

The Role of Traditional Knowledge on Food Security: A Case of the Marakwet in Aror Ward, Elgeyo Marakwet County, Kenya c.1800-1895

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Abstract: In the recent years, semi-arid areas in Kenya such as Elgeyo-Marakwet have persistently faced the challenge of severe food insecurity. This paper thus investigated the role of traditional knowledge in food security among the Marakwet in Aror Ward. The study adopted human ecology theory which looks into patterns and process of interactions of human beings and their environment in relation to food production and food security. A descriptive research design was employed. Data was collected using purposive sampling and snow balling method from Marakwet clan elders in Kerio valley and Marakwet highlands. The main instruments of data collection were the interview guide and focus group discussions. The study enumerated major traditional food security mechanisms among the Marakwet people living in Aror Ward in their efforts towards achieving food security. The study established that the Marakwet community had developed their own internal mechanisms to address the issue of food insecurity. This was based on their mastery, perception and knowledge of the fragile ecology. The study recommends that the traditional mechanisms should be bonded with government food security mechanisms in order to realize sustainable food security in the area.

Keywords: Marakwet, Food Security, mechanisms, Traditional Knowledge.

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Introduction

Africa is classified as a food insecure continent and one of the most affected in the world in relation to the effects of drought and famine (Shauri, 2011). Interest on issues related to food security adaptive strategies has increased in the recent past and concerns about the effects of food insecurity on economic development are also on the rise (Kisaka, 2009). According to Wambua (2008), this could be attributed to various factors like over dependency on rain-fed agriculture, population pressure and inadequate economic development in the semi-arid areas. Furthermore, these areas are more vulnerable to food insecurity because their socio-economic activities on food production are tied to rain, thus, checking food production (Tor, 1995). In the same vein, Graaf (2011) posits that semi-arid areas receive rainfall of between 250-500mm per year. Most people in the world live in these areas where their agricultural

production is limited by environmental factors (Winpenny, 1991). With the rising global population there is rising demand of food. Consequently, the people of Aror Ward in Kenya are not spared.

In Kenya, semi-arid lands make approximately 80 percent of the country (FEWS NET, 2004). The main challenge in these semi-arid areas is how to ensure food security is sustainable in environments that are prone to drought and famine (GOK, 2008). These areas have great potential for food production, and can help meet the country's food self-sufficiency goals. If well managed, semi-arid areas can be vital in sustaining food production and food security.

A research conducted by Intergovernmental Panel on Climate Change (IPCC, 2007) established that semi-arid communities need some food security adaptive strategies because their crops are failing and their herd sizes are plummeting thereby affecting their minimum food production needs. GOK (2009) observed that production of food crops such as green grams, cassava, ground nuts, finger millet and sorghum in Marakwet has been gradually declining creating a situation of chronic food insecurity. It is with these serious challenges of food insecurity that this study sought to historically investigate the role of traditional knowledge on food security among the Marakwet living in Aror Ward, from c.1800 to 1895.

Methodology

The study adapted a descriptive research design. Purposive sampling and snow balling sampling technique was used to select the key informants in the area of study. The respondents were clan representatives, men and women. Secondary data, Oral interviews and focused group interviews were used in collecting data. Data collected was recorded through note taking and voice recording. The data was then analyzed and presented in narrative form to describe the role of traditional knowledge on food security employed by Marakwet community in Aror Ward during the pre-colonial period up to 1895.

Results and Discussions

The pre-colonial Marakwet community living in Aror Ward used various traditional food security strategies to arrest food shortage. Based on the interviewed informants, it was established that during the pre-colonial era, proper food security mechanisms were used by the community as discussed.

Cultivation of Millet and Sorghum

The Marakwet are reputed cultivators who produced Millet and sorghum as the main crops (Critiley, 1982). The farms were cultivated using traditional hoes (*Mukombe*) and digging sticks. In some cases, good harvest was achieved through application of organic manure (*ketur*) obtained from livestock droppings in the kraal (*kaptich*). For increased production, the community also did shift cultivation where land would only be cultivated for not more than two planting seasons as a way of reserving soil fertility.

The study observed that the production of millet and sorghum was central to the Marakwet socio-economic relations. Therefore it was used as a medium of exchange between Marakwet and their neighbors from the Kiptani community. As such the Marakwet obtained honey from Kiptani community which was used to prepare traditional honey brew (*kipketin*) for visitors and for food preservations purposes. It was observed that the Marakwet community cultivated majorly sorghum and millet than any other crop since they were drought resistant and tolerant to pests and diseases. However, millet was more cultivated compared to sorghum because it could be stored for a longer period of time. It could even remain in edible form for

a period lasting five to ten years without being attacked by pests such as weevils due to its small size.

Sorghum on the other hand, was often attacked easily by pests. For this reason, it was harvested, dried and stored in the cell (*tobot*) constructed slightly above the fire place or proportionally direct to the fire place for smoke to soot it. In the *tobot*, the smoke prevented the pests such as weevils from attacking the sorghum through suffocation. The use of *tobot* was effective in pest and disease control to ensure continued availability of food that could last even in the event of a prolonged drought.

This study therefore observed that the Marakwet had indigenous knowledge on how to preserve food for a long time. The storage of sorghum in the *tobot* to prevent attack by pests shows that the Marakwet had adaptive strategies for food security based on their traditional knowledge of their environment. The cultivation of millet and sorghum as the main food crops that suited the ecological requirements of Aror area shows that the Marakwet community mastered and exploited their environment for food production and food security. As such the community exploited three ecological zones of their land thus the highland (*mosop*), escarpment (*lagam*) and Kerio Valley (*keu*). Crops were grown and livestock grazing was carried on the hanging valley-that is the upper slopes of *Keu* (between the highland and escarpment) and foot hills of the *lagam* while *Keu* was basically for grazing purposes.

Cultivation was also done along the flood plains of *Keu* during the yearly floods which did not only provide fresh fertile soil owing to upstream erosion for millet and sorghum cultivation, but also moisture for growth of grass for livestock. The yearly floods were often a sigh of relief to the community because of the fresh soil (silt) which suited millet and sorghum cultivation leading to more people cultivating the area and thereby increasing their crop production. Moreover, the flooded area provided moisture required for growth of millet and sorghum, and also grass for livestock grazing, thus, an increase in milk, blood and meat production, an indication of mastery of their ecology.

The study established that inter-cropping as a manner of crop production suited the needs of the Marakwet in their fragile ecology. Sorghum was mainly intercropped with millet and or with vegetables. First, if the deep soils were left bare, it would be washed away by the flash floods of the Kerio Valley. Constant vegetation cover on sorghum and millet farms preserved the soil by preventing soil erosion. Secondly, soil fertility was maintained through this inter-cropping. In this manner, the spread of weeds, pests and diseases was arrested since neighboring crops such as millet and vegetables were less likely to be of the same species. Thus adequate food security and self-reliance was ensured by the cultivation of a variety of crops and vegetables on the same piece of land.

Harvesting of millet and sorghum was done between November and December where harvested crop was then put in traditional granaries (*kapchoge*) for storage. Tools such as knives made from iron obtained from the Maasai in Uasin Gishu plateau were used for harvesting the finger millet and sorghum. Traditional bags (*leng'u*) made from animal skins were used to transport the harvested millet and sorghum for storage in the traditional granary. This study on this account, submits that the harvesting of finger millet and sorghum by use of knives, transportation and storage is an indication that the Marakwet understood the ecology. The stored harvested food crops in the traditional granaries ensured future food availability, thus, food security.

The study observed that gourds (*sotet*) were extensively used to preserve millet and sorghum seeds. The openings of *sotet* were blocked with a mixture of clay and cow dung or lid made of animal skin to seal and prevent harmful insects or pests from destroying the seeds stored in them. Finger millet was usually stored in the traditional granaries while sorghum stored in the loft "*tobot*". Since finger millet was not easily attacked by pests, it was stored in *Kapchoge*. Sorghum which was easily attacked was stored at the *tobot* for the soot to prevent pests. Selected seeds to be used in the next planting season were also stored on *tobot*.

Nevertheless, crop production was not without problems. Crop pests such as ants (*chepkil*), weevils (*susur*), locusts (*talamwa*), and rats (*murek*) were common in grain crops. Wild animals like monkeys (*moson*) and elephants (*belek*) alongside shortage of rainfall caused food shortage and insecurity. To avert the problem, (*orkoi*) from the Toyoi clan (the rainmaker clan among Marakwet people) were often approached with animal for offering or sacrifice in the *kapkoros* (sacred site for offering sacrifice and appeasing Marakwet gods) and expected to intercede on behalf of the community during drought and famine. *Orkoi* performed specific rites that appeased *ilat* (god of rain) to provide a solution to problems facing the community. Therefore, with the help of the rainmakers from the Toyoi clan, the community were no longer held hostage by the vagaries of nature thus ensuring that the area received enough rainfall for food production and food security.

Indigenous Furrow Irrigation Systems

Irrigation has been found to be essential for developing arid and semi-arid lands in Kenya (Stern, 1979). Lowe (1986) submits that the indigenous technology based on the irrigated farming such as Marakwet indigenous furrow irrigation systems use cheap simple technology. Adams *et.al* (1988) opines that irrigator communities tend to identify themselves with the irrigation. The establishment of furrow irrigated systems in Aror area dates back to many years ago. Ruttoh (1988) identifies nine furrows, which include Muyen, Kapchepkee, Kapterik, Chemengir, Lukik, Kipkat (KVDA), Kabonon-Kapkamak, Karellach and Kapchebor. Chemengir and Muyen are the first and second to be constructed in the area, and owned by Kapsogom clan (Kipkorir, 1993). The third, fourth and fifth furrow is the Kabonon-Kapkamak furrow and owned by Toyoi clan. It owes its origin to Perat, an industrious and skillful man (Kipkorir, 1993). The sixth furrow is Kapchebar, owned by Kapketomo clan, Kapchebar furrow was washed away by floods. Other furrows are smaller furrows.

The study showed that the community employed indigenous irrigation using waters from river Aror, which is a permanent river, to grow food crops during long drought spells in *Keu*. The distribution of the irrigation waters to various farms was controlled by the water clan elders called *Kimwar*. Due to their interest in crop cultivation, they created extensive indigenous furrow irrigation schemes (Ruttoh, 1988). The traditional furrows supported millet and sorghum cultivation by ensuring constant rotational supply of water to each of the Marakwet clan agricultural fields under the management of *kimwar*. This saw many families grow millet and sorghum during the dry season using the indigenous furrow irrigation systems. The construction of the furrow systems and directing the water to the farm fields under the management of *kimwar* ensured the farms in Marakwet had constant water supply during the dry season. It is through these traditional water canals that saw the pre-colonial Marakwet community produce enough food for them to feed their families while some remained ensuring that the community was food secure. Kipkorir (1993) argues that the Marakwets living in Kerio Valley could not have survived in the harsh environment were it not for the indigenous irrigation.

Ssenyonga (1986) asserts that irrigation in Kerio Valley emphasized on maximization of water for finger millet, sorghum, cassava, and banana cultivation. Michael (1978) stipulates that the key factors which influence irrigation efficiency is the design of the irrigation systems, management of the irrigation systems, the degree of land preparations and skill and care of the irrigators. This study found out that pre-colonial Marakwet customary law restricts women and girls from directing the furrow irrigation water to the millet and sorghum fields. This responsibility exclusively belonged to the clansmen (*kimwar*) who would decide on how the water would be distributed. Women or girls under menstruation were culturally forbidden from coming into contact with the furrow water for they were perceived to be unclean and should they divert the furrow water to the crop fields, Marakwets gods were going to be unhappy and forced to punish the community through leaking or breakages of the furrows and even drying up of the streams or rivers that supplied water for irrigation. This in line with Kipkorir (2008) whose findings asserted that the families or clans with no right to any furrow obtained the water through forming alliances with clans which owned the furrows or through purchase, which they obtained only during the free period (*lugon*) when clans are “taking over” (11am-2pm) water from other clans.

The establishment of the indigenous furrows, layout of the furrow systems from the Marakwet escarpment to the crop fields in the Kerio Valley floor and the distribution of furrow water by *kimwar*, and the culture and taboos attached to it, shows the significance of the indigenous furrow systems to Marakwet community food production and food security. It is also important to note that the establishment of furrows or furrow layouts from the Marakwet escarpments to the agricultural fields at the lowlands of Kerio Valley was done by the pre-colonial Marakwet community based on their mastery, perception and experience of their ecology.

Hunting and Gathering

Hunting and gathering as a way of acquiring food for subsistence from nature was universal among Kenyan communities as late as the nineteenth century (Omwoyo, 2004). As much as cultivation of millet and sorghum and livestock keeping were the main sources of food in pre-colonial Marakwet, hunting and gathering of wild animals, fruits and insects were carried out to supplement the milk, millet and sorghum. This study established that the Marakwet practised hunting and gathering of wild resources especially during the dry periods.

Hunting was done in January, November and December as it was perceived that game animals multiplied more during the rainy season and were left to increase in numbers; thus, hunting was rarely carried during the wet seasons. It was also believed that there was abundance of food during the rainy season hence hunting was suspended. During dry season, even owners of large herds of goats and cattle went to the forest to hunt in order to help stocking their animals. They hunted antelopes (*ngemei*), gazelles (*cherortin*) and elephants (*belek*). Hunted animals provided food in form of meat and could also be exchanged for other products/goods (Carruthers, 2006).

Hunting activity was carried out along River Kerio and in the woodlands. This was because wild animals stayed along the river due to availability of drinking water and pasture. The community often assembled to decide the line of hunting to take. This involved deciding on which section to hunt and the animals targeted. The team would specifically target antelopes, if it was agreed as the target and not to bother any other animal. Marakwet culture did not allow them to kill or hunt aimlessly; this was done to prevent depletion of wild stock. This study therefore submits that hunting even by those with large stock of goats and cattle, and

selective hunting of the wild game by the pre-colonial Marakwet community was an adaptive strategy, to prevent not only the depletion of domestic stock but also the wild game stock. So hunting of wild animals was a way the community supplemented their harvested crop. It can therefore be argued that, this food security mechanism was undertaken by the pre-colonial Marakwet community with mastery of their fragile ecology.

Besides hunting, the Marakwet practised gathering of wild resources during the dry season. Both men and women according to the clan elders gathered vegetables, wild fruits, and roots from the Marakwet escarpment and along River Kerio. Among the wild fruits gathered that provided food was the *muchukwo* (*Barchemia discolor*) and *mokoiwo* (*Sycamore*). *Aria* (*Tamarundus discolor*) was used as a source of food and believed to cure stomach ailments and was mostly given to children in the morning before taking any meal for maximum absorption and healing. *Tuyunwo* (*Balanites Aegyptiaca*) was also a common plant in the area that could often sprouts during the dry season in November, December and January. Its leaves were used as vegetable and its fruits were stored as well to serve as animal feed during the prolonged dry.

The study observed that there were ant hills (*tulwopkon'ga*) in Aror Ward that provided termites (*Termes Ballicosus*) which are associated with the Marakwet living in *keu* over years. It was established that the termites were gathered and either fried and eaten or sun dried and mixed with honey and stored for future use. Pre-colonial Marakwet ant hills were very important and culturally owned by individuals, families or clans. No one would harvest the termites from one's ant hill without permission. The harvesting was carried out in April and it was done at night. A small sizeable hole is dug and fire lit near the ant hill. The fire would attract the termites which then fell and got trapped inside the dug hole. It would then be harvested and transferred into a collecting bag made of animal skin (*len'gu*), the gathered termites are then fried in the homesteads and eaten. The surplus was then dried, fried, crashed and mixed with honey and stored for future use or exchanged with grains or honey from Kiptani. Termites complemented grains and livestock products.

This study observes that hunting and gathering played a significant role in food provision as a food security adaptive strategy, hence, food security. During the periods of plenty harvests, the Marakwet suspended hunting and gathering. It appears that hunting and gathering became handy in difficult moments of food shortage. Therefore, the Marakwet understood their ecology and so seldom suffered from acute food shortages in pre-colonial era. It is also important to point out that the Marakwet community did not cultivate any fruit trees due to their shifting nature from one place to another, both in crop cultivation and livestock keeping, thus the fruits collected were wild.

Trade Ties

The Marakwet people in the lowland such as Kerio Valley (*keu*) traded in food items with their counterparts in the highlands (*Mosop*). They also shared trade ties with their neighbors mainly the Pokot, Tugen, and Kiptani. The main barter traded items include termites, cooking pots, milk, meat, and millet between the Marakwet people living in the highlands and those living in the lowlands. Items obtained from their neighbours; the Pokot, Kiptani and Tugen were mainly milk and meat in exchange for millet and sorghum. The Marakwet exchanged millet and sorghum for honey with the Kiptani. As such, barter trade between Marakwet with their neighbours became a food security mechanism employed by the pre-colonial Marakwet community especially when it came to the food stuffs that they lacked. This study noted that the pre-colonial Marakwet had indigenous knowledge of their environment set up by

enhancing the philosophy of taking and giving back, making them to have trade ties among themselves (Highland and lowland Marakwet) and their neighbors the Pokot, Tugen and the Kiptani to acquire food they lacked and dispose off their surpluses. This study therefore noted that pre-colonial Marakwet barter trading activity between the Marakwets of the *keu* with their counterparts in the highlands, and their neighbors the Tugen and Kiptani ensured food security since one obtained what the household lacked, thus a mechanism to food security. This was done based on the pre-colonial Marakwet community mastering their ecology, for food production and food security.

Environmental Conservation

The study established that trees were believed to be sources of water, unlike today where trees are felled at will. The Marakwet considered it a taboo to cut down trees such as *Sosio* (palms) (mostly grows in water source and along the rivers and streams) and *Mokoiwo* (sycamore) which was a source of food (fruits) during dry season. This was done to ensure continued availability of rainfall for food production and food security. Firewood could be obtained only from fallen branches and trees as opposed to cutting down a tree. Any person found felling trees illegally, would be liable to a hefty fine of a he goat and two pounds of honey. Moreover, such a person was meted with a punishment of not using the indigenous furrow waters for irrigation in their farms for a specified period of time. This was done to prevent people from destroying trees deemed as sources of rivers and streams, and to ensure continuity in food production through the use of furrow waters because with cutting of trees along the rivers it will bring a disaster or dry up of streams (food insecurity) to the community.

The study further observed that trees such as *Acacia totolis* (*sesyah*) and *Balanitesegyptiaca* (*tuyunwo*) were fruit bearing trees that could not be cut down at any given point. Clans or owners of such trees in their farms could only prune them only during the planting season. Their fruit known as *sakaram* in Marakwet language was a delicious animal feed that were collected during the harvest season, the early dry season, during November and December, dried and stored to feed the animals during the dry spells. The fruits could even be eaten by human beings during extreme famine period. The community preservation of these trees along river banks that provided fruits and acted as source of water for rivers and streams was a significant conservation measure of their ecology for continued supply of furrow water for food production and food security.

Pre-colonial Marakwet community practised shifting cultivation (Moore, 1986), at the point when land declines in production, farmers could shift their production to virgin land and allow the used land to gradually regain its fertility. This practice helped in curbing soil erosion and maintained soil fertility for food production (Critiley, 1982). Moving to virgin land ensured that food production was increased significantly. To curb soil erosion in the agricultural fields, the clan elders submitted that they used to build traditional ridges using small tree trunks, branches, and small stones that were arranged horizontally across the cultivated piece of land to reduce water run-off, hence curbing washing away of the top fertile soils that is needed for increased millet and sorghum production.

Livestock Keeping

The people of Aror Ward reared animals such as indigenous cattle and goats (Kipkorir, 2008). The animals were a source of food in form of milk, meat and blood among other purposes like payment of dowry and sacrifices to appease the traditional *ilat* (god of rain). The study established that during the seasons of prolonged drought and famine, the clan elders

would identify a fat castrated he-goat (*setim*) from Toyoi clan (the clan of rain) with no blemish or of pure white colour. It would then be taken to *Kapkoros* (a place set aside for offering sacrifices) and slaughtered for sacrifice and secretive traditional ceremonies was conducted by the senior most clan elder from Toyoi clan to appease the god of rain *ilat* for rain. The study noted that through the offering of sacrifice, the community was able to solve the problem of rains, hence, food production and food security.

Kipkorir (2008) posits that, more than any other animals, goats were the most preferred due to their survival during the dry season. They were easy to maintain as they browsed leaves and thorny plants which were enough to keep them fat and healthy. During the dry seasons, the pre-colonial community took their livestock to the escarpments (*lagam*) and back to the lowlands (*keu*). This was due to existence of animal shrub vegetation during the rainy seasons when grass and vegetation had regenerated afresh, a practice known as transhumance. This appears to have emerged out of the Marakwet people's experience and a conscious understanding of their environment. This is consistent with the famous saying that necessity is the mother of invention. The study therefore notes that this was an ecological adaptive strategy for food production and food security adapted by the pre-colonial Marakwet community to ensure continued food supply.

The pre-colonial Marakwet community exclusively relied on milk, meat and blood. These were supplemented by grains, wild resources and with what was obtained through barter trade with the agrarian societies who included the Marakwet living in the highlands and along the border areas with the Pokot, Kiptani and Tugen. The Marakwet pastoralists living in Kerio Valley had better-organized warriors from the age-sets for cattle raids. Their targets were the Pokot and Tugen for restocking purposes especially during the dry seasons. Cultural raiding of livestock from other communities was for restocking purposes. This was an indication that livestock was an important source of food and was a mechanism to prevent depletion of stock, hence, the Marakwet understood the challenges of their fragile ecology. As a result there was continued food supply through restocking of livestock. The study noted that the selective keeping of livestock such as goats and cattle which could survive in the environment and the seasonal grazing of the livestock between the escarpment and Kerio Valley indicates that the community mastered and adapted to their ecology for food production and food security.

Another food security adoptive strategy employed was animal leasing (*keminto*). This study revealed that the Marakwet culturally leased their animals to relatives (*kaborin*) who lived in the highlands or to the Tugen or their Kiptani friends (*Tilya*) during times of droughts and famine. It was established that the practice was meant to avoid livestock loss during dry periods and in case of a disease outbreak or raids. The practice also enabled cross breeding to get livestock with improved and more ecological adaptable attributes for milk, blood and meat production, hence increased food production and food security. The community majorly raised goats in large numbers for they were hardy and suitable for Aror, Kerio Valley ecology. They were kept for both milk and meat. On this account, Marakwet community mastered their ecology and therefore raised large herds of goats since they were hardy and could browse on dry leaves and thorny leaves during seasons of hardship, hence, an adaptive mechanism for food production and food security.

The study also notes that land for grazing in the pre-colonial Marakwet was also abundant. This was because the Marakwet cultivated only small farms for subsistence owing to simple farm implements which could not allow them cultivate a larger area which was eventually left

out for grazing. During difficult times or in the event of famine the head of the household(s) could select one of the fat bulls from his herd and pierce at the neck using a special spear to obtain blood. It was then directed to a wooden basin, then stirred and fried for family consumption.

In a nutshell, the keeping of traditional livestock by the Marakwet especially goats and cattle which were hardy in harsh environment of Arror ward, Kerio Valley, offering of sacrifices to appease *ilat* for rain, grazing of livestock between the escarpment and Kerio Valley, collecting of blood from livestock and leasing of livestock was to ensure availability of food in form of milk, meat and blood even it times of drought and crop failure. This contributed to food production and food security in the pre-colonial Marakwet.

Food Preservations

This study observed that traditionally, the head of a household among the Marakwet community in the pre-colonial period could identify a fat castrated he goat (*setim*) from his herd (*kraal*) for slaughter. The chosen animal would then be slaughtered and its bones carefully removed without tampering with the meat (slicing it into pieces). The animal was then wholesomely boiled in a cooking pot without adding water or any other ingredient, just the fat present in it was enough to cook it. When fully cooked, the meat would be smeared with honey and sealed in a pot for storage. The meat would later be consumed during famine or when there was food shortage, hence, a food security mechanism used by the Marakwet community. Cattle and goat meat according to the clan elders could be sliced into stripped pieces and dried (*sirken*) by smoking and salting. This practice was undertaken during the food abundance spells and the meat preserved for the unforeseen dry periods. This pre-colonial adaptive strategy ensured the community remained food secure for long periods including times of prolonged drought.

The study further established that during heavy rains especially in April, the Marakwet harvested termites (*kon'ga*). The termites would then be prepared by removing the wings by either pan-frying or sun drying later mixing them with honey for future use. Honey acted as a preservative (Kipkorir, 2008). The preserved food was then stored in special pots where they could go for weeks without getting spoilt. These termites came in handy for the hunters who trekked for several miles to hunt wild animals. It was observed that Marakwet community did not produce honey, but obtained it from Kiptani, their neighbors. The Kiptani people were known honey harvesters. They gathered honey in the forest from trees and caves in large quantities and used it as an item of trade, medicine and a source of food.

In addition, the Marakwet encouraged sustainable consumption of food. The study observed that one had to eat one type of food at a time. It was a taboo amongst the people of Marakwet for one to take milk and meat at the same time. This was indirect mechanisms to save food to be used in future or the day that followed. It was a taboo also to eat honey and what remains in the “sufuria” after cooking “ugali” at the same time. According to Marakwet culture, if one did so, the bees would attack honey harvesters, causing a lot of injuries and even death during the next honey harvests. This was culture that was passed from one generation to another; it was a food security mechanism to minimize food waste. This study also noted that the pre-colonial Marakwet preserved milk for future use. For example, since goat milk was most preferred because it was strong and nutritious, it was stored in the traditional gourd (*sotet*) mixed with charcoal dust made from sacred shrub called *senetwet*. The shrub was medicinal and used for conditioning calabashes and making a concoction to flavor fresh milk and to ferment the milk to form traditional milk called *mursik* (sour milk). This could be stored for a

week, which preserved the milk. Additionally, blood obtained from either cattle or goat was also mixed with milk. The blood was added in the milk because of its nutritional value and this would further preserve the milk for long without going bad. These preservation methods in general were and still remain essential for food security in the study area.

Traditional Granary

According to Zeleza (1986) the influence of diverse cultures is due to migration and settlement that moved a lot of influxes, assimilation and hybridization of the pre-colonial communities. Similarly, homesteads across Africa consist of different structures that serve different purposes. This study observed that one of the traditional structures still in use among the Marakwet, is the traditional granary which according to Kipkorir (2008), no one knows its history. However, through oral tradition credit is given to their forefathers for its conception. In this community, it is at marriage that men constructed granaries for storage of harvested crops (Kipkorir, 2008).

The study established that the traditional granary is locally known as *kapchoge* among the Marakwet. The *Kapchoge* is used to store food harvests and for seed saving. The construction of *Kapchoge* was purely skillful art in that they were raised one metre above the ground whose underneath acted as a goat's shade during rains or in times of too much heat, and also to prevent and reduce rodent infestation, this ensured there was no crop loss through attack by pest and diseases. The roof was conical in shape with a king post in the middle which held the reeds and rafters. The shape would allow ease draining of rain water through the thatched grass. The long grass of a desired variety which could not rot or get attacked by termites easily was selected from the Marakwet escarpments. The grass roof was also appropriate for a proper aeration and cooling of temperatures.

The traditional granary kept away pests since the inside environment could rarely support any life due cool temperatures and poor aeration. The granary floor and wall was smeared with a mixture of mud, ash and cow dung from inside up to the roof tops, this mixture repelled pests like weevils through suffocation. Stored millet in the *kapchoge* could last for five to ten years that ensured the Marakwet people were food secure. The construction of the Marakwet traditional granaries required a well experienced and skilled man who was guided by wisdom and experience. The construction of a granary was a collective responsibility.

Men assembled the building materials such as poles, rafters and ropes from preferred indigenous hardwood tree species and spearheaded construction. Once the men finished their task by thatching the roof with special tall grass obtained from Marakwet escarpment, the women prepared the inside of the granary. This involved mixing mud, cow dung and ash that was smeared on the inside wall and floor to smoothen the surface of the granary. This mixture repelled pest and prevented diseases.

The granary was highly valued, and culturally it was expected that a married man should have a granary in his homestead. This was an indication that as demanded by custom every household should produce and store food for family consumption as a food security mechanism. Therefore, among the Marakwet community, it is a taboo to burn or destroy a granary. Stealing from peoples granaries was also forbidden and punishable with dire consequences. Due to this, homesteads were fenced to enclose the kraal, granary and houses as protection for both the granary and their livestock. The inclusion of the livestock was to serve as signal. As such, one of the goats was fitted with a bell around the neck and in case of any security threat, one would be alerted.

The study established that the pre-colonial Marakwet had norms and culture that controlled and managed stored foodstuffs against theft. This was a food security mechanism to protect the harvested food crops and to encourage members of the community to take part in crop cultivation and raise livestock for their families.

Conclusion

This study established that the Marakwet in Aror Ward, Elgeyo Marakwet County, employed various food security mechanisms. These included; cultivation of millet and sorghum, indigenous furrow irrigation systems, hunting and gathering, trade ties, environmental conservation, livestock keeping, food preservations, and traditional storage facilities. The study concluded that the use of these mechanisms was based on the Marakwet mastery, perception and experience of their ecology. The pre-colonial Marakwet can thus be said to have strived to attain a degree of food security, based upon a sound adaptation of their traditional knowledge to their ecology for food production and food security.

The traditional mechanisms have withstood the test of time since they contributed to greater food security in the pre-colonial Marakwet. This study recommends that government food security mechanisms should be integrated with the traditional food security mechanisms in Aror Ward for sustainable food production and food security to be realized.

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