



# Drivers of Maasai pastoralists livelihood changes and diversification in Kajiado County, Kenya

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## Abstract

This study explores the drivers of livelihood changes and diversification among Maasai pastoralists in Kajiado County, Kenya. The Maasai, traditionally reliant on livestock keeping, are experiencing significant shifts in their livelihood strategies due to various factors. By examining these drivers, policymakers and development practitioners can better understand the dynamics of Maasai livelihoods and design effective interventions to support their adaptive strategies and promote sustainable livelihood practices. The research utilized a mixed-methods approach, combining qualitative and quantitative data collection methods. Primary data was gathered through interviews, focus group discussions, and surveys conducted among Maasai pastoralist communities. Secondary data sources, including reports and scholarly articles, provided additional insights into the livelihood challenges and opportunities faced by the Maasai. The findings highlight several key drivers influencing livelihood changes and diversification among the Maasai pastoralists. These include environmental factors such as climate change and declining livestock productivity, economic opportunities arising from market demand shifts, education and exposure to new livelihood options, adaptation to climate change, and changing social dynamics within the community. Strengthening support systems is crucial, involving the provision of education and training programs tailored to alternative livelihoods, improved access to resources, and tailored financial services. Fostering market access and infrastructure development is also essential to connect Maasai pastoralists with potential buyers and improve the efficiency of goods and services movement. The research contributes to the existing knowledge on Maasai livelihoods by providing empirical evidence on the drivers of livelihood changes and diversification. The findings have practical implications for policymakers and development agencies seeking to enhance the resilience and well-being of Maasai pastoralist communities. By addressing the identified drivers and implementing the recommended interventions, sustainable livelihood practices can be promoted, ensuring the preservation of Maasai cultural heritage and improved livelihood outcomes.

**Index Terms** - Maasai pastoralists, livelihood changes, diversification, drivers.

## I. INTRODUCTION

As traditional nomadic herders, the Maasai have relied primarily on livestock keeping for their sustenance and economic stability. However, various drivers have prompted shifts in their livelihood strategies, leading to a need for comprehensive research on the factors influencing these changes (Stavi *et al.*, 2022). Like other pastoralists, Maasai pastoralists are undergoing fast change. Pastoralism faces enormous difficulties as a result of these changes and the associated challenges, making its future uncertain (Reid *et al.*, 2014). Environmental factors, which include frequent and severe droughts, changes in land use, and changes in land tenure are some of the main drivers influencing change (Worden, 2007). According to BurnSilver (2009), land privatization accelerates land fragmentation and conversion to non-pastoral uses, thus weakening the viability of pastoralism as a sole source of income (Reid *et al.*, 2008; Nkedianye *et al.*, 2019). Other major factors influencing change include the increase in the number of people living in marginalized areas, both inside and outside of pastoral institutions, state neglect, and both economic and political marginalization (Archambault, 2011). The dynamic nature of the pastoral socio-economic and policy environments is accelerating change and driving more pastoralists away from their "traditional" ways of life (Merzel & D'afflitti, 2003). Traditional ways of life make the Maasai people more vulnerable to biophysical changes and other shocks as well as poverty (UNEP and GoK, 2006).

Ongoing developments, coupled with increasing population, environmental and financial pressures, are the driving forces that are transforming the lifestyles and livelihoods of many Maasai in pastoral areas like Kajiado (Meinzen-Dick & Mwangi, 2009; Thompson *et al.*, 2009). The foundations that have sustained pastoralism for centuries are coming under increasing stress among the Maasai of Kajiado County as a result of these developments and changes. For example, as more young people enroll in school and are thus absent for extended periods of time when they are most needed for grazing, family-supplied labor, is decreasing. Schooling, Christian doctrine, support from non-governmental organizations (NGOs), and state-funded family planning programs have all had a significant influence on livelihood changes and diversification among the Maasai (Baird, 2015). Additionally, as the cash economy

places an unprecedented pressure on numerous aspects of Maasai life, pastoral household heads are finding it harder and harder to support larger families nowadays. As a result, families in the bulk of Maasailand are facing escalating financial needs that are frequently unmet by the region's cash income sources, which are predominantly derived from the sale of livestock (McCabe *et al*, 2014). The social and economic mechanisms that have historically supported widows and other less fortunate Maasai community members are also eroding (for example, norms of reciprocity between friendship and kinship relationships providing mutual support in times of difficulty). Because of the rise in poverty, there are more people who are dependent on others (Radeny, 2007).

In pastoral areas, including Kajiado, change is drifting away from the traditional methods and towards a variety of livelihood alternatives (Homewood *et al*, 2009). Beyond keeping livestock, many pastoral communities in the world today are exploring diverse livelihoods as well as employment possibilities (BurnSilver, 2009). Maasai pastoralists of Kajiado County are expanding their sources of income in response to the changing times. These include manual labor, burning charcoal, salaried employment, establishing rental residences in shopping centers, leasing their land to others, and engaging in a variety of businesses (Homewood *et al*, 2009). Others work in the marble mining sector, sand harvesting and land brokerage particularly in regions with significant agricultural and development potential. These shifts are exacerbated by the rising demographic demands on the land, increased climatic variability, and government land use laws that historically favor agriculture over pastoralism. Many families find it increasingly challenging to prevent or escape the poverty trap, since the shift from traditional practices to newer ones is beset with challenges and uncertainties (McCabe *et al*, 2014).

Understanding the drivers of Maasai pastoralists' livelihood transformations is crucial for informing policy interventions and development initiatives aimed at supporting their adaptive strategies and ensuring sustainable livelihoods. This research aims to investigate and analyze the key drivers that have influenced the livelihood changes and diversification among the Maasai pastoralists in Kajiado County. By examining the socio-economic, environmental, and cultural factors at play, this study seeks to shed light on the dynamic nature of Maasai livelihoods and provide valuable insights for promoting resilient and sustainable livelihood practices in pastoralist communities.

## II. RESEARCH METHODOLOGY

To conduct this research, a mixed-methods approach was employed, combining qualitative data collection methods such as interviews and focus group discussions with descriptive surveys. This comprehensive methodology allowed for a holistic understanding of the former, current and potential future livelihood sources for Maasai pastoralists and factors that may influence the change or diversification in livelihood sources. A sample of 30 randomly selected respondents in Elangatawuas Ward, Kajiado County was selected for the study. Data was collected from respondents using semi-structured open-ended questionnaires. The survey questionnaire was administered through face to face personal interviews with the respondents. The questionnaire was administered to the respondents with the help of a research assistant who understood the local Maasai language. The study also administered 2 key informants to 2 community leaders; which gave an in-depth and felt response without feeling held back in revealing of any information from the key community people. 1 Focus group discussion was conducted, which was intended to assist in information sharing that was important in highlighting challenges associated with traditional livestock keeping and other potential livelihood sources in Elangatawuas. Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 28. Tables were used to present the data while descriptive statistics such as percentages were used to answer research questions.

## III. RESULTS AND DISCUSSION

### 4.1 Livelihood sources of Maasai pastoralists 10 years ago

The table 4.1 below provides information on the main livelihood sources for Maasai pastoralists 10 years ago. It presents the frequencies and percentages of different responses. The main livelihood source for Maasai pastoralists 10 years ago was livestock keeping, (85.7%). This indicates that the majority of Maasai pastoralists relied on livestock keeping as their primary source of income and sustenance during that period. Other livelihood sources mentioned by the respondents include business, marble quarrying, and sand harvesting. Business was reported by 5.7% of the respondents, while marble quarrying and sand harvesting account for 5.7% and 2.9%, respectively.

Table 4.1. Main livelihood sources of Maasai pastoralists 10 years ago

		Responses		
		N	Percent	Percent of Cases
a	Livestock keeping	30	85.7%	100.0%
	Business	2	5.7%	6.7%
	Marble quarrying	2	5.7%	6.7%
	Sand harvesting	1	2.9%	3.3%
	Total	35	100.0%	116.7%

<sup>a</sup> Dichotomy group tabulated at value 1.

### 4.2 Current main livelihood sources of Maasai pastoralists

The table 4.2 below provides information on the distribution of the current main livelihood sources among Maasai pastoralists. Keeping livestock represents the largest percentage, with 64.7% of the respondents indicating that their main livelihood source is keeping livestock. It implies that a significant majority of Maasai pastoralists rely on livestock rearing as their primary economic

activity. Approximately 8.8% of the respondents engage in livestock trading as their main livelihood source. This suggests that a smaller proportion of Maasai pastoralists are involved in buying and selling livestock for income generation. Crop farming and formal employment were reported by 5.9% of the respondents. This indicates that a relatively small percentage of Maasai pastoralists are involved in these activities as their primary sources of income. Around 14.7% of the respondents stated that running a business is their main livelihood source. This implies that a notable portion of Maasai pastoralists have diversified their economic activities beyond livestock-related occupations by establishing their own businesses.

Table 4.2. Current main livelihood sources of Maasai pastoralists

		Responses		
		N	Percent	Percent of Cases
a	Keeping livestock	22	64.7%	73.3%
	Livestock trading	3	8.8%	10.0%
	Crop farming	2	5.9%	6.7%
	Formal employment	2	5.9%	6.7%
	Running a business	5	14.7%	16.7%
	Total	34	100.0%	113.3%

<sup>a</sup> Dichotomy group tabulated at value 1.

#### 4.3 Livelihood sources respondents wish to engage in the next 10 years

Overall, the percentages reflect the aspirations of Maasai pastoralists regarding their preferred livelihood sources over the next 10 years. Agriculture, small-scale businesses, and handicrafts/artisans products emerge as the most commonly desired livelihood sources, while beekeeping, tourism/cultural activities, and value-added livestock products also garner some interest. The highest percentage, 34.6% of the respondents, expressed a desire to engage in agriculture as an extra livelihood source in the next 10 years. This suggests a potential shift towards crop farming, horticulture, and agroforestry among the Maasai community. Approximately 5.8% of the respondents expressed an interest in beekeeping as livelihood source in the coming years. This implies that a smaller proportion of Maasai pastoralists see beekeeping as a viable alternative for income generation. About 7.7% of the respondents expressed a desire to engage in tourism and cultural activities as an alternative livelihood source. This suggests that a portion of Maasai pastoralists see potential in showcasing their culture, traditions, and offering guided tours to attract tourists and generate income.

The percentage for small-scale business was 26.9%, indicating that a significant number of Maasai pastoralists aspire to establish their own small businesses. This suggests a growing interest in entrepreneurial activities within the community. Approximately 13.5% of the respondent expressed an interest in producing and selling handicrafts and artisanal products. This indicates that a notable proportion of Maasai pastoralists wish to leverage their craftsmanship skills to generate income through the creation and sale of traditional Maasai products. About 11.5% of the respondents expressed a desire to engage in value-added livestock products. This suggests that a portion of Maasai pastoralists see potential in activities such as milk processing, meat processing, and leatherwork to add value to their livestock products and generate additional income.

Table 4.3. Livelihood sources responds wish to engage in the next 10 years

		Responses		
		N	Percent	Percent of Cases
a	Agriculture	18	34.6%	60.0%
	Bee keeping	3	5.8%	10.0%
	Tourism and cultural activities	4	7.7%	13.3%
	Small scale business	14	26.9%	46.7%
	Handicrafts and artisanal products	7	13.5%	23.3%
	Value added livestock products	6	11.5%	20.0%
	Total	52	100.0%	173.3%

<sup>a</sup> Dichotomy group tabulated at value 1.

#### 4.4 Challenges Maasai pastoralists face in livestock keeping

The results in table 4.4 highlight the key challenges faced by Maasai pastoralists in livestock keeping, including prolonged droughts, livestock diseases, inadequate pasture, inadequate water sources, and limited education and extension services. The highest percentage, 24.4%, indicates that prolonged droughts are the most commonly reported challenge faced by Maasai pastoralists in livestock keeping. Droughts can lead to a scarcity of water and pasture, posing significant difficulties for livestock survival and productivity. Approximately 15.4% of the respondents identified livestock diseases as a major challenge. The prevalence of diseases can have detrimental effects on the health and well-being of the livestock, leading to reduced productivity and potential economic losses for the pastoralists. About 21.1% of the respondents highlighted inadequate pasture as a significant challenge. Insufficient availability of grazing land can negatively impact the nutritional needs of the livestock, affecting their overall health and productivity. Similarly, 19.5% of the respondents mentioned inadequate water sources as a challenge. Limited access to reliable water sources for livestock consumption and hydration can be a major hurdle for Maasai pastoralists. Another 19.5% of the respondents reported limited education and extension services as a challenge. This suggests that a lack of access to information, training, and support systems can hinder the ability of Maasai pastoralists to effectively manage their livestock and address various challenges they may encounter.

Table 4.4. Challenges Maasai pastoralists face in their livestock keeping livelihood

		Responses		Percent of Cases
		N	Percent	
<sup>a</sup>	Prolonged droughts	30	24.4%	100.0%
	Livestock diseases	19	15.4%	63.3%
	Inadequate pasture	26	21.1%	86.7%
	Inadequate water sources	24	19.5%	80.0%
	Limited education and extension services	24	19.5%	80.0%
	Total	123	100.0%	410.0%

<sup>a</sup> Dichotomy group tabulated at value 1.

These challenges have significant implications for the well-being and sustainability of the pastoralist communities, necessitating targeted interventions and support to address and overcome these obstacles. Addressing these challenges requires a multi-faceted approach involving the government, Non-governmental organizations (NGOs), and local communities to ensure sustainable livelihoods for the Maasai pastoralists while preserving their cultural heritage.

#### 4.5 Reasons why Maasai pastoralists do not change their livestock keeping livelihood

The percentage for cultural factors was 15.3%. This suggests that a portion of Maasai pastoralists choose to continue their traditional livestock keeping livelihood due to cultural considerations. Cultural factors could include attachment to their cultural identity, beliefs, and practices associated with livestock rearing. Approximately 16.0% of the respondents indicated limited access to education as a reason for not changing their livestock keeping livelihood. This suggests that a lack of education opportunities may hinder Maasai pastoralists from exploring alternative livelihood options or acquiring new skills and knowledge. The percentage for limited access to capital, markets, and technology was 14.6%. This implies that a significant barrier for Maasai pastoralists to transition to other livelihood sources is the lack of financial resources, market connections, and access to modern technologies that could enhance their productivity and profitability. About 18.8% of the respondents mentioned the lack of infrastructure as a reason for not changing their livestock keeping livelihood. Insufficient infrastructure, such as roads, electricity, and water supply, can impede the development of alternative livelihood activities and hinder access to markets and services. Another 18.1% of the respondents reported a lack of skills and training as a barrier. This suggests that the absence of adequate training and capacity-building initiatives may limit the ability of Maasai pastoralists to pursue and succeed in other livelihood options. Approximately 17.4% of the respondents identified limited access to financial services as a reason for not changing their livestock keeping livelihood. This implies that a lack of access to credit, savings, and other financial services may restrict Maasai pastoralists' ability to invest in alternative livelihood ventures.

Table 4.5. Reasons why Maasai pastoralists do not change their livestock keeping livelihood

		Responses		Percent of Cases
		N	Percent	
<sup>a</sup>	Cultural factors	22	15.3%	73.3%
	Limited access to education	23	16.0%	76.7%
	Limited access to capital, markets and technology	21	14.6%	70.0%
	Lack of infrastructure	27	18.8%	90.0%
	Lack of skills and training	26	18.1%	86.7%
	Limited financial services	25	17.4%	83.3%
	Total	144	100.0%	480.0%

<sup>a</sup> Dichotomy group tabulated at value 1.

Addressing these barriers and providing support in these areas can help create an enabling environment for Maasai pastoralists to explore and transition to alternative livelihood sources effectively. Addressing these limitations requires a comprehensive approach that includes investments in education, infrastructure development, access to resources, and targeted training programs. It is essential to work closely with Maasai communities, respecting their cultural values and aspirations, while providing support to diversify their livelihood sources in a sustainable manner.

#### 4.6 Major drivers of Maasai livelihood change and diversification

The percentage for declining livestock productivity is 19.0%. This suggests that a significant motivation for Maasai pastoralists to diversify their livelihoods is the observed decline in livestock productivity. Factors such as droughts, diseases, and other challenges may have led to reduced productivity, prompting the need to explore alternative income-generating activities. Approximately 11.7% of the respondents mentioned economic opportunities as a reason for diversifying their livelihoods. This indicates that Maasai pastoralists recognize the potential for additional income and improved financial stability by engaging in alternative livelihood sources beyond livestock keeping. The percentage for changes in market demand is 17.5%. This suggests that shifts in market demand for specific products or services may be driving Maasai pastoralists to diversify their livelihoods in order to meet emerging market needs and capitalize on new economic opportunities. About 18.2% of the respondents attributed their decision to diversify their livelihoods to education and exposure. This implies that increased access to education, knowledge, and exposure to different livelihood options have influenced Maasai pastoralists to explore alternative income-generating activities. The highest percentage, 21.9%, indicates that climate change adaptation is a significant driver for Maasai pastoralists to diversify their livelihoods. The impacts of climate change, such as prolonged droughts and unpredictable weather patterns, have likely necessitated the adoption of alternative livelihood strategies to enhance resilience and adaptability. Approximately 11.7% of the respondents mentioned changing social dynamics as a reason for livelihood diversification. This suggests that evolving societal and community structures, along with changing aspirations and values, may influence Maasai pastoralists to explore new income-generating avenues.



Table 4.6. Major drivers of Maasai livelihood change and diversification

		Responses		Percent of Cases
		N	Percent	
a	Declining livestock Productivity	26	19.0%	86.7%
	Economic opportunities	16	11.7%	53.3%
	Changes in market demand	24	17.5%	80.0%
	Education and exposure	25	18.2%	83.3%
	Climate change adaptation	30	21.9%	100.0%
	Changing social dynamics	16	11.7%	53.3%
	Total	137	100.0%	456.7%

<sup>a</sup> Dichotomy group tabulated at value 1.

These factors collectively contribute to the motivation and decision-making processes of Maasai pastoralists as they seek to expand their income sources and adapt to changing circumstances. It is important to note that not all Maasai pastoralists are diversifying their livelihood sources, and there are still many who maintain a strong attachment to their traditional way of life. The decision to diversify or change livelihood sources is often influenced by a combination of these factors, with varying degrees of impact depending on individual circumstances and opportunities.

#### IV. CONCLUSION

Maasai pastoralists have a range of livelihood sources, with livestock keeping being the dominant one. However, there is a growing interest in diversifying livelihoods due to factors such as declining livestock productivity, market changes, climate change adaptation, and economic opportunities. This highlights the need for targeted support and interventions to overcome challenges faced by Maasai pastoralists, including droughts, diseases, inadequate resources, and limited access to education and infrastructure. There is potential alternative livelihood options such as agriculture, beekeeping, tourism, small-scale businesses, handicrafts, and value-added livestock products. These options not only provide income but also contribute to cultural preservation and sustainability. To effectively support Maasai pastoralists, it is crucial to involve the community in decision-making processes and provide them with support, resources, and capacity-building initiatives. Collaboration between stakeholders is vital for implementing initiatives that promote livelihood diversification and ensure the well-being and sustainability of the Maasai pastoralist community. Overall, addressing these findings can help create an enabling environment for Maasai pastoralists to pursue alternative livelihoods successfully.

#### V. ACKNOWLEDGMENT

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