

### Natural environment

The Laikipia District is situated on a high-plateau in the Rift Valley Province in central Kenya and has a total area of 9'723 km<sup>2</sup>. It exhibits a considerable variation in relief with altitudes ranging between 1'500 m a.s.l. in the vicinity of the Ewaso Ng'iro river, to over 2600 m a.s.l. in the Marmanet uplands. The Great Rift and its lakes border the Laikipia Plateau to the west, while the Ndarua Range (Aberdares) and Mount Kenya with its agricultural districts Nyeri and Nyandarua of Central Province form the southern boundary. To the north and east Laikipia grades into low-lying plains and the predominantly pastoralist district Samburu. Phonolithe Lava of Miocene age form the predominant geology, although the basement complex rocks of pre-Cambrian age outcrop in the east. The Mount Kenya landmass gives considerable climatic influence across the plateau and gives rise to several altitudes related agro-ecological zones that include sub-humid as well as semi-arid to arid habitats, whereby the latter make up the larger percentage of the total area.

Daily temperatures vary with altitude and season; mean temperatures generally range within 22-26°C and temperature Minima and Maximum are 6-14°C and 35°C respectively. Due to the districts leeward position North West of the Mt. Kenya massif, it is comparatively dry despite its location on the Equator. The spatial distribution and the temporal viability of rainfall though are strongly influenced by the Mt. Kenya and the Ndarua range (Aberdares). Along the foot zones of the massifs, the annual mean rainfall can go up to over 1100 mm (Mt. Kenya forest), but is decreasing towards the central and northern areas with figures as low as 350 mm (Doldol) per annum. Precipitations also vary greatly in terms of time and amount along the same gradient. (Kohler 1987, Wiesmann 1998, Ledermann 2003)

The rains primarily fall in two seasons; the main wet season occurs during April-May, often accounting for 80% of total annual rainfall, while a second wet season occurs later in the year in October-November. There are exceptions to this, however, especially in the central and eastern sections extending as far as the Lolldaiga Hills, where three rainy seasons are experienced. (Berger 1989 and Gichuki et al. 1998, in: Lane (ed.) 2005: 2)

The agro-ecological zones are a direct consequence of the distribution and intensity of precipitation, and therefore they also reveal a constant dynamic regarding their boundaries. Due to a combination of climatic, geological and topographical conditions, however, surface water on the plateau is scarce and confined mainly to a few rivers. In particular, evapotranspiration is intense and moisture deficits are widely experienced in the majority of years.

Laikipia forms the upper catchment for the Ewaso Ng'iro River which is the main water source for the semi-arid and arid low lands in the north eastern part of the District and the bordering Samburu District. During the dry season, the only contributors are the perennial rivers flowing through Laikipia which are fed solely by the two elevations Mt. Kenya and Ndarua Range. Therefore, these rivers play a very important role within the water supply system in the catchment.

Modern vegetation varies substantially across the Laikipia Plateau, with a total of twelve identifiable categories of natural, semi-natural and humanly created vegetation types. (Taiti 1992, in: Lane (ed) 2005: 2) These range from agricultural and urban vegetation complexes at one extreme, through plantation forest and different categories of leafy bush land and grassland, to upland dry forest and various marshy wetlands. Vegetation patterns on the Laikipia Plateau generally reflect levels of effective precipitation, soils and the level of human modification.

## Human environment

The region had undergone dramatic changes in the last century in response to transitions brought about under colonial rule and post independence administration. In this semi-arid district, the issue of land use and population dynamics are strongly intertwined, whereby two major caesuras are to be mentioned:

In pre-colonial times, most of Laikipia formed part of the territory of the semi-nomadic Massai pastoralists<sup>1</sup>. Under colonial rule at the beginning of the 20th century, they were forced either towards the south west of the country or into the Mukogodo 'native-reserve' in the eastern part of Laikipia. The Laikipia plateau became a so-called 'scheduled area', reserved for European settlers. The "white highlands" were then subdivided into large ranches which mainly practised market-oriented livestock farming. Consequently, the population decreased by approximately 50%, from 60'000 to 30'000.

The second transformation came with Kenya's independence 1963:

Large ranches and farms were taken over by the government or sold to private companies. They were then subdivided in small plots and redistributed to small scale farmers, willing to migrate into the area. The immigrants mostly came from the very densely populated high potential areas south west of Mt. Kenya, causing a heavy population increase within a relatively short time. Along with the immigration of small scale farmers, the process of growing regional centres continued to develop.<sup>2</sup>

The land use systems in Laikipia are strongly reflected by these population dynamics:

By now, approximately one third of the original large scale ranches has been subdivided<sup>3</sup> but large parts of the district still consist of commercial ranches –some of them remained in white settler families' ownership- which practice a mix of market oriented ranching and tourism. The pastoralists in the lowlands continue to use the former reserve areas, but due to population pressure and land degradation, conflicts over the limited resources are becoming more severe.<sup>4</sup> Even though the population growth in Laikipia has not kept pace with forecasts in the mid-nineties (as stated in Wiesmann 1998: 93)<sup>5</sup>, the dispersion of small scale farms and plots into more marginal areas, continuously advances.

Partly as a consequence of this, 8.4% of the land is currently under cultivation, most of which is concentrated in West Laikipia and around the districts' administrative and commercial centre Nanyuki, even though only 1.7% of the district is classified as having high agricultural potential.<sup>6</sup>

Most immigrants moving to Laikipia are Kikuyu peasants<sup>7</sup> from high potential regions in Central Province who continue their habitual systems of rain-fed mixed farming in their new home area.<sup>8</sup>

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<sup>1</sup> Pastoralists: a term used for people doing animal husbandry, containing a mobile element.

<sup>2</sup> Nanyuki is the districts' administrative and economical centre. It consists of about 30'000 inhabitants. As a former border town to the northern frontier districts, the place shows a cultural and tribal mixture of people. Nanyuki also hosts three army bases, namely two units of the Kenya Armed Forces, and a British Army training camp and performs as the supply station for tourism industry around Mt Kenya and the commercial ranches and farms in the district.

<sup>3</sup> Lane 2005: 4

<sup>4</sup> See TIME Europe Magazine Edition site for an article about land disputes in Laikipia in 2004 (<http://www.time.com/time/europe/magazine/article/0,13005,901040927-699336,00.html>)

<sup>5</sup> Actual data on population figures on district level (Laikipia): 2005= 396'338; 1999= 322'187 (<http://www.cbs.go.ke/> (20.05.06)).

<sup>6</sup> Huber und Oponde 1995, Kiteme et al. 1998 in: Lane (ed) 2005: 4.

<sup>7</sup> The Kikuyu people are the largest of the 42 distinguished ethnic groups in Kenya with almost 25% of the total population (2005). They are traditionally farmers.

<sup>8</sup> 'Mixed farming': a combination of crop-farming, vegetable growing and livestock keeping.

The main factors entailing people to buy land in ecologically marginal areas like Laikipia are stratification processes in the home area, population growth and also cultural aspects such as subdivision of plots due to inheritance and the lack of employment in the industry and service sector (Wacker 1996: 26). While the immigrants face problems in ensuring subsistence through the given limited natural resources and ecological confinements, the trend in turning towards alternative activities and strategies for surviving can be seen as a ramification of the endangered livelihoods through the above mentioned constraints.

The subdivision and reselling of large scale farms and ranches formerly owned by whites and the subsequent occupation of areas by smallholder households remained constant for almost a decade<sup>9</sup>, before a new settling wave at the beginning of the 90ies occurred, continuing along the ecological gradient into less favourable farming areas towards north-west (Rumuruti), north and north-eastern (Dol-Dol) parts of the district.

It seems that **'push' factors** among the motivations for migration into Laikipia have always dominated. For 83.2% of the migrants investigated in Wiesmann (1998) the following factors were clearly the most important ones:

1. lack of own land in the area of origin
2. no room on family land as a result of family and population growth
3. land disputes which led to forced migration
4. being former farm labourers in the white highlands without land of their own

The **'pull' factors** mentioned were:

1. availability of land at reasonable prizes
2. grazing areas
3. the hope for employment

The 'push' factors, rooted in the population pressure in the central highlands, are predominant. Moreover, 50% of the households questioned were not familiar with Laikipia and its natural conditions at the time they decided to migrate, which shows that the natural conditions at the time of land purchase were ignored. (Wiesmann 1998)

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<sup>9</sup> Kohler 1987