

Restoration, sustainable management and conservation of Lake Naivasha Ramsar site faces challenges following the multiplicity of interests representing the government, powerful investors and smallholders (upper and lower catchment) and the global markets. However, strong sentiments of degradation seem to be bestowed upon poor agricultural practices among smallholders, who presumably lack the capacity compared to powerful players. All actors within and outside the lake basin must be put to task to ensure sustainable resource use and management of the ecosystem. Allowing riparian land use

by big farms, small-scale cultivation among other related uses undermines the ecosystems biodiversity and sustainability.

The question of land inequalities in Naivasha, the Rift Valley and other parts of Kenya has proved to be a 'time bomb' whose explosion is triggered by the smallest actions and reactions, thus fueling inter-ethnic conflicts, as witnessed in the 2007-2008 post-election period. There is need to address the land problem amicably as well as related asymmetries in access and use of productive resources to foster a pro-poor sustainable resource utilization and management plan aimed at increasing their food security situation and protecting the environment. Prescribing the maximum land acreage for private land could enable equality and provide a chance for landless Kenyans to own land.

7.2 Reflecting on Social Resilience and Application to Sustainable Livelihoods

Social resilience provides an important concept in livelihood studies. Despite misunderstandings arising from varied interpretations and the lack of scientific consensus on meaning, methods of study, tools of analysis among other factors, the approach is central when addressing social change; especially in policy-driven understanding of humans faced with naturally occurring or manufactured adversities, thus making it a crucial part of sustainable livelihoods discourses. The emphasis then follows Friedland et al. (2005) that the challenge to social scientists is to refine the definition of social resilience, to develop methods for its measurements and to identify and investigate factors and processes that enhance social resilience or undermine it.

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