

Traditional Coping Strategies to Famine among the Keiyo People Living in Kerio Valley, Kenya

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Abstract

The study aimed at investigating the perception of famine and traditional coping strategies to famine among the Keiyo people living in Kerio Valley. This study is important because, Kerio Valley is a semi-arid region that is affected by occasional famine and food shortages. The methods of study employed were interviewing of key informants selected from different clans in Kerio Valley; Government officers; and Non-governmental organizations staff working in the area. The research established that the Keiyo had over time developed indigenous famine coping strategies that include: use of indigenous foods reciprocity and symbiosis with their neighbours, migration and raiding other tribes for stock. The use of these indigenous strategies is found to have declined with time. The study has enumerated the main problems facing Keiyo people in their efforts towards achieving greater food security. These include: shortage of water for irrigation and poor communication. The study recommends the enhancement of food security in Keio Valley to avoid famine in the area and integration of indigenous people knowledge to sustainable development.

Keywords: drought, food scarcity, vulnerability, food sharing, traditional knowledge

INTRODUCTION

Famine is the shortage of food for sufficient duration to cause widespread privation and death. Efforts towards alleviation of food insecurity and malnutrition are justified on welfare and economic efficiency grounds. Coping strategies are the patterns formed by the many separate adjustments that people make in order to obtain and use resources to solve problems confronting them (Bennet, 1969). Food shortages resulting from regional droughts can usually be solved with relatively little effort through traditional gift and loan relations among farmers and their kinsmen and friends.

Kenya's food self - sufficiency nationally and regionally has grown worse with persistent droughts in recent times. Drought is a characteristic element of the environment of Kenya and has affected agriculture, the economy and social organization (Downing, 1989). This phenomenon poses the challenge to rethink and focus on the issue of food security in the country in general and in the marginal lands, in particular the vulnerable districts of Rift Valley, Coast and Eastern provinces. About 80% of Kenya's land is arid and semi-arid. This supports around 20% of the population and about half of its livestock. These lands represent a potentially important resource which, if managed carefully, can help meet Kenya's food self-sufficiency goals. Environmental protection and conservation will be essential to maintain a viable economy in these lands.

Kenya's 1993 economic survey showed an overall expenditure: income ratio to be 0.76 in 1993 meaning that households spend the bulk of their income on consumption and largely on food. The same survey reported an increase of food imports by 88% in 1992. The Government has responded to this livelihood crisis by adopting a National Food Policy Paper (1981) to serve as a guide to improving food production. The paper aimed at maintaining a position of broad self sufficiency in food supply in the main foodstuffs in order to enable the nation to be fed without using scarce foreign exchange on food imports. It also aimed at achieving a calculated degree of food supply for each area of the country and ensuring that foodstuffs are distributed in such a manner that every member of the population has a nutritionally adequate diet.

The historical recurrence of drought and famine in Kerio Valley must have made possible the development of indigenous adaptive strategies by the Keiyo people as a way of mastering their environment. The persistence of famine in the present era suggests that food security and traditional responses to local droughts have either declined, because they are not sustainable or the Keiyo perception of their environment has changed. It could also mean that there has been greater intensity of drought and famine in the recent times. Through a historical analysis it is possible to ascertain the trend the impact of drought and famine have had on indigenous responses. It is also possible that external

interventions, which are a recent phenomenon in the area, may have had an impact by undermining traditional strategies thus creating a dependency syndrome by relying on new coping strategies that may not be adapted to the local conditions. This study is important because, Kerio Valley is a semi-arid region that is affected by occasional famine and food shortages. The findings of this study will benefit academicians, community developers and policy makers in addressing the problem of famine and food insecurity among the Keiyo people living in Kerio Valley.

MATERIALS AND METHODS

Key informant interviews and focused group interviews were used in collecting data in this research. The respondents were clan representatives, both men and women, who were among the eldest members of the community. Some enlightened members of the clans represented the older members, particularly those whom could not speak English. Information was gathered from members aged between 39- 60 years old; including both men and women. Majority of the respondents were the Keiyo people living in Kerio Valley; of whom 25 are women and 55 are men; selected from their different clans. A few Keiyo living in the highlands were interviewed (18), those bordering Tugen (10) and those bordering Marakwet (20). In total, the research interviewed 128 persons, out which 43 were women. Other key informants included government and non - governmental officials who were perceived to hold vital information on famine coping strategies and the Keiyo people.

The informants were interviewed informally, except for some few government and NGO administrators. Personal interview is an indispensable research tool mainly suited to exploration and in-depth research such as this one (Kerlinger, 1983). Focused group interviews were used to reveal cleavages of opinion and increase validity of the information gathered. Focused group interviews allow the researcher freedom to decide the manner and sequence in which the questions would be asked and also has the freedom to explore reasons and motives (Kothari, 1986). The method was very efficient in collecting in-depth information from the respondents in a group. Each group consisted of between 8-12 members mixed both gender.

Participant observation was used in the exploration study in obtaining information on the day-to-day activities of the people in the valley. Participant observation increases the precision and one understands the people better, at the same time getting first hand information (Sidhu, 1990). The disadvantage with this method is that subjectivity makes people see what they know but not what they observe. People tend to see what they want to see.

And by developing friendship with the community, one may lose his neutrality.

Secondary data from documentary sources helped to give a necessary background of the problem of drought and famine and to orientate the study. This is data that is already available and has been collected or analyzed by someone else in the form of published data or unpublished data (Kothari, 1986). Qualitative data analysis was used to summarize the findings of the study in a thematic way in line with the study objectives and generates answers to the research questions. Descriptive analysis is employed to present the data.

RESULTS AND DISCUSSIONS

The Keiyo used their traditional famine - coping strategies to counter the food - related problems that arose during the drought years. The following traditional strategies were used by the Keiyo, based on responses from interviews and key informants.

Trade Ties and Symbiosis

Trading activities have taken place between the Keiyo and their neighbours and among themselves. Until 1927, the Keiyo traded in ivory which they obtained by killing elephants in their environment. They sold these to Somali traders. The Government banned ivory trading in the area in 1927. The Keiyo had relied heavily on their livestock for survival and sold some when stock auctions were started in 1927. However, the Government forcefully took stock from people who had not paid poll tax and sold them by auction. Somali traders who were the main buyers, gained from the Keiyo who could not count. The Somali traders bought hides and sold Magadi soda (sodium carbonate) used by the Keiyo in mixing with tobacco. They also sold unbleached calico, cowry shells and other simple items to the Keiyo in exchange with maize meal. The same Somali bought cookery pots and gourds from the Marakwet.

The society had defined market days, like Koitilial where the Keiyo and Marakwet people met for trade. The Keiyo sold maize and bought bananas, cassava, mangoes and sugarcane from Marakwet. The Tugen sold goats and milk and bought maize flour, cassava and bananas from the Keiyo and Marakwet. The highland Keiyo and Valley Keiyo had developed trade links. The highland Keiyo took maize for sale in Kerio Valley and got payments either in terms of cash or goods like honey and goats. Through these trade links, the Valley Keiyo were able to survive environmental stresses.

Symbiosis between the valley Keiyo and the agricultural highland Keiyo was highly pronounced. One important feature from the informants was that each clan in Kerio Valley had relatives or other clan representatives in the highlands. Most had married

their daughters to highland husbands. Others had their relatives and clans on the gentle slopes of the escarpment and all these were more pronounced in symbiotic relationships. The valley Keiyo went 'Kimulany' or 'Kesumet', meaning they went borrowing food stuff and other goods from relatives and clan members in the highlands thus, practising traditional reciprocity.

They greased the reciprocity network with honey, fruits, goats, cooking pots, bows and arrows or other products from Kerio Valley. These were exchanged with food products like maize, potatoes, beans or sweet potatoes. In this way, they benefited from each other. The informants related how they went borrowing in the highlands in the 1930 and 1943 droughts and they said that in some cases the exchange was made easy because some of the clansmen or relatives in the highlands had grains stores in the Kerio valley. One she-goat was exchanged for eight 'Chepkatias' (20kg) of maize in 1943 and this was carefully rationed in the family to take one month. Trade ties and symbiosis were thus pronounced in the Keiyo adaptations.

Reciprocity

Reciprocity is the mutual exchange of goods and services. The Keiyo had the 'Tilia' system in which bond friends and relatives exchanged gifts during crisis which minimized the deleterious effects of famine and engendered personal obligation, gratitude and mutual trust among the givers and receivers. In all cases there was no systematic calculation of value or immediate return of goods and services. Those who received gifts had the obligation to reciprocate by giving presents to his bond friends and relatives. The informants reported that the reciprocity network was mainly the external reciprocity between the valley dwellers and the highland dwellers. Reciprocity was not very pronounced among the Keiyo in the valley since the crises affected them almost uniformly and the only difference was that some had stock while others did not. Internal reciprocity was mainly based on the exchange of household food items like flour and honey. There was no such thing as a pure gift except that goods and services were not loaned to the sick, the starving, the old, expectant and nursing mothers and infants. Salt was not loaned. In some instances, the loan was never repaid because it was forgotten since creditors were traditionally not supposed to remind debtors.

Those who had stock could give gifts to the starving in terms of milk, meat or stock but stock was to be returned in the event of improved environmental status. A respondent, a progressive farmer in Kerio valley, gave out 300/350 sacks of his maize (90kg) harvested to his bond friends in the highlands in 1985 and by 1993, very few sacks still remained unreturned. The highlands were hit by food shortages

in 1985 due to late planting unlike Kerio valley. Some of his sacks were not to be returned as they went to his bond friends.

The Keiyo bond friends and relatives in the highlands served as insurance during drought and famine. The highland Keiyo received gifts mainly in terms of honey, soda ash, salt lick and goats from the Keiyo in the valley. One respondent had given two 20kg of honey to his bond friends in the highlands in 1993. These offers were not necessarily sold but given to the networks which gave other gifts to them in the valley during food crisis. The highland Keiyo understood the relationship and returned gifts in greater amounts - more maize, beans, potatoes and other foods - during a food crisis. One Kerio valley informant boasted of a beer party made for him in the highlands every time he went there when there was a food crisis in the valley. On that day, all his other bond friends in the highlands met in the party, and brought gifts that were "So much that I could not carry them to the valley". Soda Ash, salt licks and honey were abundantly harvested in Kerio valley and the interdependence had enabled the highland Keiyo to get them.

The disadvantaged Kerio Valley Keiyo are mainly the transporters in the exchange. They trekked up and down the steep Kerio escarpment, ensuring that the exchange of gifts took place. The highland Keiyo just gave and received. This may have been the price the Kerio valley dwellers had to pay for the higher amount of food they got in the exchange. The 'tilia' system and symbiosis of the Keiyo was only used by those who had established reciprocity network and bond friends with the highland Keiyo. Those who had no such networks may have had other strategies that served them better. These strategies may have included non-farm occupations.

Natural Foods and Non-Farm Occupations

Non-farm occupations were reported to have been very important strategies in coping with food crisis. These include: collection of weeds, natural plant fruits, hunting and gathering, honey collection, eating ants and small scale trading. The gathering of relishes, weeds, fruits and the use of white ants enabled the Keiyo to make certain traditional foods that served to contain most food crises. The following were some important natural vegetables and edible plants, including fruits plants the Keiyo identified. The English names of some plants could not be identified.

Ngoswo (*Balanites aegyptiaca*) was the most important fruit tree for the Keiyo during drought. Its fruits and leaves were boiled and eaten during famine. Its oil was said to leave one satisfied for a long time before one got hungry. The informants reported using a lot of fruits and vegetables during drought in order to

suppress the impact of hunger. The Keiyo collected the vegetables in the bushes surrounding their farms while fruits are gathered. Forests were communally owned and were not restricted to any one clan; therefore it served the whole community. They could also go to Tugen land searching for fruits and vegetables.

Table 1.0: Traditional Vegetables

Local Name	Botanical/ Common name	Type
<i>Ngoswo</i>	<i>Balanites aegyptiaca</i>	Fruit and vegetable
<i>Tamunges</i>	<i>Uvaria Scheffleri</i>	Fruit and vegetable
<i>Tololokwet</i>	<i>Scherocarya birrea</i>	Fruit and vegetable
<i>Keibetwet</i>	<i>Vangueria madagascariensis</i>	Fruit and vegetable
<i>Tungururwet</i>	<i>Flacourtia Indica</i>	Fruit and vegetable
<i>Muchukwo</i>	<i>Berchemia discolor</i>	Fruit and vegetable
<i>Lokoiwo</i>	<i>Ficus Sycomorus</i>	Fruit and vegetable
<i>Simatik</i>	<i>Ficus-Ovallis Chondae</i>	Fruit and vegetable
<i>Sitiyot</i>	<i>Grewia bicolor</i>	Fruit and vegetable
<i>Tilingwet</i>	<i>Meyna tetraphylla</i>	Fruit and vegetable
<i>Hililwet</i>	<i>Sterculia stenocarpa</i>	Fruit and vegetable
<i>Ariek</i>	<i>Tamarundus Indica</i>	Fruit and vegetable
<i>Tirkinen</i>	<i>Ziziphus Mauritiana</i>	Fruit and vegetable
<i>Muyengwet</i>	<i>Ximenia Americana</i>	Fruit and vegetable
<i>Keliot</i>	<i>Akokanthera schimperii</i>	Fruit and vegetable
<i>Nderemiat</i>	<i>Edible climber</i>	Vegetable
<i>Bobek</i>	<i>Edible mushrooms</i>	Vegetable
<i>Isakchiat</i>	<i>Spider plant</i>	Vegetable
<i>Kisochot</i>	<i>Night shade</i>	Vegetable
<i>Chebololet</i>	<i>Pumpkin</i>	Vegetable

* Vegetables that the researcher could not identify their botanical names

The main problem the informants had with the fruits collected was that some fruits and roots such as *Ngoswo* need up to six hours of boiling in a cooking pot before use. The fruits of this tree are first eaten and regurgitated by goats. The goats cannot digest them and therefore vomit them out after some time, almost a day. The Keiyo collect them before boiling to make food. One informant had two sacks of 'vomited' *Ngosiek* kept as an insurance against future famines. *Tirkiken* (*Ziziphus Mauritania*) is cooked six times before consumption as it is said to be poisonous if it was not well boiled. Tree gums, tree barks and roots were also used during worse famines, like the roots of a plant called '*Yagan*'.

The informants described how they made different foods using mixtures of fruits, honey, ants and even grass. Flying ants were eaten alive or fried and mixed with honey to make a food called '*Kunen*'. They said that this food, when eaten, demanded one to drink a lot of water and was said to be a good delicacy during famine. Locusts were also caught, killed and dried in the cell, '*Saina*' before storage or use. They could be kept for up to one year before they went bad and acted as an insurance against famine. Fruits were mashed and mixed with honey and a kind of *ugali* made. A grass called '*Chebusia*' was collected, pounded and made into *ugali* during *Kiptabis* drought (1894).

Hunting has been practised by the Keiyo and it was said to intensify during drought. They used to hunt wild animals like elephants, antelopes, buffaloes and wild pigs. The informants narrated how they used to chase lions or vultures from a kill and took away the carcasses in their efforts to survive. The Government later banned hunting in the 1960s and established a 1024 Km² Rimoi game reserve in the 1980s to protect the wildlife in the area against hunting. People were not happy with its creation for it has denied them an alternative source of livelihood. The Government's policy was that animals were supposed to be repulsed and not killed in case they attacked people's farms.

Bee keeping was reported as an essential activity in Kerio valley. The Keiyo made beehives using adze and hanged them on specific trees. They valued it as a source of food and especially as insurance since honey can stay for years without going bad. One respondent got 15 '*debes*' of honey in 1933. One 20kg (*debe*) was sold at Kshs 1,500. Kerio valley honey was in high demand and easily got a ready market. The Keiyo sold or exchanged the honey for food and used it also in making the traditional honey beer, '*Kipketin*'. *Kipketin* was drunk in most ceremonies.

Other non-farm occupations included blacksmithing, whereby those involved used iron which they got from Kerio valley, beer brewing, beehive making, arrow poison brewing and medicine making. The making of red earthen cooking pots took place at Kapsikom near Changach in Southern Division. During food crisis and also during normal trade, a full pot of maize grain was exchanged for the particular cooking pot in the highlands. The rest were sold to the Tugen. The present commercial activities, which were still on very low scale, include small business activities and petty trades like small shops. Middlemen engage in the buying and selling of fruits, grains, animals and other products. Charcoal burning has also been practised.

Migration and Stock Theft

The respondents narrated how their people migrated from Kerio valley to neighbouring areas during food crisis. During the 1894 '*Kiptabis*' drought and famine, the Keiyo people migrated to Maasailand in the Western highlands, to Tugen, Nandi, Moiben in Uasin-Gishu and Kakamega. One group of migrating women of Keiyo were given the local name '*Tibikab Keiyo*' (Girls of Keiyo). Some of those who moved away were said to have gone to *Chepkurmum*, a place said to be located between the Nandi, Kipsigis and the Tugen. The informants said that on migration, some people got lost and up to now they have never been traced and are thought to have died.

One informant's grandfather who migrated to Nandi with his cattle was said to have been killed and his

stock taken by the Nandi. Migration as a famine coping strategy was therefore not safe.

During the '*Kiplekowo*' drought and famine (1942/43), some Keiyo migrated to the Southern highlands especially near Chepkorio. They gave some of their animals to other people to keep for them as a kind of stock associates. It was reported that not all the livestock given out had been returned and that people were not eager to return them back. This is because the people had either forgotten their creditors or the creditors had their debt 'written off' due to the long bond of friendship and recurrent hardships. The 1961 floods saw the migration of the Keiyo to Tugen land in the East and across Kerio River and also to the highlands in the West of Kerio valley. The flooding Kerio River was said to have been an obstacle to the crossing to Tugen since the Keiyo did not have the technique of swimming. Those who managed used defined routes which were shallower. There was massive migration into the Western highlands, aggravated by the departure of the colonial white farmers from Uasin-Gishu district.

Between 1962 and 1969, the Keiyo population in Kerio valley declined by 12%, from 9,054 people to 7,545 people, their population in Uasin-Gishu on the other hand increased by 41% in 1969. The migrants saw it as an exit from regular food problems associated with residing in Kerio valley and expected better living standards in the highlands. Livestock theft, often resulting in war, has been a common phenomena in Keiyo. The Keiyo were always on alert to repel raiding parties foraging for livestock and made forays whenever opportunity arose. It may not be described as a response to drought and famine but an effort to increase stock because it did not coincide with famine or drought. They also defended their stock from theft by other communities like the Tugen and the Maasai.

The respondents said that from early childhood, they taught their children the importance of livestock, how to guard them against theft and how to raid other communities for livestock. Children and those circumcised were made to play with yellow solanum berries as their livestock - 'goats', 'cows' or 'sheep'. Those who were circumcised used real spears, bows and arrows while the uncircumcised children used sticks as bows and arrows. During circumcision, this training was enhanced by formal intensive training and 'practicals', lasting up to one year of warriorhood. Regular stock thefts were reported to have taken place between the Keiyo and the Uasin-Gishu Maasai, the Kitosh, the Tugen and their Marakwet neighbours. The Keiyo respondents were happy to narrate one such raid by the Maasai in which after a strong fight with the Maasai at Tambach, the Maasai were not able to climb the steep Keiyo escarpment back to the highlands. The Keiyo simply set fire on

the low scrub on the slopes, killing most of them by burning fire.

The incident was reported to have seen the end of Maasai thefts of Keiyo livestock. In one raid on the neighbouring Tugen, the Keiyo were caught at river Kerio after being pursued by the Tugen and thirty survived by leaping across. The river was too deep to cross and it was only those who were able to leap to the Keiyo side that survived. Twenty of them and most of the livestock they had stolen fell into the Kerio River and drowned. One particular warrior is said:

“to have got a firm hold of a heifer tail and running fast towards the river following it, pricked the animal hard with his spear. The heifer, feeling the sudden pain, was able to jump to the other side of the river with the warrior holding its tail. The heifer is now dead but its off-springs were reported to be thriving in Rokocho area in the Southern division”.

An area in Tugen near Lake Kamnarok called Kapluk was reserved by both the Keiyo and Tugen for settling disagreements such as: stolen stock, land and any other quarrels. The advent of the Colonial government in 1919 reduced stock thefts. Sole survivors in thefts or fights were not to be harmed, as was a warrior who remained alive out of some ten Keiyo who had gone to steal Tugen goats in a valley in Tugen. Going during a moonless night, nine of the warriors had accidentally fallen into the valley and died while the survivor was found by the Tugen the next morning having been pierced by a stump of a tree in his effort to run back to Keiyo.

The warrior was treated and let go. They were restricted from raiding not only other communities but also European farms. In a 1926 raid of the Keiyo on European farms near Kaptagat in Uasin Gishu (called *Chesebet ak Pombo*), the perpetrators were caught and the whole group made to swear never to repeat such an act again. Hence a common phrase in the modern Keiyo, "*Kwek Chesebet ak Pombo*" meaning; "I will not go to or farm *Chesebet* and *Pombo* again". Theft may not be considered a conspicuous response to drought and famine because it did not automatically take place during such times. It can however be considered as an insurance against food shortages, disease outbreaks and raids from other tribes since it increased the wealth of the Keiyo in terms of livestock numbers and was culturally approved.

Strategies Related to Livestock

Goats were said to survive even during serious famines since they ate dry leaves of plants, barks of trees and fruits, thorns and roots of plants. The most affected were usually the cattle and the sheep. Stock associates were more pronounced between the Keiyo

of the valley and those of the highlands, especially in the Southern part. In the valley those who were poor or were more affected by food deficits were given cattle but were supposed to get only the milk and return the cows later. Stock was given to friends and relatives in the highlands in the event of drought in the valley. The recipients in the highlands got the milk and the calves free but returned the original stock when times were better in the valley. Under other arrangements, the highland Keiyo get only all the female off-springs of the stock. They grazed their cattle on the ledges and the gentle slopes of the Kerio escarpment when there was drought or grass became scarce in the valley. Goats climbed the escarpment with ease. They also cut fodder trees for the livestock.

The fodder trees included the Whistling thorn '*Lengnet*', whose bark was used as fodder, *Balanites aegyptica* 'Ngoswo', whose leaves were eaten by livestock and fruits eaten by goats, *Ficus sycomorus* 'Lokoiwet' and *Ficus thoningii* '*Simotwet*', *Scherocarya birrea* '*Tololokwet*' and *Terminalia brownii* 'Koloswet'. The Keiyo did not keep many sheep and cattle but kept many goats, even today. Many goats were said to minimize the probability of one losing everything during a breakout of a disease, but not famine. During food crisis, they ate dead animals. During the 1942 - 43 droughts, they ate the meat of dead livestock as long as they were not killed by smallpox. The traditional test for smallpox was dipping the liver of the animal in sand and if it busted, the meat was considered bad and was not eaten. The blood of livestock was drunk, either on its own or mixed with other foods like milk, white ants, sugar or meat. This blood was drawn from healthy animals through shooting an arrow to pierce a vein in the neck and the blood tapped. Skins of the animals were burned or boiled before being eaten during disastrous famines.

Crop Related Strategies

The traditional crops of the Keiyo have been millet and sorghum and later maize (when it was introduced in 1936). During the introduction of maize, people are said to have eaten it raw as they were not told how it was to be prepared before eating. Then they learned gradually from others how to prepare it as food. Maize grain was either ground into flour for making porridge or *ugali* and sometimes boiled or fried before consumption.

At harvest, all grain was stored but the store of the household head ('*motiet*') was not to be opened or the stored produce to be used without his personal and community's consent. The '*motiet*' was only opened during a period of food crisis or when the mother's store had been exhausted. It was a requirement that all households' heads have their '*motiet*' as a security in times of drought and those who used their reserves

carelessly were publicly condemned during community gatherings by elders and were unlikely to get assistance from close friends and relatives. The respondents noted that the present society did not practice the old system of storage of produce and almost each household now had only one store whose control was not defined. The traditional store was rounded with a raised floor and without a door except for a small opening which was high in the wall. This ensured that baboons could not remove the grain. Precaution was also made against attacks and rainwater.

The ledges had better soils and climate for crops. In order to ensure maximum harvests, people had up to twenty small plots on the ledges and gentle slopes in addition to relatively larger farms in the valley floor. The plots were chosen well apart to act as insurance if any other farm or farms were affected by drought, diseases or pests. Movable small rocks were arranged so as to prevent soil erosion and to mark boundaries. Observation posts were built above the crops, protected from the sun by grass thatch. Birds, squirrels and other pests of crops were scared by attendants. The farming activities on the ledges served to complement the produce from the valley and an insurance against total crop failure. The colonial administration tried to introduce new varieties of crops in Kerio valley and the initial response was always negative. The colonial administration observed in 1940; "the people of this district (the Keiyo) are very slow in adopting new methods or taking to new crops".

The new crops introduced included bananas, groundnuts, mangoes and pawpaws. In some cases crop planting was enforced by the District commissioner, like in 1942. In this year it was given as order to plant two of the following crops: cassava, sweet potatoes, groundnuts and pigeon peas. It was reported in 1943 that the root crops and drought resistant crops were planted after some resistance and became a great standby during the 1943 *Kipilekowo* food crisis. The Keiyo have henceforth planted these crops. Grain losses were reported to be reduced by guarding farms against birds and wild animals during the day and stored crops against theft during the night. Baboons, squirrels, porcupines, elephants and antelopes destroy planted crops together with various kinds of birds like the Quelled bird. The informants explained how they used poisoned arrows to kill wild animals including the elephants which destroyed their crops.

The Tugen were used by the Keiyo as farm labourers after the introduction of maize in Keiyo. The Tugen, who got the maize much later, worked for the Keiyo and got food for work. When they wanted to take maize for planting in their farms in Tugen, the Keiyo gave them roasted maize and instructed them to go

and plant. The Keiyo were able to maintain Tugen people as labourers on farms since the maize they were given were not growing and had to go back to Keiyo to work for food. Hence today, the Keiyo are still referred to as '*Chepkelbai*', roasters of maize by the Tugen. This can be regarded as a negative survival strategy that the Keiyo used.

These traditional strategies explain the Keiyo indigenous coping strategies to drought and famine. Accordingly the human ecology theory of adaptation is relevant in explaining the new behavioural practices that the Keiyo have adopted to ease the stress of food crisis during famine. The adjustment choices the Keiyo adopted are considered a product of their culture and a struggle to conform with a changing environment. These behaviour traits constitute the new culture.

Drought and famine represent the environmental stress as explained by the Symbolic Interactionist theory. The accompanying food crisis and related effects are the social disorganisation aspects in the theory. The societal disobedience of food taboos and rules leading to 'God's punishment' is the definition of the situation in the Symbolic interactionist theory. Traditional coping strategies to the drought and famines are the adjustment choices that the Keiyo made. It is only after another similar stress that the circular process is started again. The theory does not consider recurrent crises like the one of the Keiyo where definition of the situation and adjustment choices are relatively the same for each crisis and people do not need to re-define the situation or re-adjust. The Keiyo only need to remember past survival strategies.

CONCLUSIONS

The Keiyo were found to have had various indigenous coping strategies. These included symbiosis, reciprocity and trade ties. They also migrated, practiced stock theft, went to war, prayed and relied on natural foods and nonfarm occupations. They looked after animals and raised crops. These were based on their perception of drought, which was perceived as caused by nature. The indigenous strategies of the Keiyo should be maintained and encouraged to be used even in the modern time. The indigenous people should be flexible so as to take in new ideas and innovations and shed away the ideas and practices in their culture that are detrimental to the development process towards food security in the area. This includes trying new varieties of crops and breeds of animals, new ideas like sanitation, other types of foods like fish and the preservation of wildlife.

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