



## Small-scale farming in semi-arid areas: Livelihood dynamics between 1997 and 2010 in Laikipia, Kenya

Anne Ulrich<sup>a,\*</sup>, Chinwe Ifejika Speranza<sup>b,c</sup>, Paul Roden<sup>a</sup>, Boniface Kiteme<sup>c</sup>, Urs Wiesmann<sup>b</sup>, Marcus Nüsser<sup>a</sup>

<sup>a</sup> Department of Geography, South Asia Institute (SAI), Heidelberg University, Im Neuenheimer Feld 330, 69120 Heidelberg, Germany

<sup>b</sup> Centre for Development and Environment (CDE), University of Bern, Hallerstrasse 10, 3012 Bern, Switzerland

<sup>c</sup> Centre for Training and Integrated Research in Arid and Semi-Arid Land Development (CETRAD), P.O. Box 144 – 10400, Nanyuki, Kenya

### A B S T R A C T

#### Keywords:

Livelihood  
Rural development  
Asset portfolio  
Bi-temporal analysis  
Kenya  
Laikipia

The rural population of semi-arid lands in Kenya face multiple challenges that result from population growth, poor markets, land use and climatic changes. In particular, subsistence oriented farmers face various risks and opportunities in their attempt to secure their livelihoods. This paper presents an analysis on how livelihood assets and strategies of smallholders in Laikipia County, Kenya, have changed within the last decade and discusses the implications for development interventions. The analysis is based on bi-temporal data from 170 semi-structured household interviews in 1997 and a follow-up survey of 30 households conducted in 2010. Well-being indicators were developed and livelihood portfolios compared. The results show a striking persistence in low asset endowment for the majority of smallholders from an aggregated perspective, whereas transitions into and out of better livelihood conditions become evident from a household perspective. The investment in, and accumulation of, conventional buffer or productive assets, such as grain stocks, livestock or land, does not shield households from adverse shocks and stresses as smallholders were shown to easily slip back into poverty. Household portfolios display particular constraints for smallholders in expanding natural resource related activities and a substantial decrease in livestock numbers. While off-farm activities could possibly increase well-being, the prevailing low income levels and high insecurity for the majority who are engaged in off-farm employment, limits the ability to increase livelihood assets in the area.

© 2012 Elsevier Ltd. All rights reserved.

### 1. Introduction

Securing rural livelihoods and well-being in the rural areas of Africa continues to be challenged by dynamic socio-ecological conditions and low adaptive capacities (Misselhorn, 2005; Lay et al., 2008; Thornton et al., 2010). Poverty reduction thus remains one of the greatest challenges for development and has been revived as a central topic in the development discourse as well as in the Kenyan national agenda and in the Millennium Development Goals (GoK, 2007). Half of the Kenyan population is estimated to live below the poverty line, which for the rural areas was set at an equivalent of US\$ 0.68 per day (UNDP, 2006). The population in arid and semi-arid lands, which constitute 80 per cent of Kenya, is among the most

vulnerable. They face new challenges as a result of rapid changes in an array of socio-economic, political and ecological conditions. Massive population growth since independence in 1963 as well as land use changes and land degradation respectively have led to dramatic socio-ecological changes (Kiteme et al., 2008). Livelihoods are further exposed to economic liberalization, new governance structures, food insecurity and ethnic conflicts among others. The expected increasing frequency of droughts and floods (IPCC, 2007) pose new threats to their livelihoods.

In rural Kenya, livelihoods are mainly based on crop cultivation and livestock keeping. The smallholders are most affected by and at the same time shape their own region's development (Wiesmann, 1998). The necessity to understand their capacity to cope with a difficult and changing environment as well as their ability to take advantage of opportunities has been widely acknowledged. This is yet again made clear with the severe drought that hit the Horn of Africa in 2011 leaving an estimated thirteen million people in need of humanitarian aid, despite early warning system predictions. Longer-term solutions for such crisis through the assistance in

\* Corresponding author. Tel.: +49 (0) 6221 544398; fax: +49 (0) 6221 545926.

E-mail addresses: [ulrich@sai.uni-heidelberg.de](mailto:ulrich@sai.uni-heidelberg.de) (A. Ulrich), [chinwe.ifejika.speranza@cde.unibe.ch](mailto:chinwe.ifejika.speranza@cde.unibe.ch) (C. Ifejika Speranza), [paul.roden@gmail.com](mailto:paul.roden@gmail.com) (P. Roden), [b.kiteme@africaonline.co.ke](mailto:b.kiteme@africaonline.co.ke) (B. Kiteme), [Urs.Wiesmann@cde.unibe.ch](mailto:Urs.Wiesmann@cde.unibe.ch) (U. Wiesmann), [marcus.nuesser@uni-heidelberg.de](mailto:marcus.nuesser@uni-heidelberg.de) (M. Nüsser).

sustainable livelihoods and people's resilience are called for. Analysing livelihood strategies is an integral part of development research and practice that aims to increase both livelihood resilience and actors' adaptive capacities.

In general, livelihoods are defined as the capabilities, assets and activities required for a means of living (Chambers and Conway, 1992). The assets are classified into five categories: human, natural, financial, physical and social capital. Resilience applied to livelihoods refers to the capacity to tolerate disturbance without the livelihood collapsing and to the ability of local actors to cope with stress and shocks (Adger, 2000; Carpenter et al., 2001). Livelihood insecurity is often associated with vulnerability, that is, the exposure to threats and the inability to cope, as it is the poor who are first affected by stressors and who have the least capacity to cope and adapt (Chambers, 1989; Bohle et al., 1994; Adger, 2006). However, poverty is measured in either non-dimensional economic or multi-dimensional ways (Chambers, 2006). Using monetary terms only, the Government of Kenya defines the poor as those who cannot afford basic food and non-food items having less than KSH 1239 (~US\$ 14) per adult equivalent per month (GoK, 2000). As it is widely discussed that income alone does not necessarily provide a reliable measure of well-being, the use of assets as a measure should complement income and consumption-based measures of welfare and wealth (Carter and Barrett, 2006; Moser and Felton, 2007; Addison et al., 2009). In this study, the term well-being is used to capture the wider dimensions not captured when using poverty in monetary terms. Marschke and Berkes (2006) argue that an analysis of well-being sheds light on livelihood realities on a local level and complements resilience analysis.

In light of recent calls for more effort on understanding livelihood dynamics (De Haan and Zoomers, 2005; Addison et al., 2009; Scoones, 2009), this paper contributes to the current livelihood debate with an inter- and intra-household comparison over thirteen years. The longitudinal analysis and focus on livelihood dynamics is one way to comprehend longer-term change (Scoones, 2009). Looking at the same households over time allows a better understanding of the conditions that keep people in poverty and on what enables them to improve their situation and inform policies (Kristjansson et al., 2010). Furthermore, De Haan (2010) calls for more longitudinal studies within actor-oriented livelihood research. The focus on how households respond to continuous change helps understand local development and highlights individuals' active or proactive role in enhancing and securing their livelihoods (De Haan and Zoomers, 2005). This study takes up this actor-oriented approach (Wiesmann et al., 2011) based on Bourdieu's (1997) forms of capital and Giddens structuration theory (1984) and action theory (2009). While recent studies on livelihood dynamics have focused on livelihood strategies (Marschke and Berkes, 2006) or livelihood trajectories (Sallu et al., 2010), this paper aims to analyse the (changing) composition of assets in order to deepen the understanding of how smallholder livelihoods have changed over the past decade. The accumulation, loss or substitution of assets directly and indirectly translates from livelihood strategies, from the formal and informal institutional setting and the shocks and stresses that farmers face. The focus on assets is therefore a way to analyse livelihood dynamics and further allows linking these with smallholders' well-being.

Based on a retrospective approach, quantitative and qualitative data on asset endowments for 30 households collected in 1997 were repeated in 2010. With a comparative bi-temporal perspective households' combination and substitution of assets, that can be called their portfolio of assets, are assessed. Dynamics and stability within these portfolio compositions are analysed at household level as well as from an aggregated perspective. A greater understanding of the distribution of poverty within a population,

differentiating between permanent and transitory conditions (Addison et al., 2009), is addressed through the development of a well-being indicator that allows for a comparison between households and within households over time. Standardised criteria such as education level, income from farm and off-farm activities, level of subsistence, livestock, housing material and community participation are integrated in the composite indicator. Although health issues also play an important role for well-being, it could not be integrated due to data gaps.

## 2. The study area

Laikipia County lies on the north-western, semi-arid foot zone of Mount Kenya. Located on a high plateau with an altitude between 1600 and 2300 m a.s.l. it spans a total area of 9700 km<sup>2</sup> (Kiteme et al., 2008). The area experiences three rain seasons including the long rains (Mar–June), continental rains (Aug–Sept), and the short rains (Oct–Dec). Long-term climate data in the region reveal climate variability between years (annual rainfall trend 1930s to 2000s); and that the climate outlook during this period is more or less the same (considering a 30 year period cycle). The rains are unreliable and unpredictable in terms of onset, duration and termination. Seasons experiencing total rain failure during continental rains have increased from 4 (1961–1982) to 6 (1986–2000) (Gichuki et al., 1998; CETRAD and CDE, 2007). These climatic changes and variability impact greatly on all natural resources and particularly water that continues to become scarcer. Furthermore major river systems in the area indicate a significant decline (from 9 m<sup>3</sup>/s in 1960s to less than 1 m<sup>3</sup>/s in 2000s) even when the rainfall regime has not shown any significant change to impact on these river flows. This revelation could be attributed mainly to regional land use changes associated with increasing population and growing demand for river water to support irrigation production (Kiteme et al., 2008; Gichuki et al., 1998). With a high variability and unreliability of rainfall and declining water resources coupled with the worsening problem of land degradation and high erodibility of soils, local actors in the area face harsh ecological conditions, of which water availability has been identified as the most limiting factor for agriculture (Wiesmann, 1998). The situation is likely to worsen as climate models in the area predict increasing variation in rainfall patterns affecting freshwater availability. Not only the amount in total rainfall, but its inter- and intra-annual variability will increase and adversely affect peoples' livelihoods (Notter et al., 2007).

A deeper understanding of recent land use change requires integrating the historical dimension of cultural landscape transformation. Land ownership and tenure have undergone two major changes over the past century. The Maasai were the traditional inhabitants of the area that became known as the *White Highlands* during the colonial period, when land use shifted to extensive farming, reserved for European settlers (Kohler, 1987). With Kenya's independence in 1963 land distribution programmes led to internal migration particularly to the region north-west of Mount Kenya (Kohler, 1988; Kiteme et al., 2008).<sup>1</sup> This high influx of people led to population increase from 60,000 in 1960 to over 400,000 residents in 2009 in Laikipia County (KNBS, 2009). Land use changed respectively from predominant extensive ranching to small-scale mixed farming (Wiesmann, 1998).

The transformation in land use systems is reflected in the following pattern: Towards the mountain, on the highlands and mountain foot-slopes, smallholder farming becomes denser and large-scale horticulture enterprises have been established (Ngigi

<sup>1</sup> The 2008 post-election crises in Kenya did not directly affect the study area.

Download English Version:

<https://daneshyari.com/en/article/92673>

Download Persian Version:

<https://daneshyari.com/article/92673>

[Daneshyari.com](https://daneshyari.com)