

## The impact of educational and religious institutions on the livelihood strategies and systems of Pastoral Maasai in Monduli District

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**ABSTRACT:** Religious institutions may be agents of advocacy, funding, innovations, empowerment, social movements and service delivery. This paper attempts to investigate the impact of religious and educational institutions in the livelihoods of the pastoral Maasai. The study was conducted in Monduli District. A cross-sectional design was adopted whereby structured questionnaire was administered to collect primary data. Secondary data were collected from District, religious and educational institutions' offices. A sample of 140 respondents was drawn from the population. The Statistical Package for Social Sciences software was employed for data analysis. From the findings it was observed that religious and educational institutions play their roles in changing the livelihood of the pastoralists by establishing and supervising various socio-economic activities aiming at poverty reduction. These projects include formal education and health services, water supply, food security and income generating activities. Participatory approach is adopted for the sustainable development projects. The opinions of beneficiaries were sought and it was found that religious and educational institutions had brought positive changes on the livelihoods strategies and systems of the pastoralists. It is recommended that religious and educational institutions and other development activists should introduce similar interventions for other tribal people particularly the Barbaig, Hadzabe and Sandawe. Their livelihood patterns need to be changed because of the changing environment.

**KEYWORDS:** Religious institutions, systems, development activists, pastoral.

### 1 INTRODUCTION

Pastoralists can be defined as those communities who derive their living primarily from the management of livestock in rangelands and engage in transhumance practices as a consistent means of existence. Rangelands are those areas where limitations such as climate restrict the use of land to extensive grazing of natural pastures rather than cultivation of crops (Alkire, 2004).

At the same time policies, institutions, recent changes and processes are affecting the Maasai livelihood patterns, trends of migration and food security. Population increase, declining resource base and impact of economic policies have negatively affected their livelihoods. Maasai pastoralists are now increasingly relying on constructing a diverse portfolio of activities and income sources in order to survive and improve their standard of living through coping or adapting new strategies hand in hand with acceptance of new or modern source of institutions and practices (Cost, 2003).

Among the most important social institutions are religion and education (Sahil, 1997). In order to achieve the purpose of attaining education and in realization of its importance, the Maasai are now building schools for their own children. Generally, pastoral Maasai are receptive to modern education, though with some exceptions as to girls' schooling, but the inability of the education system to adapt itself to their conditions has made it difficult for them to fully participate (Sahil, 1997).

Again, development activists express the need for better integration of the Maasai into the modern world. Generally educational and religious institutions are seen as the most important tools to this end, but the views on education differ

greatly between pastoral groups. A minority tend to consider education as useless or even hostile to their own cultural values. They tend to take their sons out of school so that they can herd and girls are taken out of school in order to be married. Groups that are very much affected by external threats tend to consider education as an important tool to look for better paid employment opportunities outside the pastoral Maasai (Alkire, 2004).

Hall (1975) contended that the level of illiteracy was very high among the Maasai and this affected the ability to have access to information which is critical to empowerment. They remain unaware of local issues concerning politics, government, markets and this makes them vulnerable, isolated and weaker politically and socially. This in turn tends to have negative impact on their livelihood. Education is an important ingredient in development initiatives and as far as changes are concerned, the change agents find it easier dealing with literate community.

Religious institutions may be agents of advocacy, funding, innovations, empowerment, social movements and service delivery. Some observers argue that conversion to Christian religion has contributed to the weakening of the indigenous pastoral institutions. This study seeks to assess the impact of education and religion in changing the livelihoods of the pastoralist Maasai.

There is a long standing controversy over the role of religion in social change. Haralambos (2000) claims that religious ideas and systems can have a considerable effect on economic development. It is a critical factor in civil society support for development priorities. Pastoral livelihoods depend critically on relationships with other social groups in terms of resource, services and options for livelihood diversification (Kijanga, 1977).

Despite the religious efforts as far as education is concerned, there is little information on the impact of these efforts on the pastoral Maasai in Monduli district. This paper was set to provide more information on the impact of the religious initiatives in education to pastoral communities.

## **2 METHODOLOGY**

### **2.1 STUDY AREA AND JUSTIFICATION FOR ITS SELECTION**

Monduli District is among of the six Districts of Arusha Region. Others are Arusha Municipality, Ngorongoro, Meru, Longido and Arumeru. It is bordered by Arumeru District to the east, Ngorongoro and Karatu Districts to the west, Mbulu and Babati Districts to the south, Simanjiro District to the south east and Longido District to the north. Administratively, the District is divided into three divisions i.e. Manyara, Makuyuni and Kisongo. It has 11 wards and 41 villages. The District has an area of 6 419 sq km of which 6 291 sq. km. is land area. About 3 984 sq. km is grazing land while 1054 sq. km. is arable land and 375 sq. km. is under forest. Water covers 128 sq. km.

Monduli District has been chosen because of the presence of a great number of actors involved in socio-economic activities that facilitate the development of the Maasai pastoralists through different approaches. Among these, include church based-groups which are playing a key role such as provision of assistance in education. Again in the District, boarding schools are built in areas where there are many pastoralists as a way of ensuring that pastoral children continue attending schools when their families have to move with the livestock during drought conditions. More than 80% of students in these schools are Maasai. This raised the need to study empirically about the role played by educational and religious institutions in changing the livelihood systems of the pastoralists Maasai.

### **2.2 RESEARCH DESIGN**

A cross sectional research design was used. This research design enabled the researcher to collect data from different households at a single point of time. The design was useful for this study given limited resources (time, finance and resources available). In addition, the method gave room to make comparisons of the responses among different groups of respondents to see how dependent variables relate to independent variables (Bailey, 1994).

### **2.3 SAMPLE AND SAMPLING PROCEDURE**

For the household survey, ten sample villages were purposively selected covering the two major zones: the highlands and the lowlands. The sample villages were purposively selected to cover a wide range of activities and interventions done by religious and educational institutions on the livelihoods and production systems. The villages selected include Emirete,

Mfereji, Losirwa, Enguiki and Mlimani A (highland zone). Others were Silalei, Ngarashi, Migombani, Kigongoni and Mbuganni (lowland zone).

A range of sampling methods including livelihood analysis was applied as a footing step to the study. These helped to identify wealth groups and livelihood typologies that acted as a sampling frame. The exercise was conducted in all ten sampled villages and 10% of the total households were chosen in each village using village registers in order to provide a sampling frame. The final result was the identification of three wealth groups (“rich”, “medium” and “poor”). The rich households were a relatively small group, covering about 12% of the total households. The medium households constituted about 36% of the households, with few assets to draw and the poor households made up more than half of the total population (52%).

Livestock possession was listed as the most important determinant of wealth. The Maasai are regarded a “poor” when they own below 100 cattle or “medium” when they own between 100 and 500 cattle. Those owning more than 500 cattle are regarded as rich. Possession of grazing land and crop production land was also considered as the most important determining factor of wellbeing. The sample households for this study were therefore, taken randomly from the list of households under each group resulting in a sample size of 140 villagers. Ten educational and religious institution representatives were also purposively selected taking into consideration the roles and responsibilities they have in their respective institutions making a total of 150 respondents (17 from the rich, 50 from the medium, 73 from the poor and 10 education and religion representatives). The purpose of wealth ranking was to ensure that the sample drawn represent the full range of livelihood circumstances in the study area.

## **2.4 DATA FOR THE STUDY**

This study has benefited from both primary (own survey data) and documentary collected between 2008 and early 2009. The details on the methods and types of data are presented in the subsequent subsections.

### **a) Semi-structured interviews**

At the household level, a detailed questionnaire was administered to a total of 70 households. The questionnaire sought to elicit a set of information that would help in analyzing the role of educational and religious institutions and the benefits accrued from various development interventions in different programmes and projects aiming at changing the livelihood systems (i.e. increased income, increased well-being, reduced vulnerability, improved food security, improved health, more schools and more sustainable use of natural resources). The questionnaire constructed encompassed issues of livelihood household data such as assets (physical, financial, social, human and natural assets), housing conditions, source of water, number of meals per day, type of toilet, access to social services (health, education) and household sources of energy.

### **b) Documentary Review**

The primary data collected were complemented by documentary information collected from different sources including:

- (i) The Monduli District Education Office: Collected data on enrolment rates, ratios, school performances and number of schools.
- (ii) The Monduli District Agricultural and Livestock Development Office: Obtained data on livestock and crop production, livestock diseases and availability of water for livestock. These were useful in analyzing the trends in levels of production.
- (iii) The Evangelical Lutheran Church of Tanzania Office: Obtained useful data on the projects and programmes implemented and supervised by the church. They include projects related to income generating activities aiming at poverty reduction.
- (iv) Arusha Archdiocesan Integrated Development and Relief Office: Collected data or issues related to HIV/AIDS and health care projects.
- (v) The World Vision Tanzania Office: Obtained useful data on relief, advocacy and health provision programmes and projects.

## 2.5 METHODS OF DATA ANALYSIS

Both qualitative and quantitative techniques were used to analyze the data. For more precise analysis, computer-based Statistical Package for Social Sciences (SPSS) was used. Descriptive statistics were employed to present the results.

## 2.6 CONCEPTUAL FRAMEWORK

The study used the Sustainable Livelihood framework. Chambers and Conway (1992), define livelihood as comprising the capabilities and activities required for a means of living. This framework helps us to identify and value what people are doing to cope with risk and uncertainty, make the connection factors that constrain or enhance their livelihoods on the one hand and policies and institutions in the wider environment and identify measures that can strengthen assets, enhance capabilities and reduce vulnerability. The starting point is the vulnerability context within which people operate. Attention is next given to assets people can draw upon for their livelihoods. Assets interact with policies, institutions and processes to shape the choice of livelihood strategies. These in turn, shape the livelihood outcomes, which are often the type of impact people are interested in. However, these outcomes are not necessarily the end point, as they feed back into the future asset base.

The analysis of vulnerability context considered the shocks and trends (animal diseases, population pressure, drought and shortage of land) in pastoralist production system, emergence of new livelihood strategies (for example farming, trading activities, formal employment) and the benefit of educational and religious in changing the pastoralist livelihood systems.

At the village level, the vulnerability indicators included lack of infrastructure ( for example year passable roads) lack of schools, lack of health facilities and underprivileged access to water sources. Household income levels; access to livelihood assets; household structure (construction materials), toilet facilities, energy used by the house and food security were used as indicators for the household vulnerability.

The analysis of livelihood assets involved measurement of basic social assets that people in the study area have in their possession. These assets were considered as “capital” base from which livelihood is constructed. The study considered a wide range of asset portfolio (including water, land, livestock holding, economic and financial assets) which is essential for the pursuit of any livelihood strategy.

Access to financial capital was assessed from the ability of the household to save and borrow from formal organizations (example banks) and informal structures (example relatives) and ownership of liquid assets such as livestock.

Access to social capital was measured using indicators such as membership to organizations, social relations and associations and reciprocity. The access to human capital was measured from the number of illiterate people, education level and number of people with formal employment. Among others, livelihood strategies of the pastoralists – natural resources, diversification and intensification were considered to be key livelihood strategies in the study area.

The livelihood outcomes were measured using different indicators, including secured access to water, increased schools, improved health facilities, improved food security, increased income, good housing and even maintenance of cultural assets, and thus have a feedback effect on the vulnerability status and asset base.

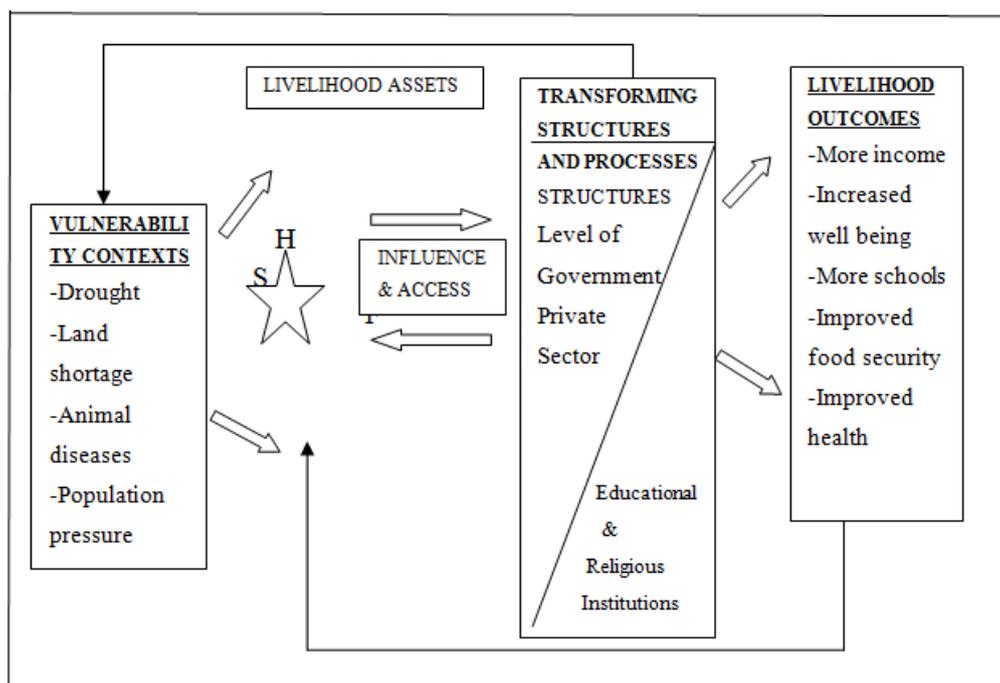


Figure 1: Conceptual framework

Source: Carney, D. et al (1999: 9).

**Key:**

- H = Human Capital (skills, knowledge, ability to labour and good health to pursue different livelihood strategies)
- F = Financial Capital (financial resources which are available)
- P = Physical Capital (infrastructure and production equipment to enable people to pursue livelihoods)
- S = Social Capital (social resources upon in pursuit of livelihoods)
- N = Natural Capital (natural resource stocks from which resources are available)

**3 RESULTS AND DISCUSSION**

**3.1 CHARACTERISTICS OF RESPONDENTS**

**a) Age and sex composition**

Age and sex are important variables in examining the characteristics of population because the life of the pastoralist Maasai is well ordered through a series of life stages which are determined by age and sex. The age set is marked by specific duties and privileges (Hollis, 1976). Age and sex provide chances to compete in labour force and determine entry into schools (Shyrocks and Siegel, 1976:13). Age also saves as a base in population growth (Kpedekpo, 1998).

The Maasai males are rigidly separated into five groups: child (Ileyiok), junior (Isipalio), warrior (Irbarnot), junior elder (Irmuran) and senior elder (Irmorwak). Maasai females are categorized in four age groups which are ndoiye, ndito, sangiki and yeyo or kokoo. Maasai also follow a strict division of labour that is organized on age group and gender line (Kpedekpo, 1982).

**Table 1: Distribution of male respondents by age (n=70)**

Age (years)	Frequency	Percentage
18 – 20	10	14.7
20 – 39	15	35.7
39 – 49	17	24.7
49 – 59	11	15.7
59 - 69	7	10.0
<b>Total</b>	<b>70</b>	<b>100.0</b>

Table 1 show that most of respondents are middle age between 20-59 (60.4%). From the findings obtained, this age group is comprised of those pastoralists who are energetic and are active in productive activities including looking after cattle.

**Table 2: Distribution of female respondents by age (n=70)**

Age (years)	Frequency	Percentage
15 - 20	18	25.7
20 - 39	28	40.0
40 - 60	16	22.9
70 - 100	8	11.4
<b>Total</b>	<b>70</b>	<b>100.0</b>

Table 2 shows female respondents by age. Again most female respondents (40%) had their age between 20-30 years, a group which is also active in production activities. Tables 2 and 3 show that equal representation of both genders were taken into consideration during sampling. Gender is central for livelihood analysis in the household because gender relations show how household members play different roles within the household.

### c) Marital Status

Another important aspect in analyzing the characteristics of respondents is marital status. In Maasai community again, apart from age, labour force is dictated by marital status. In this study marital status is classified into four categories: married, single, divorced and widowed. Married refers to legal union between two or more partners, whether religious, civil or traditional. Single refers to all those who are permanently separated and widow refers to a woman or man whose permanent sexual partner has died.

**Table 3: Distribution of respondents by marital status (n=140)**

Marital status	No. of respondents	Percentage
Married	120	84.7
Single	12	9.3
Widowed	7	5.3
Divorce	1	0.6
<b>Total</b>	<b>140</b>	<b>100.0</b>

Table 3 shows that majority (84.7%) of the respondents were married. Marriage in Maasai community has a significant role. While the Maasai men are responsible for looking after cattle, water and grazing lands, women form a very important labour force for household activities. The study observed that women have the responsibility of collecting water for domestic use and for calves. Also, it is the duty of a Maasai woman to construct clusters of huts or bomas. Until recently, divorce was not part of the Maasai culture.

### d) Educational level

Education whether formal or informal is the most important means to obtain equal access to knowledge, skill, jobs and participation in wider society (Murphy, 1967). The findings on Maasai's level of education reveal that their level of education is low to the extent that most of them (64 %) do not know how to read and write. Illiteracy is higher among females. Due to

the low level of education among the pastoralist Maasai, a very insignificant number of them are employed in public service. As a result non pastoral outsiders make most of the decisions at district level.

**Table 4: Distribution of respondents by sex and level of education (n=140)**

<b>Level of education</b>	<b>No. of respondents</b>	<b>Male</b>	<b>Female</b>	<b>Male percentage</b>	<b>Female percentage</b>
No education at all	90	20	70	14.3	50.0
Primary education	20	17	3	12.1	2.1
Secondary education	10	8	2	5.7	1.4
Tertiary education	8	6	2	4.3	1.4
Adult education	7	5	2	3.6	1.4
University level	5	3	2	2.1	1.4
<b>Total</b>	<b>140</b>	<b>59</b>	<b>81</b>	<b>42.1</b>	<b>57.7</b>

From Table 4 one can conclude that the low level of education among the pastoralists Maasai is due to the Maasai tradition which does not allow children to attend school because of their role in the pastoralist economy. Girls were supposed to be married while boys were looking after cattle. Parents have to move from one place to another looking for water and pastoral lands. The findings concur with those of Figholi (1992) who contended that education sector among pastoral communities in Africa has been neglected completely.

### **3.2 LIVELIHOOD ANALYSIS**

#### **a) Livelihood assets**

The results of quantitative analysis of the available key livelihood assets as revealed from the household surveys are summarized in Table 5.

**Table 5: Household major assets (capitals) (n=140)**

<b>Asset ownership</b>	<b>Frequency</b>	<b>Percentage</b>
Livestock	101	72.1
Agricultural land	21	15.0
Both pastoral and agricultural land	7	5.0
Other assets	11	7.9
<b>Total</b>	<b>140</b>	<b>100.0</b>

As can be seen from Table 5, there is a variation in terms of number of dominant assets owned in the households. In other words, access to livestock (72.1%) is the major determinant of household livelihood in the villages studied. Often the access to livestock and grazing land are inseparable: Livestock keeping requires grazing land. This suggests high value of land in terms of its contribution to household wealth.

About 72.1% of the households in the sample villages engage in livestock keeping (cattle, goats, sheep, and donkeys). Livestock numbers are quite high, hence livestock keeping is an important source of livelihoods. Livelihood platform of the poor households is less favourable in comparison to the medium households. The study revealed that the poor had limited access to natural resources such as land, human capital and labour, physical production capital such as livestock, and to social capital such as membership of local societies and associations.

The limitations in the livelihood platforms mean that the poor are thus most likely to be hit by production problems such as labour shortages, animal diseases and droughts. In addition, when such problems occur, the poor households are also the ones that are most likely to be hit hardest, as they do not have the resource base to cope with shocks or to overcome short

periods of crisis. Poor households often experience a critical period at the peak of rainy season, when they have fully exhausted their household reserves, food shortages, disease prevalence and cash demands are high.

Access to grazing land is an important constraint in livestock keeping. Livestock keeping is fully dependent on access to grazing land. As a result access to grazing land is one of the major determinants of household wealth in the studied villages. The income of most households' throughout the year depends on cattle. The higher strata households are those with access to livestock.

Lending and borrowing mechanisms were also ranked as another important form of social capital. In the villages studied for example, social interactions are primarily dependent in collective action; income generating groups some of which the membership of which is dominated by middle income households. In the villages visited kin arrangements and drawing on social networks were strongly stressed. Collective action, good social relationships, mutual support and traditional ceremonies are important mechanisms to support the local livelihood strategies. Collective action, traditional ceremonies and kin arrangements crosscut social strata and result in higher levels of social capital for poor households (Table 6).

**Table 6: Weighted percentages for the common social assets (n=140)**

Type	Frequency	Percentage
Traditional ceremonies	50	35.0
Collective action	40	31.0
Kin arrangements	20	12.0
Lending and borrowing	14	10.0
Village meetings	9	8.0
Religious meetings	7	4.0
<b>Total</b>	<b>140</b>	<b>100.0</b>

In general, vulnerability in terms of access to physical resources increases from the rich to the poor. Some villages like Esilalei for example suffer the most droughts for livestock and have less favourable conditions for crop production. Likewise, livelihoods in villages in Monduli Juu are less vulnerable as the households in this area own more livestock and some pieces of land for crop production.

### 3.3 ACTIVITIES OF EDUCATIONAL AND RELIGIOUS INSTITUTIONS IN MONDULI DISTRICT

Evangelism activities are the backbone of most churches in the District. Evangelists offer services in more remote congregations and parishes. The evangelist activities include preaching, teaching, lead choir, funerals and administration of the congregations. Often parish workers lead women groups and support spiritual life in the parishes. Other religious denominations operating in the District include the Pentecostal Churches and Islam. Their contribution on the livelihoods of the pastoralists is not so significant.

Education is one of the basic tools for development and as such the government of Tanzania has invested heavily into the sector since independence. In 1974 the government launched the universal primary education in order to eradicate illiteracy amongst its populace; major goals were to provide education to all children aged 7 to 13 and reduce adult illiteracy from 69% to 5%.

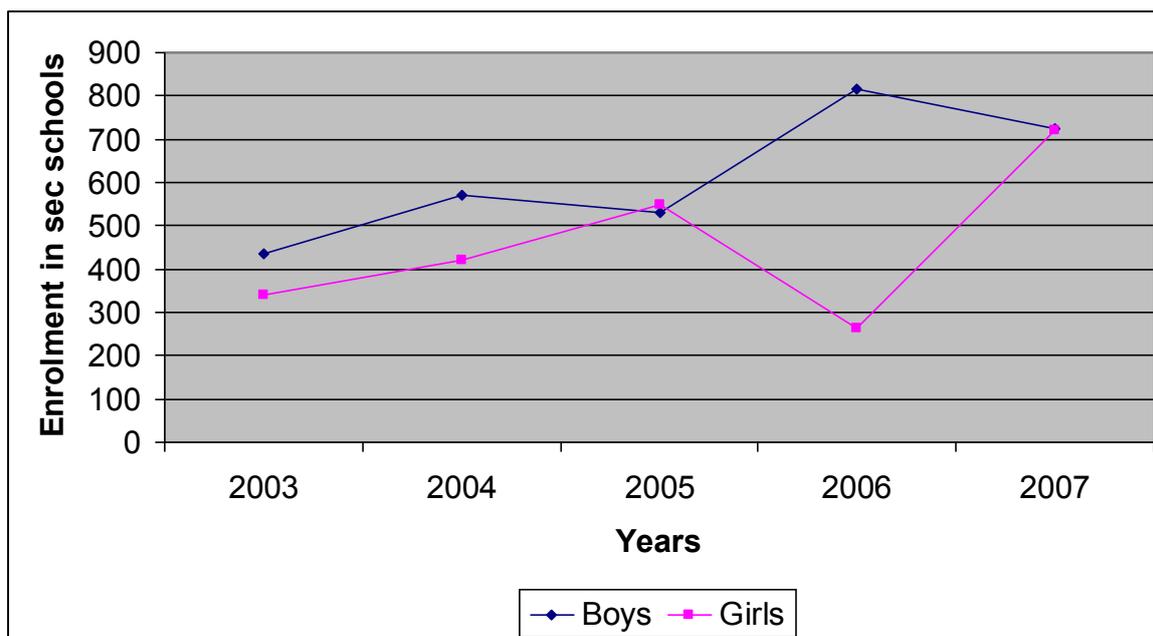
Education and religion are organized social efforts aimed at bringing change of human behavior that would otherwise not occur naturally. These institutions are strengthening Maasai livelihoods and making them more secure and sustainable through initiating and supervising a number of interventions. The following are some of the active religious institutions in the District.

### 3.4 THE EFFECTS OF RELIGIOUS AND EDUCATIONAL INSTITUTIONS IN CHANGING THE LIVELIHOODS OF THE PASTORALISTS MAASAI

Field data in the villages studied indicate that there is a remarkable positive change in the livelihood systems brought by educational and religious institutions. Positive changes seemed to be more pronounced on socio-economic aspects such as water and sanitation, education, health, advocacy and spiritual development (Evangelism). Some changes were also noticed in the agricultural and livestock sub-sectors.

**a) Provision of education**

Before the interventions of religious and educational institutions in the villages studied, education infrastructure was virtually non-existent. Most of the sampled household interviewed (80%) said that classes were held in mud huts without latrines and girls could not attend school. Only half of the children enrolled in schools, and only half of those attended. Even worse, only one percent of the children passed the national examinations. This was further evidenced by respondents' level of education and the level of illiteracy in the District which is 64%. Interventions done by religious and educational institutions had raised the enrolment rates in primary schools with little gender differential. It was noted that estimates of the retention rate (the population of children enrolled in standard one who stay through standard seven) and school leaving showed improvement (80%).



**Figure 2: Students enrolment in secondary schools from 2003-2007 by sex**

Expansion of primary schools in the villages studied rose from 3.5% in the year 2000 to 15.7% in the year 2007. Primary teachers increased from 185 in the year 2000 to 556 in 2007, with a ratio of 1:36 teacher – pupil. In the studied villages almost all school age children were enrolled in school, 87% attend, and more than 40% are selected to attend government schools. In the villages studied education is widely acknowledged as the key to reduce poverty. This information was supplemented by District Municipal data which showed that estimated primary enrolment rose from 3 859 (30.5%) in the year 2000 to 22 550 in 2007, though in the year 2000 the enrolment of boys was 6% higher with 2214 males compared to 1712 females (Figure 2).

The number of primary school facilities in the villages studied also showed improvement. Classrooms available were 285 (58%) of the total requirement, teachers houses were 298 (27%), desks were 7193 (94%) and pit latrines were 325 (40%) of the total requirement. But the illiteracy rate by sex in the villages was very high among female (74.6%) as compared to men (25.6%). Child Sponsorship Programmes done by religious and educational bodies in the study area have enabled children to have better care and bright future. Their livelihood opportunities are improved and increased. Fifty children in the villages studied were the beneficiaries of this Programme. The Sponsorship ends when they reach the level of form four (ELCT) and university level (CIT). It was further noted by this study that some of the sponsored children fail to continue with their education after the support ceases because most of the parents cannot afford the high costs of education.

Much emphasis is also placed in school building programmes. Moringe Girls Secondary School (Mlimani village), Maasai Girls Lutheran Secondary School in (Olarash village) in Monduli Juu, Enyorata Secondary School in Enguikki village are among the outcomes of ELCT Arusha Diocese interventions and AAIDRO respectively. There are number of pre-school centres with more than 215 children in all the villages visited.

## b) Health Provision

Before any interventions were done by religious and educational institutions, 90% of the interviewed villagers said that traditional healers were the first source of health care in the villages to most people. Almost half of the children were suffering from malnutrition and child bearing women were not immunized and preventable communicable diseases infected almost 89% of the villagers and few used mosquito nets.

After interventions, data from the villages studied showed that less than 3% of children suffer from malnutrition, the incidence of communicable diseases has been reduced from 89% in the year 2000 to 23% (2007) and more than 80% of pregnant women and children were immunized. In the villages visited, areas of special emphasis have been constructing health centres, clinics, rehabilitation and construction of maternity wards. Equipment and medical supplies have also been provided to all health centres and dispensaries in all villages in the study area. Villagers have also been trained in primary care, ten counselors work with HIV and AIDS patients (the infection rate is 14% at Mto wa Mbu ward) and eight birth attendants have been trained in modern hygiene techniques.

ELCT had four dispensaries in the study area (Kimokouwa, Ketumbeine, Eluai and Gelei) and AAIDRO under RC Church has two dispensaries and one hospital at Mto wa Mbu. AAIDRO is also providing handicapped services at Selela village. ELCT and AAIDRO are also providing VCT services in all the villages studied.

Health indicators in the study area also included infant mortality rate, under five mortality rates, immunized children (12 – 23 months) against measles and access to toilet facilities. District estimates showed that out of 952 live births in 2007 there were two live deaths (105 deaths per 100 000). Out of 1897 children born alive, there was an occurrence of 93 deaths (the death ratio of 49 per 100 000 live births). Immunization of children under – five and child bearing mothers in 2007 covered 85% of the total population in the study area. Field data indicate that 53.1% of the villagers in the study area had access to pit latrines toilets, 3.7% flush toilets and 43.2% had no toilets.

## c) Water and Sanitation

It was noted that before religious and educational interventions in the villages studied, villagers had no clean and potable water. Money invested by religious and educational bodies in developing infrastructure to provide easy access to clean water has lifted the villagers from impoverishment. It was mentioned by villagers that before the interventions in villages, life was difficult for women and children who had to walk long distances to fetch water from dirty dams and wells. The health of the villagers was poor and most of them were infected with water-borne diseases. ELCT Diocese of Arusha had built and handed over water projects in two villages in the study area while AAIDRO had handed water projects in three villages.

In the villages studied 44.4% of the villagers had access to piped water, 38.3% had access to spring water and 17.3% had access to surface water (lake, rivers, and stream). These data were also supplemented by Monduli District data as shown in Table 8.

**Table 7: Number of people served with water by Division 2007**

Division	Population	Population served with water	Number of villages	Villages with access to water	Percentage
Makuyuni	19 833	13 605	9	5	55.5
Manyara	28 354	21 467	7	4	57
Kisongo	63 850	55 202	22	13	59
<b>Total</b>	<b>112 037</b>	<b>90 274</b>	<b>38</b>	<b>22</b>	<b>57.2</b>

Table 8 shows that more than half (57.2) of the villages have access to water for both livestock and home consumption. Efforts done by religious and educational institutions have enabled villagers to access bore holes, dams and other existing water schemes.

## d) Improved food security

The value and benefits of religious and educational interventions on the livelihoods of the pastoralist Maasai were also pronounced in aspects of food production and food security. Before the interventions of religious and educational institutions in the area of the study, most of the villagers had limited access to water and farming techniques which left most of them vulnerable to drought and struggling with food insecurity. More than 23% of the households had no enough food to last all year round and most of the children were malnourished. When asked on the food situation 42% of the villagers

interviewed had the opinion that food security has improved because of better farming techniques and seed which provide a better yield. It was evidenced that under Area Development Programme (ADP) which is implemented by WVT some farmers had started using manure and had been trained on pest control and animal husbandry. Loans which are provided under ADP had secured families in the villages of the study area with 25 ox-ploughs.

Study analysis on the number of meals taken by the household per day indicates that 18.5% of the household members take three meals a day, 77.5% take two meals a day, and only 3.7% complained to take one meal a day. Study findings also show that 22.2% of the villagers had never experienced food shortages between 2000-2007 and only 8.6% had food problems in that period. AIDRO also provide nutritious food for the PLWHA in all the villages studied. The statistical data on food production were also available from the administration in the District.

The current study also used the District data to show dynamics of food production and food security. District data indicate that the yields of major food crops (maize, beans, paddy, wheat and banana) have increased in terms of hectares and tonnage.

**Table 8: Major food crop production in the study area 1989/90-2006/07**

Crop	1989/90		2006/07	
	Hectare	Tons	Hectare	Tons
Maize	7 295	14 925	3 210	14 887
Beans	4 763	8 830	8 830	18 115
Paddy	1 350	3 319	3 000	14 420
Wheat	700	10 687	700	13 190
Banana	14 700	98 670	950	10 687
<b>Total</b>	<b>28 808</b>	<b>136 431</b>	<b>13 690</b>	<b>44 479</b>

Although there have been fluctuations both in terms of hectare and tonnage there is a slight improvement of food production. In the study villages, it was noted that despite the agricultural potential in some villages such as Emirete, Mfereji, Losirwa and Mgombani, there appears to be little effort to improve this sector because the main agricultural interventions have so far focused on supply of seeds and improved livestock management.

#### **e) Improved houses**

Before interventions of educational and religious institutions, the pastoralist Maasai were living in traditional houses (small clusters of huts) made of stick and cow dung. These huts were not permanent and included enclosures for cattle. After interventions made by religious and educational institutions, the housing conditions of the pastoral Maasai have improved. In the villages visited 30% of the houses were built with bricks and iron sheet, 4% were concrete and 66% were made of mud and grasses.

#### **f) Income generation activities**

In order to assist villagers to gain access to greater income, religious and educational institutions have helped villagers in the formation of income generating groups and some villagers have been trained on various life and entrepreneurship skills. Income generating activities found in the studied villages included tailoring, breeding projects, dairy goat projects, poultry and flour mills. Religious and educational efforts had enabled villagers to establish community based organizations (CBOs). These organizations provide ongoing support to local development. Religious and educational efforts also had enabled villagers to establish saving and credit societies such as Monduli Women Lutheran SACCOS and Monduli Women Catholic SACCOS (Single Mothers Group) which have been established and registered by the government so as to assist villagers in developing their small enterprises.

Asked on the contribution of the income generating projects 65% of the villagers particularly women said that their conditions were steadily improving, and situations which only a few years ago were unthinkable are taking place as a growing norm. Women take part in discussions and they participate in running and supervising various projects.

#### **g) Awareness-raising**

Religious and educational institutions through their advocacy units are also involved in training of the pastoralists on child rights; gender mainstreaming, gender policy, girl child education and FGM eradication through workshops, seminars and exposure learning visits. Several training workshops are conducted to enhance the capacity of the community members.

Educational and religious/institutions are changing the livelihoods of the pastoralist Maasai hence, increasing their wellbeing and their livelihoods. They are strengthening the livelihood security by enabling them to build on their assets and capabilities which are the basis of the household livelihoods.

## 4 CONCLUSIONS AND RECOMMENDATIONS

### 4.1 CONCLUSIONS

Study findings indicate that there is a remarkable positive outcomes in the pastoralist livelihood systems in Monduli District brought by interventions done by religious and educational institutions. Positive outcomes have been pronounced on socio-economic aspects such as water and sanitation, education, health, improved food security, good housing, awareness raising and income generating activities. In this manner educational and religious institutions are improving the wellbeing and the livelihoods of the pastoralist Maasai. Educational and religious institutions are strengthening the livelihood security of the pastoralist by enabling them to build on their assets and capabilities which are the basis of the households' livelihoods.

### 4.2 RECOMMENDATIONS

Based on the findings and conclusions, the following are the recommendations:

Religious and educational activities are transforming the livelihoods of the pastoralists Maasai in Monduli towards development. There is a need for religious and educational institutions to introduce similar interventions to other tribal people, especially the Barbaig, Hadzabe, Sandawe, Tatoga and Taturu.

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