

**NUTRITIONAL AND HEALTH CHALLENGES OF PASTORALIST
POPULATIONS IN KENYA****Wayua FO^{1*}****Francis Wayua**

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ABSTRACT

This paper examines nutritional and health challenges facing pastoralists who inhabit fragile rangelands and are one of the most nutritionally vulnerable population groups in Kenya. The review is based on a synthesis of literature on pastoralist food security, nutrition and health status and livelihoods in Kenya's rangelands. Documents reviewed included health and nutrition surveys, journal articles, case studies, reports from Non-Governmental Organisations and 'grey' literature. The main nutritional challenge is food insecurity leading to high malnutrition rates. Global acute malnutrition rates for the last five years ranged from 10 to 28%. Nutritional status of pastoralists varies with seasons, with high malnutrition experienced during droughts, which have been worsened by increasing climate change. Micronutrient deficiencies include iron, folic acid and niacin. Pregnant women consume restricted diets in the belief that they will have easier delivery. This leads to low birth weight, estimated at 13% among some pastoral groups. Knowledge of breastfeeding and complementary feeding is poor. Infants are introduced to animal milk from a few days old, which is a risk factor for malnutrition and morbidity. Besides experiencing chronic under-nutrition, pastoralists carry a substantial disease burden and are poorly covered by health services. The main diseases are malaria, respiratory tract infections and diarrhoea. Availability of safe drinking water is a challenge, and pastoralists are frequently affected by water-borne diseases. Sedentarisation also presents negative nutritional consequences to pastoralists including inadequate housing and lack of clean drinking water. Efforts to address the challenges should focus on nutrition education around the importance of appropriate weight gain during pregnancy, benefits of exclusive breastfeeding, and sanitation concerning safe drinking water. At the community level, there should be an integrated approach by all stakeholders implementing health and nutrition interventions in pastoralist areas. At the national level, interventions should focus both on relief and resilience building, and be tailor-made specifically for the pastoralist communities. The nutritional impact of such interventions needs to be established.

Key words: Food security, livelihoods, nutrition, health, pastoralists, rangelands, Kenya



INTRODUCTION

Pastoralists inhabit the arid and semi-arid lands (ASALs) of Kenya, where livestock keeping is the main livelihood activity. However, pastoralism has been seriously affected by worsening climate change. Droughts have become more frequent and severe, and are progressively diminishing pastoralist livelihoods without allowing these pastoralists sufficient time to recover. Contingency plans are generally activated too late to prevent the widespread loss of assets. This often leads to settling of former nomadic pastoralists around urban centres to receive humanitarian assistance. For most pastoralists, droughts over the past few decades have led to a pattern of poverty, food crises and dependence on food relief. Over 75% of the ASAL population live below poverty line and have limited livelihood options, resulting in serious food and nutrition insecurity implications for these communities [1]. Nutrition surveys for the last 10 years showed that Global Acute Malnutrition (GAM) rates in most cases exceeded the emergency threshold of 15% defined by the World Health Organisation (WHO) [2, 3]. The ASALs inhabited by pastoralists are also poorly covered by health services and other essential infrastructure.

This paper reviews the main nutritional and health challenges faced by the pastoralist populations in drought-prone Kenya's ASALs and recommends appropriate interventions to overcome the challenges. The paper is based on a review of literature on pastoralist food security, nutrition and livelihoods in Kenya's ASALs. Documents reviewed included health and nutrition surveys, journal articles, case studies, Government and Non-Governmental Organisation (NGO) reports and the Kenya District Health Information System (DHIS) database. The review aims at highlighting the plight faced by pastoralists in terms of nutrition and health, with a view of stimulating an integrated approach by all stakeholders to address multiple household vulnerabilities, which affect the nutritional status of the population. The findings have important implications for designing health and nutrition interventions for pastoralists in Kenya and other parts of Africa.

MAIN NUTRITIONAL AND HEALTH CHALLENGES FACED BY PASTORALISTS

Food Insecurity

The conceptual definition of food security as used in this paper is that given by the World Food Summit in 1996: "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" [4]. Food insecurity is an endemic problem for pastoralists in the ASALs. There are limited livelihood options. While some families manage with cash income or remittances from family members living in towns, many depend on social protection mechanisms such as relief food, cash transfers and other social safety nets from NGOs and the Government [5, 6, 7]. Relief food is often grain based and requires fuel to cook. Firewood, the main source of fuel, is becoming increasingly scarce and hence expensive in ASAL regions [8]. There is seasonal availability of foods, with pastoralists experiencing low food availability and consequently high malnutrition rates during droughts. Global Acute Malnutrition rates



for the last five years ranged from 10 to 28%, but in most cases exceeded the emergency threshold of 15% set by WHO [2, 3] (Figure 1).

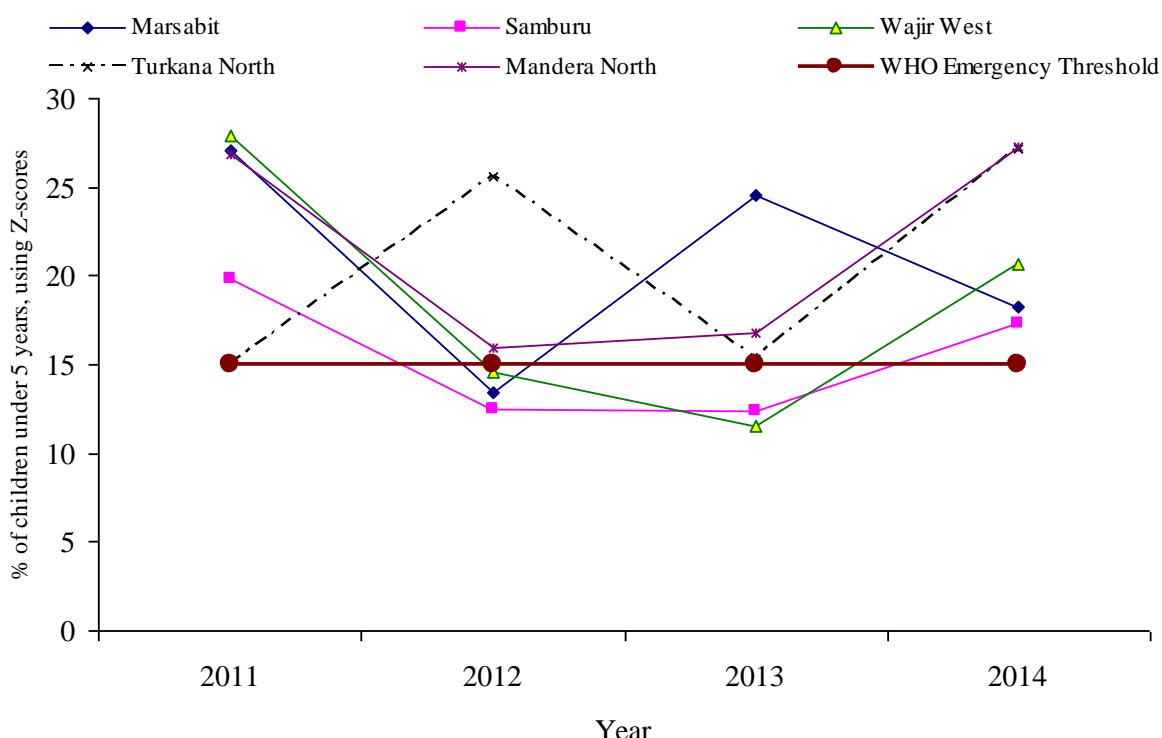


Figure 1: Trends in Global Acute Malnutrition rates in selected ASAL counties in Kenya, 2011 to 2014 [2]

Malnutrition rates have not fallen because of various reasons, including inadequate food intake and poor access to High Impact Nutrition Services (HINI). Access to Community-based Management of Acute Malnutrition (CMAM) services is shunned due to stigma associated with malnutrition. There are also additional barriers to access of other child health care services including limited time available and workload constraints of caregivers. Feelings of shame and discomfort at health clinics have also been reported by mothers of malnourished children in Marsabit County [9]. Pregnant women consume restricted diets with the belief that they will have easier delivery. This leads to low birth weight, estimated at 13% among some pastoral groups [10], which is above the national average of 8% [1]. Globally, low birth weight is estimated at 15% to 20% [11]. Micronutrient deficiencies include iron, folic acid and niacin [1, 2, 12], the main causes being poor dietary diversification, infections such as hook worm and malaria, and food insecurity [1, 2, 12].

Knowledge and Practices of Breast Feeding and Complementary Feeding

Knowledge of breast feeding and complementary feeding in pastoralist populations is poor [2, 13]. One of the greatest challenges faced by health workers is that of encouraging mothers to initiate breastfeeding immediately after birth, preferably within the first hour [1, 2]. Exclusive breastfeeding is often not practiced and animal milk is commonly introduced to infants a few days old after birth [2, 14]. Amongst the Rendille and

Samburu of Marsabit County, for example, goat milk is introduced to infants a few weeks after birth [13, 15]. Common complementary foods include cow and goat milk, porridge and maize meal, potatoes and fruits whenever available [13, 14]. The poor knowledge of breast feeding and complementary feeding is a pointer that majority of mothers had limited knowledge on the nutritional requirements for their infants. This is a risk factor for malnutrition and morbidity among pastoralist infants under the age of six months [2].

Water, Sanitation and Hygiene

Access to water, both for domestic and livestock uses, is severely limited. The average amount of water for household use in most of the ASALs falls below the SPHERE standards of 15 litres/day/person [2,16]. Many households get water from unsafe water sources such as dams, ponds, open shallow wells, rivers and streams. Those in urban areas get tapped water, which is safe. Where improved water systems (boreholes, diesel and solar-powered water points) exist, they are often unreliable, have fallen into disrepair, or water is rationed and users have to queue for hours [17, 18]. Unaffordable diesel generators are commonly used for pumping water. Community water requirements are high and people experience considerable hardship in travelling long distances (more than 20 km) to look for water [2, 18].

Despite obtaining drinking water from unsafe sources, more than two thirds of the households do not treat it before drinking [2]. This increases the risks of water-borne diseases among the populations, as has been frequently reported in various nutritional surveys in the ASALs [2]. This is a major risk factor for diarrhoeal morbidity in children [19]. The water used by livestock and humans in ASALs generally has high mineral content (especially nitrates and copper) and bacteria such as *Salmonella spp.* and *Escherichia coli* which are evidence of faecal contamination [18, 20, 21, 22]. For those who treat the water, the main water treatment methods included boiling, using chlorine-based chemicals (such as *pur* and water guard), traditional herbs and water filters promoted by NGOs [2].

Human Waste Disposal

Proper disposal of human waste is important in any community and should be encouraged to avoid illnesses associated with poor sanitation. Lack of basic sanitary facilities such as latrines poses serious threats to health and ultimately contributes to poor nutritional outcomes. The main waste disposal methods for pastoralists include traditional pits, improved pit latrine, and open defecation in bushes. Various nutrition survey reports show that latrine coverage across most of the ASALs is below 30% [2]. Inadequate disposal of human waste and poor personal hygiene in general is associated with diseases including diarrhoea, which leads to malnutrition [23].

Health and Disease

Common diseases among pastoralists include malaria, diarrhoea, acute respiratory tract infection, pneumonia, worms, malnutrition, and skin diseases [2]. For example, the prevalence rates in children in the ASAL communities ranged from 10 to 60% for malaria, 10 to 40% for diarrhoea, and 10 to 70% for acute respiratory tract infection [2]. These diseases are caused by contaminated water, contaminated foods, poor ventilation, and dusty and windy environment [24]. Low levels of water treatment at household level



and improper disposal of human waste as mentioned above also increases incidences of diarrhoea among children. The diseases have profound influence on nutritional status, mediated by changes in dietary intake, absorption, nutritional requirements (especially for energy and protein) and loss of endogenous nutrients [23]. Health care is sought from public and private health facilities, mobile clinics, Community Health Workers (CHWs), traditional healers and shops [2, 10, 13, 14].

Lack of adequate health personnel is a great challenge in the ASALs. For example, in Turkana County, the doctor: patient ratio is 1: 50,000, against the recommended national average of 1: 1,000 [1]. In the absence of sufficient number of skilled health personnel in the communities, and owing to the many health challenges, CHWs bear a great responsibility of providing health education and basic services to the population, if only to help avert some of the negative health consequences. One of the main areas of focus for these CHWs is maternal and new-born health. On a voluntary basis, the CHWs traverse the rugged terrains under the scorching heat to walk from household to household to provide women with information on family planning, antenatal care, the need to deliver in hospitals, and the importance of immunisation.

The Kenyan government introduced free maternity services in all health facilities, with the aim of reducing maternal and neonatal mortalities. However, the effectiveness of these interventions in ASALs is hampered by lack of access to health facilities, insufficient health personnel, stigma and cultural factors that impede or discourage access to modern health care systems [1, 2, 9].

Effects of Sedentarisation

Sedentarisation, the settling of formerly nomadic pastoralists, has been witnessed in pastoralist communities in the last 50 years as a result of socio-economic, political, demographic, and environmental changes. For example, droughts have led to deaths of pastoralist livestock causing people to become destitute and settle around settlements to receive humanitarian assistance. The need for better education and health services has also caused nomadic pastoralists to settle around urban centres; so is the need to integrate to the national economy. Sedentarisation offers new opportunities to pastoralists such as increased marketing benefits, for example for women who sell milk [25] and access to health services [26]. Several studies, however, report negative social and health consequences of pastoral sedentarisation, including poorer nutrition, inadequate housing, lack of clean drinking water, and higher rates of certain infectious diseases despite better access of settled populations to formal education and health care [27, 28]. Abandoning the pastoral way of life and access to milk and other livestock products was not found to improve health and nutrition status of Gabra women [12].

CURRENT INTERVENTIONS TO ADDRESS THE CHALLENGES

Several nutrition interventions, which have significantly contributed to alleviating some of the challenges, are being implemented by the Government and NGOs in pastoralist areas of Kenya. These include projects on water, sanitation and hygiene, health, food security, livelihoods, disaster risk reduction, among others. There is need for an



integrated approach by all stakeholders implementing health and nutrition interventions in the ASALs so as to effectively address the challenges.

Free maternity services have been introduced in Government health facilities and will see more women in the ASALs deliver in hospitals thus reducing maternal and neonatal mortalities. The percentage of births delivered at health facilities currently stand at 37 % in Garissa, 28% in Isiolo, and 26% in Marsabit, for example, compared with the Kenyan average of 61% [1]. This should, however, be coupled with improved staffing of the health facilities. The “Beyond Zero Campaign” to improve maternal and child health outcomes in Kenya has seen the availability of mobile clinics in arid pastoral areas. Immunisation coverage is high in some areas, for example over 80% in Turkana due to deliberate targeted response interventions by the Government, NGOs and other stakeholders [1, 7].

Other efforts to address food insecurity have been done by the defunct Ministry of Northern Kenya and Other Arid Lands, Arid Lands Resources Management Project (ALRMP), and currently by the National Drought Management Authority (NDMA) and the various County Governments in the ASALs. Research on agriculture, food security and livelihoods is also being carried out by Government research organisations and international NGOs with the aim of boosting food security and consequently nutrition security. However, implementing nutrition and health interventions in ASALs has been constrained by several challenges including the following:

- The vastness of the areas making it a challenge to reach the whole population.
- Insecurity, which negatively affects service delivery.
- Poor infrastructure (poor or no roads, few inaccessible and poorly staffed health facilities, limited telephone and internet connectivity).
- Cultural practices constraining the uptake of some interventions for example, Infant and Young Child Feeding (IYCF) practices.
- Low levels of literacy and education hence the communities' low understanding of critical issues in health and nutrition. This, together with the high poverty levels, negatively affects people's perceptions and uptake of interventions.
- Nomadic lifestyle. People migrate to access water and pasture for their livestock hence the services offered by the government and various agencies do not reach them at all times.

CONCLUSION

This review shows that pastoralists in Kenya's ASALs experience several nutritional and health challenges occasioned by high levels of chronic vulnerability, food insecurity, an inadequate health care system and limited access to clean water and appropriate sanitation. The main nutritional and health challenges include food insecurity, poor knowledge and practices of breastfeeding and complementary feeding, limited access to water and sanitation facilities, diseases such as malaria, diarrhoea and acute respiratory tract infection, and sedentarisation leading to inadequate housing, lack of clean drinking water, and higher rates of infectious diseases.



Efforts to address the challenges should focus at boosting the food security of the pastoralists and promoting HINI such as initiating breastfeeding within the first hour, promoting exclusive breastfeeding for the first six months of life, complementary feeding of infants after the age of six months, immunisation, improved hygiene practices including hand washing, and treatment of acute malnutrition.

At the individual and household level, efforts should be focused on nutrition education around HINI. At the community level, there should be an integrated approach by all stakeholders to address multiple household vulnerabilities which affect the nutritional status of the population. At the national level interventions to boost food security should focus both on short term (relief) and long-term (resilience programmes), and be tailor-made specifically for the pastoralists communities. Further scientific research should be done on the nutritional impacts of the various interventions in pastoralist areas.

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