

Shamba System Of Forest Management And The Elgeyo Marakwet Agro-Pastoral Economy During The Post-Colonial Period, 1963-2013

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Abstract: The pre-colonial history of the Elgeyo Marakwet suggests a society whose agro pastoral economy and other food acquisition forms was closely linked to the environment. Geographical factors such as the physiography of the area, have over the years determined their agro pastoral economic practices although the intensity of both crop cultivation and livestock keeping varied in accordance to the ecological factors. The pre-colonial agro pastoral system provided a complete and permanent equilibrium between man and nature and there is evidence that the community developed elaborate strategies for management of their natural forests, which were enforced through strict social norms and cultural traditions, thus, the Elgeyo Marakwet used their natural forests and had strong dependence on natural ecosystem services. In 1910, Kenya's colonial administration introduced the shamba system, or Non-Residential Cultivation (NRC), to provide raw materials for the expanding timber industry and reduce pressure on natural forests. Shamba System policy was introduced in Elgeyo Marakwet in 1941 to take advantage of their knowledge and strategies for management of their natural forests, however, unlike anticipated by the government, shamba system failed to meet its intended objectives in light of the subsequent practices adopted by the community in exploiting the forest resources. This paper examined the benefits and limitations of the shamba system in Elgeyo Marakwet and assessed the management and policy requirements for the system's successful and sustainable operation in the community. Information was obtained from 133 questionnaires using mainly open-ended questions and six participatory workshops carried out in forest-adjacent communities in Kipkapkabus forest, Kapchemutwa forest, Kaptagat forest, Kessup forest, Sabor forest, Benon forest and Kapcherop forest in Elgeyo Marakwet. In addition, interviews were conducted with key informants from communities and organisations. There was strong desire amongst local people for the system's reintroduction given that it had provided significant food, income and employment. Local perceptions of the failings of the system included firstly mismanagement by government or forest authorities and secondly abuse of the system by shamba farmers and outsiders. Improvements local people considered necessary for the shamba system to work included more accountability and transparency in administration and better rules with respect to plot allocation and stewardship.

Keywords: Shamba system, forest management, Agro-pastoral Economy

I. INTRODUCTION

Shamba system is a scientific principle of forest plantation establishment in which farmers tend young tree

plantations as they produce food crops in private or public forests for two to three years until the tree seedlings become established to grow on their own (Kagombe, 2005). Described as classical scientific forestry, the policy was practiced in most

British dominions with a focus on capital accentuation and environmental stability (Brett & Kruger, 2015). This policy would acquire different names in the various British colonies where it was practiced. Globally, the best shamba system practices are found in the Middle East. For instance, it began in India in the 19th Century where it was introduced by Sir Dietrich Brandis as a means of exploiting cheap labour of landless peasants in establishing plantations of economically valuable trees, especially teak. Taungya system, as it was referred to in India, would be used in integrating different types of crops with trees with time and this enhanced proper management of Indian forests (Amoah, 2009).

II. ESTABLISHMENT OF THE SYSTEM

For much of Kenya's colonial period (1895–1963), the Kenya Forest Department's (KFD) primary goal was to supply the timber and fuelwood needs of the colony. The Uganda railway, which ran through Kenya to Lake Victoria, was almost totally dependent on wood for its fuel requirements prior to the Second World War, while the colonial economy hinged on the Uganda railway for transportation (Logie & Dyson, 1962). However, Kenya was not and is not a country with extensive forests. At the time of independence, forests only covered approximately 2.7 per cent of Kenya's total land area (Logie & Dyson, 1962). This low level of forest cover, together with difficulties in accessing the even smaller percentage of exploitable native trees, meant that the establishment of plantations, typically of exotic eucalypts, became the only way to guarantee the colony's wood supply.

Early proposals for a labour force to clear land and to plant and tend trees called for the recruitment of white South African forest labourers. This, however, would have been incompatible with the colony's policy to allow only gentry, officers, and the otherwise wealthy to settle in the territory;¹⁶ instead, Africans would have to provide labour for the KFD. Private contractors holding KFD-issued extraction and processing licences employed wage labourers, but the only cost-effective method to establish and maintain plantations would be to use workers who were themselves resident in the forests. This was a point repeatedly made by the KFD:

[...] this Department is only able to plant the large acreage that it does owing to the availability of Kikuyu squatters who clear, cultivate and maintain the land in which we plant [...]. Without this system our cost would go up by 400% or 500% and acreages planted could decrease by a similar figure. (KNA, FOR/1/210).

Despite this colonial necessity, the wider forestry community was sceptical of the system. At the Second Empire Forestry Conference in 1923, heated debate developed over the issue of taungya or shamba because it attempted to control shifting cultivation, an agricultural practice demonised by foresters because of its apparent forest destruction. It was further feared that it would encourage "nomadic habits" in its practitioners and thus retard their agricultural development, required as they were periodically to move their farming plots.

However, the economic arguments of the KFD representatives prevailed, and it was decreed that the shamba/taungya system would be used in those colonies

where there was no alternative for the economic development of plantations. Such was its acceptance that the Empire Forestry Journal printed a short guide to using the system, written by a forester from Kenya Colony. Following this, the system was also used in Ghana, while in Nigeria trials began in 1927 after a KFD forester was transferred there. The success of shamba in Kenya can therefore be seen as directly leading to its uptake in other territories in the empire.

In East Africa, Uganda, which also embraced the policy, admitted that it provided employment opportunities to many Ugandans alongside being a cheaper method of tree establishment (Muchangi, 2011). In Kenya, the Shamba system was introduced in the year 1910 to help address afforestation programmes by the colonial government (Oduol, 1986). The policy was practised in various forests in Kenya such as Mau, Mount Kenya, Ndundori Gathiriu as a tool for forest development and communal empowerment, where tea was grown alongside trees (Sinange, 2012). It succeeded in Gathiriu and Uasin-Gishu forest areas whereby an increase in afforestation was noticed because management of the forests was people centered and forest plots were allocated to the residents without charging levies (Mwatika, 2013; Achungo, 2015).

However, the Shamba system policy failed to stand the test of time in most forests in post-colonial Kenya. Environmental activists attributed forest plundering in Kenya to the shamba system (Wangari, 2009). For instance, Mau Forest has lost huge chunks of forest block due to excision to pave way for human settlement in a bid to settle the Ogiek but later through corruption, many encroached the forest thus tampering with tree establishment. Retrospectively, Elgeyo Marakwet forest lost huge chunks of forest land to illegal logging concessions and together with Mau and other forests, were part of the Grand Coalition government's agenda on conservation of 2008-2012 (Wafula 2010; Otieno 2011).

In contrast to Mau Forest and Kakamega forests that are a tourist attraction sites, Elgeyo Marakwet forest benefited the locals through shamba system as an incentive from forest restoration for some time whereby they grew maize and beans. However, studies by Mukodo (2012) revealed that poverty levels, inadequate finance and poor implementation of forest conservation measures are a threat to Elgeyo Marakwet forest. The current study sought to take this debate further by not only analyzing the challenges that have affected forests in Elgeyo Marakwet but also to investigate the effect of shamba system of forest management in the restoration of forests.

With forest challenges gaining momentum in post-colonial Kenya, a period of forest exploitation was ushered known as Environmental forestry era which commenced as from the year 1980. According to Reidar (2003), this period witnessed considerable timber exploitation without planting. Studies on the effect of environmental forestry era has been undertaken by: Reidar (2003), Klopp (2012) and Shazia (2014). These scholars concur that Environmental forestry era threatened the survival of indigenous people besides degrading forests. They further quip that politicians continued to wield control over forests as rent-seeking opportunities. The current study sought to further investigate the effect of shamba system of forest management during the environmental forestry era.

Contemporary historical forestry studies in Kenya have been undertaken by a number of scholars notably (Fastone, 2016). These scholars concur that the shamba system succeeded in establishing plantations in the colonial period. However, in the post-colonial dispensation, they describe the shamba system as a phenomenon that had a turbulent post-colonial history which Ofcansky (1984) in a bid to contextualize forest challenges both in colonial and post-colonial Kenya attributes to proliferation of politics and executive orders in forest management without the consent of environmentalists. They finally depict the shamba system as an area that is unexplored in Kenya's historiography.

The current study, therefore, sought to describe the history of forests in Kenya with a view to describing the evolution of forests and the adoption of the shamba system in Elgeyo Marakwet Forest. On a different note, studies on economic history have been undertaken by Ndege (1987), Onduru (2009), Amatsimbi (1993) and Cokumu (2001). While these scholars similarly articulated modes of production theory in describing how the colonial state transformed the indigenous agriculture, road and local entrepreneurship, the current study delved into articulating the modes of production theory in the transformation of forestry as a mode of production through the adoption of the shamba system. These scholars, nonetheless, posit that the colonial state incorporated various regions into capitalism through political contests establishment of repressive administrations. They enumerated the following aspects that instigated economic change: development of colonial agriculture, development of commodity production especially hides and skins of animals, migrant labour, development of roads and markets and finally entrepreneurship.

While it is evident that the colonial government established various forests through the shamba system which consequently instigated economic change by introducing timber trade in Elgeyo Marakwet Forest, studies on economic change by Ndege (1987), Onduru (2009) Amatsimbi (1993) and Cokumu (2001) addressed factors that instigated economic change in agriculture and commodity production generally but did not focus on forestry. Studies in forest history have depicted the shamba system as an area that has remained unexplored in Kenya's history. Most of them have focused on contests and negotiations that engulfed forestry in the colonial period and the evolution of forest policies.

The current study is premised on investigating the evolution of forest policies and the adoption of the shamba system of forest management and economic change. While studies have shown that the shamba system succeeded in putting up forest plantations leading to the rise of timber trade, studies on Economic Change have not appraised the shamba system as a phenomenon that instigated economic change so far. The governments persistently applied the policy in Elgeyo Marakwet Forest in spite of the challenges it has faced. This study therefore addressed the continued degradation of Elgeyo Marakwet Forest through illegal logging while examining the effect of shamba system in forest management.

III. THE HISTORY OF FORESTS IN KENYA: MANAGEMENT AND USE OF FORESTS ON THE EVE OF THE SHAMBA SYSTEM IN 1957

Before anything else, human beings are referred to as biological entities as opined by Beinart (2000). Their interaction with other species and with the natural environment, and their appropriation of the natural resources without which life is impossible is a central element in history. In this regard, environmental concerns have necessitated the consideration of fascinating non-human agents in history such as fire, water, animals, insect, epidemics and plants and their invaders. In a bid to contextualize and debate these environmental factors, it has emerged that analyzing, for example, the evolution of forests and its conservation itself, has been a controversial issue. This is justified by the Green Belt Movement under Wangari Maathai who opposed the shamba system and attributed it to tree loss. These assertions occurred during the era of Environmental forestry in Kenya in 1980-1990s which saw forests harvesting done without planting (Wangari, 2009). This was in spite of research showing that the shamba system is still the best approach in forest establishment (Muchangi, 2011).

There has been a misconception that, prior to imperialism and colonization, there were no established forests in Africa. Secondly, Africans contributed to destruction of forests through their cultural and economic practices, for instance, through shifting cultivation hence they have been depicted as mere recipients of conservation knowledge from the Metropole. Both conflicting sets of narratives were held by Arthur Hardinge in the year 1897 who sought to limit forest destruction in Kenya through a legislation of wood and forest regulation (Beinart 2000). The latter position of Hardinge on Africans being viewed as forest destructors is championed further by Ofcansky's (1984) account of the development of forestry in Kenya who notes that African shifting cultivation and overgrazing caused large scale deforestation and soil erosion.

However, he notes that ecological balance was achieved through occurrence of war, epidemics and famine. This is a pessimistic account that tended to view Africans as people who did not possess any knowledge in forest use and maintenance and it is refuted by Thrupp (1997) who asserts that those who suggest that African shifting cultivation is responsible for environmental destruction are relying on a myth. She notes that environmental impacts of shifting cultivation are diverse and depend on cultivation practices as well as socio-economic and ecological factors. Besides, she notes that field-based study so far has revealed that shifting is not responsible for a majority of global deforestation. She notes: while the contribution of shifting agriculture to overall tropical deforestation is clearly an issue of concern, its magnitude in relation to other causes is sometimes put away out of proportion in aggregate figures for global deforestation " (Thrupp, 1997)

A Key informant, Wilson in the year 2018 while in concurrence with Thrupp (1997) on Africans' possession of knowledge of forest use and establishment, gave an account which revealed that prior to colonialism, Africans managed and controlled their forests through their local leadership.

According to him, colonialism introduced forest laws that drove Africans off their lands through excisions and by introducing title deeds, access to the forest was only guaranteed ostensibly through the shamba system. Ray (1977) and Berman (1985) observe that, in the initial stage of a capitalist society, local agriculture exists side by side with capitalistic vestiges which in this case was the shamba system. However, an FGD session held at Kipkapkabus forest, further revealed that, with time, access to Kipkapkabus forest was tightly controlled by forest guards and only shamba system activities were permitted. This decision systematically relegated traditional forest practices.

Apart from justifying that shifting cultivation was not responsible for forest destruction, another myth that this study sought to debunk was the narrative by Arthur Hardinge as quoted in Beinart (2000) that prior to imperialism and colonization, Africans had no established forests. This assertion sought to relegate the Center from forest establishment while giving prejudice to the Metropole as owners 'of forests. However, evidence abounds that on the eve of conquest of African lands which was subsequently followed by the application of the shamba system, forests in Kenya were held through public tenure system by various communities for purposes of performing rituals, grazing and for fetching herbs. Kinyanjui & Wamichwe (2014) argues that forests were managed by the local communities through the traditional resource management institutions in a non-capitalist mode. In a rejoinder to this debate which negates the claim that Africans were mere recipients in forest technology, Ray (1977) from his analysis of the nature of capitalism reiterates that the first stage of capitalism though championed by capitalism being dominant, capitalism in its essence generates transitional forms in this case undermining the existence of traditional forests.

Elgeyo Marakwet forest fits the description of the above scholars in terms of management on the eve of the adoption of the shamba system by first acknowledging that forests existed before and during the advent of colonization. Oral information in 2018 from Kipkapkabus forest attest to the fact that the indigenous trees and forests in Elgeyo Marakwet symbolized the institution of gods and spirits. Management of the forest was based on kinship and disputes were solved through negotiations. Clan tribal wars were witnessed. Advancing the narrative that Africans had forests before the imperial impulse is further exhibited by modes of forest use that were in place. Revelations by Muchaga (1998) attest to the fact that 46 the Isukha and the Idakho of Western Kenya first and foremost had forests. In those forests, there were trees that were identified as medicinal.

Those trees were preserved through appropriate taboo system besides the existence of traditional laws relating to the ecology that were administered by elders. The contribution of those traditional African beliefs in ecological conservation, however, has been largely devalued by Eurocentric opinions notably Ofcansky (1984) and Crosby (1986). In an evaluation of tree and forest tenure system Mbote (2008) aptly demonstrated that the pattern of forest use was established on a clan basis. For instance, rights of cattle grazing and cultural practices was a decision of each and every clan depending on their proximity to the forest. Observations by Muchaga (1998)

and Mbote (2008) on clan control of natural resources concurs with our findings from Elgeyo Marakwet forest in 2018 whereby an elder, revealed that clan elders controlled the allocation of land, forests, hunting and organized succession of the same forests. Furthermore, he managed resources such as land on behalf of his clan to ensure sustainability.

Traditional forest use and appropriation were not applied without rules and regulations. Moreover, observations by Opanga (2008) reveal that clan elders enjoyed absolute powers over natural resources and they used force to ensure that these customary policies are followed to the letter. There has been a contest over the role and existence of customary policies in forest conservation. On the one hand Mwangi (1998), Castro (1990) and Odera (2004), have heralded the existence of customary policies in forest management. For instance, in Kachung forest in Uganda, it has been discovered that communities down the millennia have developed elaborate rituals and practices that restricted forest use. In Kenya, assertions by Gebremichael (2016) concur with Mwangi (1998) and Odera (2004) Castro (1990) that different communities practised varying systems of conservation. For instance, pastoralists maintained grazing orbits that traversed large areas of grazing blocks.

On the other hand, Eurocentric scholarships notably Ofcansky (1984) Anderson (2002) have refuted claims about the existence of traditional forest management mechanisms. For instance, Ofcansky (1984) blames shifting cultivation on traditional forest plundering which, according to him, could not be salvaged except by natural phenomena like disease, war and famine which controlled the human population. He viewed Africans as vessels that relied on natural phenomena to solve their problems. On the other hand, Anderson (2002) relegates the idea of conservation from Africa by positing that the idea itself grew from the 18th Century European experiences and would grow into a core concept in how both flora and fauna would be managed across the empire.

This is contrary to the position by Ofcansky (1984) and Anderson (2002) that Africans never embraced forests and environmental conservation. A Key informant in 2018 revealed that in Elgeyo Marakwet forest, customary policies were well understood and provided a sense of ownership among clans though such rules were not forcefully applied because they were attached to a particular taboo which people feared. An FGD session held at Kapcherop forest in Elgeyo Marakwet further established that some of the informal systematic taboos that were used in forest conservation included: a taboo to cut (a Holy Tree) 'Lipkwop'. This ensured proper preservation of that particular tree for both present and future generations. Forests were also protected as both ritual cultural sites. Land within the forest was held communally as explained before and each person had rights of access based on his needs. Such rights were guaranteed by a political authority that ensured that such access was enjoyed equitably.

Moreover, traditional forests were protected by other taboos which were enumerated by the FGD session at Kapcherop forest in Elgeyo Marakwet. They included: 'Do not use holy tree 'as fire wood 'Lipkwop'. Consequence of violating this by the perpetrator would instigate spirits to send fire to bring down the perpetrator's house. The colonial

administration encouraged some of these traditional conservation models in rivers and forests. Taboo against using a certain tree species as firewood specifically helped in conservation of forests. A wide variety of local level controls were spearheaded over use of forests and were followed. Though this is disputed by Ofcansky (1984) and Anderson (2002) who disregarded traditional conservation as a mere charade and instead credited imperialists for coining the term conservation and consequently introducing it to Africans. Muchaga (1998) however, concurs with the position of this study that every society in the world had its own knowledge, norms and practices which were enshrined in their socio-political and economic milieu. These practices that were vested in old people who were believed to be inspired by ancestral spirits helped the people to interact with their environment. They identified and preserved these plants in a taboo system.

According to the elder, these were areas for worshipping their God Nyasaye, offering sacrifices for cleansing and for rain making. There were also avenues for rain making. The elder recalls that there were certain areas in the forest where people were not allowed to hunt, graze animals. On the other hand, decision making over use of any forest was quite intensive and was made in line with the customary rules. For instance, it was the responsibility of the elders to authorize tree harvesting and use of forests for ritual purposes. Knowledge acquired over time with ownership of these forests was transferred through inter-generational transfer of family rights. These positions have been authenticated by various studies that have demonstrated that Africans conserved the environment by use of customary regulations which were beyond reproach.

The existence of these customary rules reveal that Africans were not mere recipients of technology, they had their own conservation mechanism which helped them manage their forests. This set of argument is in tandem with Mavuhunga (2014) in his study on professional hunting among the Shona of Zimbabwe, where he notes that Africans had advanced hunting skills before imperialism and colonization. It is from this particular sub-theme that this study sought to demystify the myth that Africans never had forests before imperialism nor conservation mechanisms of natural resources as held by Eurocentric scholars. This justified the need for the quest for knowledge of the environment by the people of Elgeyo Marakwet forest before the advent of colonization. As Otieno (2008) aptly put it, forests were referred to as dense wood lot of thickets. They were not alienated spaces but were open spaces that were interconnected with human society through inter communal and religious uses.

IV. COLONIALISM, FOREST MANAGEMENT AND THE ADOPTION OF THE SHAMBA SYSTEM IN ELGEYO MARAKWET (1957-1963)

In Kenya, colonialism lasted roughly 68 years. In view of the period of colonialism Fastone (2016) bisected the four epochs of forest history as follows: Contests and negotiation for African forests 1885-1910, The struggle for colonial

forestry 1910 -1925, Period of consolidation and opposition 1925-1945 and Scientific ascendancy 1945-1963. The scope of this study fits within the matrix of scientific ascendancy in that it was the period in which formal forest policy was unveiled in Kenya besides being an era when the shamba system was intensified in all forests in Kenya.

This sub theme focused on examining the forces that were behind the evolution of forest policies in Kenya which consequently led to the adoption of the shamba system. Before that, however, there has been a controversy on the effect of colonialism on African forests and ecology in general. There is a collection of studies that holds the position that colonial practices had adverse effects on African forests and ecology. Other studies with moderate approaches such as Ofcansky (1984) however, hold on to the opinion that as much as colonialism had adverse effects on the environment, they introduced technology that they believed was geared towards economic and environmental conservation.

In the post-colonial Elgeyo Marakwet, Shamba System policy was introduced in the area in 1970s (Limo, 2016). The government cleared allocated land (plots) in the government forest land in Kipkapkabus forest, Kapchemutwa forest, Kaptagat forest, Kessup forest, Sabor forest, Benon forest, Kapcherop forest. Cheptonge forest and Tirop forest to grow food crops (Christopher Chebii, O.I., 8/8/2016). The farmers cultivated maize, beans and potatoes on previously clear-cut forest land as they replanted trees (Kenneth Cherop, O.I., 06/4/2022). The forest cultivators were integrated into the Forest Department as resident workers (Kagombe & Gitonga, 2008). They were allocated Shamba(land) to cultivate and guaranteed work for nine months per year. In addition to the shamba, agricultural produce from shamba was considered part of workers' emolument (Oyugi, 2022).

In 1975, resident workmen were permanently employed by Forest Department (Kagombe & Gitonga, 2008; Limo, 2016). They were required to hire shambas from Forest Department (Kagombe & Gitonga, 2008). Oral interviews revealed that in 1975 new people from outside especially from the Kikuyu community came to Kapchemutwa, Kapcherop and Kaptagat government forest land, to hire shambas for cultivation (Christopher Chebii, O.I., 8/8/2016). Due to influx of people from outside (Kikuyu), the number of shamba system cultivators increased significantly, that resulted to poorly tended shamba and low survival of planted trees (Limo, 2016). Thus, this interfered with food production through the shamba system. As a consequence of poor management of the planted trees, the system was banned through a presidential decree in 1987(Kagombe & Gitonga, 2008).

In 1988 all forest workers residing and other people living in forest villages were evicted from forest areas in Kenya, including in Elgeyo Marakwet (Kagombe & Gitonga, 2008; Limo, 2016). In the same vein, in 1994, the Government embarked on a retrenchment programme, where some forest workers jobs were terminated. This resulted to acute shortage of labour in Forest Stations (Kagombe & Gitonga, 2008). Oral interview with one of retrenched forest worker revealed that there was low survival of planted seedlings at Kapchemutwa government forest land and Kaptagat government forest land due to lack of maintenance, it also affected food production among the residence of Elgeyo Marakwet who had cultivated

plots in the forest since their crops were destroyed (William Chepkon'ga. O.I., 7/6/2022). According to Kagombe & Gitonga, (2008) less than 20% of clear-felled areas were replanted and 80% of the replanted areas were not weeded. Thus, participating Elgeyo Marakwet cultivators suffered loss of food, contributing to food insecurity.

In 1994, the government reorganized and reintroduced the shamba system in a few Districts including Keiyo District and Marakwet District in Elgeyo Marakwet as Non-Resident Cultivation, under the Non-Resident Cultivation, the farmers were not allowed to reside in the forest areas (Kagombe & Gitonga, 2008). Additionally, the authority to manage the new shamba system (Non-Resident Cultivation) was transferred from Forest Department to District Development Committees (DDC) in order to integrate the system into the District Focus for Rural development (Wanyiri et al, 2001). Thus, by 1997 District as Non-Resident Cultivation had started in all major Forest plantation Districts in the Country including in Elgeyo Marakwet (Kagombe & Gitonga, 2008). However, oral interviews revealed that this gave local politicians leading role in allocating shambas, thus, resulting to disregard of the advice from the technical departments on shamba system development (Christopher Chebii, O.I., 8/8/2016).

As a consequence, by 1999, large and unsuitable areas of Kapchemutwa and Kaptagat government forest land had been opened for cultivation while no meaningful replanting of trees was taking place (Chelal Mbuni, O.I.,7/6/2022). Thus, it can be argued that the implementation of Non-Resident Cultivation did not therefore give due regard to environmental management issues, contributing to ecological disruption, affecting food production and food security. Additionally, oral interviews revealed that the involvement of politicians led to corruption in the plot allocation. Politicians allocated suitable areas of the government forest land and large plots to members of their clan, friends, supporters, and relatives (William Chepkon'ga. O.I., 7/6/2022). In this situation, harvested areas in some places were not replanted while in other planted trees especially in Kaptagat government forest land and Kapchemutwa government forest land were destroyed to make way for food production. Coupled with the termination of the World Bank-funded Kenya Forestry Development projects in 1998 greatly affected the replanting programme. Government of Kenya funds allocated to the Forest Department for seedling production, planting, weeding and general planting maintenance reduced from Ksh. 390 million in 1996 to Ksh25 million in 2000. Thus, this interfered with the forest ecological system, affecting future food production and food security.

In the year 2000, the Forest Department headquarters found it necessary to step in and issue management guidelines on Non-resident Cultivation and an inter-institutional task force comprising of officers from Forest Department, Kenya Forestry Research Institute (KEFRI), Kenya Wildlife Service (KWS), and the Nyayo Tea Zones and Conservation Corporation to review the implementation of the Non-Resident Cultivation (Wanyiri et al, 2001; Kagombe & Gitonga, 2008; Limo, 2016). The report of this task force came up with cultivation guidelines which emphasized good management of the areas under cultivation, involvement of cultivators in reforestation and closure of the areas that could not be

replanted immediately (Limo, 2016). These efforts gave positive results in 2003 from some forest stations especially in Central, Eastern, and Rift valley province.

In Kenya there was increase in the annual planting from 3000 hectares in the year 2000 to 8000 in the year 2003 (Kagombe & Gitonga, 2008). Good progress was also reported in Kaptagat forest and other forest lands under shamba system in Elgeyo Marakwet (Limo, 2016). However, this was short-lived, Non-Resident Cultivation was again banned by the Ministry of Environment and Natural Resources in October 2003 (Limo, 2016). The ministry noted that shamba system had become laden with corruption by corrupt Kenya Forest Service officials (Foresters) who were allocating themselves huge chunks of forest land with little attention to plant or tending to tree seedlings, destroying or allowing the destruction of planted trees (Kagombe & Gitonga, 2008). Thus, participating farmers in the shamba system arrangement in Elgeyo Marakwet were asked to remove their crops from the Forest areas by mid-2004 (Pius Kemboi, O.I., 16/6/2023). However, some farmers were hesitant to move out, and continued with cultivation, creating conflicts with the Kenya Forest Service officials.

In 2005, the government enacted Forest Act (2005) which made provisions for the conservation and management of public forests and private forests, including areas of forest land that require special protection (Agevi, 2016). The act put management and conservation of forests under different management regimes including traditional community forest management (Agevi, 2016). This act of 2005 also introduced Plantation Establishment and Livelihood Scheme (PELIS) which is managed by Kenya Forest Service (Formerly Forest Department) to help increase forest cover and restore degraded forest in the country (Agevi, 2016). Through this arrangement Forest adjacent communities (FAC) benefit from scheme by forming Community Forest Associations (CFAs) where they are allocated plots upon which they plant seedlings, take care of them till the area the form closed canopy while the practice crop cultivation on the forest land.

Oral interviews stated that forests in Elgeyo Marakwet that were once characterized by birds chirping and singing has lost its charm with the planting of exotic trees in forest plantation which have been harvested since 2014 (Christopher Chebii, O.I., 8/8/2016). Oral interviews with the Kapkogo Forest Associations members opined that there is wanton destruction of the government's forests in Elgeyo Marakwet (Christopher Chebii and David Kuto, O.I., 8/8/2016). The association was registered in 2008 as community initiative to rehabilitate a large section of Kapchemutwa forest with indigenous trees that was to reduce demand for timber that is sourced from exotic trees especially cypress (Christopher Chebii and David Kuto, O.I., 8/8/2016).

With this association, farmers were allocated sections of the depleted forest land under the plantation Establishment Livelihood Scheme (PELIS). The community cultivated potatoes, beans, maize and grass for cow fodder in exchange for planting tree seedlings provided by Kenya Forest Service at Msekekwa and at Sin'gore stations. This has resulted to partial restoration of the depleted forest, however, at a slower base (Pius Kemboi, O.I., 16/6/2023). This effort by Kapkogo Forest Associations to restore the forest cover,

notwithstanding, it is also important to mention that, in the recent past, there are serious environmental degradation challenges facing the County of Elgeyo Marakwet especially on forest resources as a result of over-exploitation of forests through wanton harvesting of plantations (GOK,2013). To solve this, the County Government of Elgeyo Marakwet in its County Integrated Development Plan (CIPD) 2013 - 2017 in addressing this challenge proposed full enforcement of the various government Acts and Laws that protect the environment and undertake reforestation programmes of open gazetted public and community forest areas (GOK,2013).

While quoting Andre Gunder Frank, Rodney and Amin, Machaga (1998) noted that the advent of colonialism in Kenya undermined and distorted the basis of traditional ecological knowledge of the Elgeyo without introducing viable alternatives. He notes that this distortion was accomplished by forceful seizure of land, livestock and the eventual ecological disaster that had considerable economic impacts. According to Andre Gunder Frank, Rodney and Amin, colonialism arrived on the African scene with unsurpassed technological fury which led to the exploitation of African natural resources with intensity and without due regard to the long-term effects on the life supporting systems of the environment. With regard to forceful seizure of land, exotic forests were consequently established.

Ray (1977) observes that the second stage of capitalism entails the development of large-scale industry which demonizes most of the vestiges of domestic modes of production. The shamba system was one of the technological aspects of production that was used by the imperialists to produce timber. According to Machaga (1998), Ander Gunder Frank, Rodney and Amin view colonialism as an agent of socio-economic, political and ecological change that alienated local Elgeyo communities from their traditional institutions of resource management. A case in point is the shamba system. Machaga (1998) further opines that colonial ideas about nature were based on the European enlightenment dualism between human and nature. In this ideology of human and nature nexus, indigenous people and their lands were portrayed as areas of rational deficit – unused, empty and underused.

Having concluded that Africans had conservation mechanisms before the advent of colonialism, with evidence from Corbetts and Murombedzi on European exploitation of resources, it is obvious that it is the colonizers that badly needed forest policies. On the other hand, Gebremichael (2016) and Mwangi (1998) concur that colonialism never introduced the idea of conservation but rather transformed Africa's models of conservation by introducing their own models which they regarded to be superior. Gebremichael notes that conservation is as old as the period during which human beings have interacted with their environment. However, with the advent of colonialism, many areas in East Africa became European centers for conservation ideology.

This qualifies our earlier position that Elgeyo Marakwet community had forests and models of forest conservation before the advent of colonialism. The advent of colonialism saw a significant rise in scientific management of forests in the region through the shamba system. Scientific management of forests was an embodiment of the state within which forests were abstracted, simplified and categorized according to their

use to the state (Fastone, 2016). On the other hand, Barman (1985) assessed Settlers who came to Kenya as extremely eclectic in character and overwhelmingly moneyed. To them, Kenya was not to be a poor white colony. In this regard, systematic alienation of rich agricultural and forest land which informed policy formulations took place. Various forest policies and legislations were formulated which influenced the adoption of the shamba system as from the year 1957 as espoused in this sub-theme. This was the period of 'scientific ascendancy' in forest management in Kenya as posited by Fastone (2016). There was a global radical change in forest policy in the post second World War from defence to economic exploitation. As a scientific principle in forest management, the shamba system was adopted in all British dominions to enhance a faster economic growth.

While Fastone (2016) captured the period leading to 1963 as the period of 'scientific ascendancy' in forests in Kenya. According to Holmes (1975) this period was referred to as Re-appraisal' in Kenyan forests which, according to him, started in the year 1957-1973. Both Fastone and Holmes. Re-appraisal and Scientific Ascendancy was a period that was characterized by an extreme rapid change in technology, attitude and values associated with forests and the environment. It was also a period of frequent appraisals and review of forest policy which aimed at changing the functions and values of forests both in social and economic terms which led to the adoption of the White Paper in 1957 as the first formal forest policy in the colony.

The rapid changes in forest technology during The Scientific Ascendancy era resonates with the articulation by Ray (1977) of the second stage of capitalism which entails the development of large-scale industry as local farmers are structured as full-time commodity producers. As observed in the previous paragraph, the White Paper became the first formal forest law in Kenya (GOK, Sessional Paper No1, 1968). The White Paper No.85 part (b) reiterated forest preservation policies of the colonial government. Among other things, it entailed: Setting out the colonial government plan of creating forest reserves for creating forests for national export, demands for timber and other forest products and reserving more land for forestry in light of the role of forests in soil and water conservation. It also sought to manage forests sustainably to ensure that Kenyans continued to receive forest products perpetually. Besides that, it recognized the importance of forests as both recreational and wildlife habitats which would attract tourism.

In discussing the expansion of the shamba system as envisaged in the White Paper No 85 of 1957 which was later followed by the fall of the Mau Mau movement in Central Kenya in the year 1960. Elkins (2005) and Furedi (1989) observe that the shamba system represented a model used by the colonial government to reward the Kikuyu who had remained loyal and had helped the British. To both the Kenyatta and Moi governments, forests were treated as valuable patronage resources that they used to consolidate support and fund campaigns. However, contrary to the shamba system practices in Central Kenya, in Elgeyo Marakwet, in contrast to Mau and Mount Kenya forests, shambas were allocated to residents without due consideration of their

political affiliations nor role in entrenching the imperial impulse as was observed by an oral informant.

On the other hand, opinions are sharply divided on the development record colonialists made in forestry on the eve of independence in 1962. There are opinions that cherish colonial forestry for having left an admirable development record. On the other hand, there are voices that consider the current forest challenges then blame colonial forestry as the cause. For instance, while focusing on the effect of the shamba system on ethnic groups that lived in proximity to Mt Kenya forest, Castro (1990) painted a picture of Africans struggling to find a voice within the forest department. He recounted how colonial forestry was able to replace indigenous forest systems that hitherto existed and provided spiritual resources to people around Mt Kenya, thereby eroding their culture.

In concurrence with Castro (1990), Dominguez (2020) notes that colonialism was premised on exploitation of colonized people, their resources and territories. He blames colonialism for having separated indigenous people from their natural environment which formed a crucial component of colonization besides imposing a concept known as fortress conservation. Fortress conservation was based on the belief that biodiversity protection is best achieved by creating protected areas where ecosystems can function in isolation from human disturbance. On the other hand, Mwangi (1998) and Fastone (2016) hail colonial conservation for having caused an increase in forest reservations under government control besides slowing down the forces of forest destructions both real and perceived. In particular, Fastone, emphasizes that, on the eve of Kenya's, independence from British rule in the year 1962, the forest department stood on a firmer ground than ever in its 60 years of existence.

He notes that the shamba system demonstrated its strength as being able to provide timber and fuel to support the modernization of the economy besides accommodating over 10,000 people who could live and work in the forest. An examination of both sets of opinions on the colonial record in forest management revealed that colonialism positively transformed Elgeyo Marakwet. First of all, it is imperative to demystify the myth that the shamba system was a component of fortress conservation as asserted by Dominguez (2020) in an assessment of colonial legacies in wildlife and natural resource conservation. On the other hand, the assertion by Castro (1990) on colonialism having eroded people's culture in Mt Kenya by destroying their sacred places of worship is a spiritual and social point of view on the legacies of colonialism. The current study focused on economic change and the debate here was on the development record left by the colonialists on the eve of independence. The shamba system according to Ongugo (1986) operated on the premise that residents were allocated forest plots which they could farm alongside tendering tree seedlings for 3-5 years after which they were allocated other plots within the forest. Ongugo's definition of the shamba system aptly demystifies the narrative that the shamba system was a fortress of conservation.

The post-independent governments continued with Scientific ascendancy in forest management. As described previously, scientific ascendancy era was a period of major reviews in forest policy. This period that was attached to extensive research and forest policy changes was common in

British dominions. For instance, Siscavati (2017) and Gebremichael (2016) have discussed remarkable forest changes that took place in this period in Indonesia and Uganda. In Indonesia, after Surkano's regime lost power in the year 1966, the new regime led by Suharto (1966-1998) adopted an approach that envisaged natural resources as the main source of economic growth. In the name of national interest of economic growth and development, the regime promulgated laws on forestry and natural resources including basic forestry laws No5/1967 which consequently were put under the central government.

Similarly, to Indonesia, Uganda gained independence in 1962 and passed policies to centralize forests. Importantly, in the year 1967, Gebremichael confirms that a new constitutional dispensation brought all forest reserves which were hitherto managed by local councils under the Forest Department which was spearheaded by the forest department. Moreover, the period 1960- 1970 witnessed significant research activities led by Norwegian International Development Agency.

From the foregoing discussions, it is clear that the scientific ascendancy period was accompanied by dramatic changes in forest policies not only in Kenya but also in most British colonies. Evidence abounds that there were attempts to evaluate both social and environmental benefits of forests notably as avenues of employment, landscape and recreational development and a view that forests should continue to form part and parcel of rural land use articulated by Holmes (1975). The bone of contention in this discussion, however, is whether research and policy changes in forests after self-rule in these British colonies contributed to forest restoration. In Kenya, the period of scientific ascendancy not only culminated in the adoption of the first ever written forest policy in 1957 but further amendment of the same policy in the year 1968.

According to G.O.K (1968), in a Sessional Paper No 1 in the year 1968 amendments were made to the 1957 White Paper which sought to reserve, manage and protect forest due to their values in the economy of Kenya besides having a joint administration of forests with county councils. Reidar (2003) confirms that as from the year 1960-1970 industrial forestry dominated forests in the world with emphasis being put on forests as an engine of economic development and modernization. Forest industries were to play a leading role in the economic take off especially in the third world countries. Reidar (2003) further notes that, in spite of some positive results in the initial phase notably, production of enough timber for export, timber was simply exported as round wood which led to considerably felling with little planting. In addition to little planting, the use of modern technology led to unemployment in forests.

V. SHAMBA SYSTEM AND THE ARTICULATION OF ELGEYO MARAKWET AGRO-PASTORAL ECONOMY INTO CAPITALIST ECONOMY

Studies on economic change have been undertaken by a number of scholars. However, for this study the following studies were reviewed: Zeleza (1990), Ndege (1987) Amatsimbi, (1993), Onduru (2009), and Cokumu (2001). The

scholars above contend that change is the essence of every human society and is therefore the primary object of historical inquiry. As man struggles to satisfy his needs for material existence through production, he interacts with nature and transforms it. Man's mode of economic existence is also manifested as he adapts himself and his institutions to the changing environment. Change also occurs when one community, existing in a different life, interacts with another.

Besides that, the above scholars also hold that this is what happened when different communities came into contact with each other over past centuries and also when they came into contact with colonialism. It would be interesting to know how people interacted with and conserved their forest environments for instance, the Elgeyo Marakwet. Nevertheless, aspects of production were transformed and people incorporated into the world capitalist economy. For instance, Zeleza (1990) examined the major economic changes both in terms of policy and performance by reviewing various sessional papers and development plans in the period 1989- 1993. He analyzed the agricultural sector, industry and commerce and posited that economic changes were accompanied by far reaching changes in social class formation. He gives a detailed summary of the problems bedeviling Kenya 's economy with unemployment being top of the list.

This work was beneficial to this study in that it helped in tracing economic changes in Kenya since independence. However, it did not appreciate forests and shamba system policy as phenomena that accentuated economic change which this study undertook. Other arguments promote the narrative that during the colonial period, there was a shift from precapitalist to capitalist modes of production. This shift did not occur due to internal dynamics of the society but was imposed by the colonial government. Moreover, the colonial government used its political machinery to integrate the indigenous economy into the world economy.

In Kano, economic change occurred when crop production replaced cattle keeping economy as a means of production (Onduru, 1992). This study was significant to the current one in that it displayed various aspects of the economy that changed as a result of imposition of British rule in Kenya that provided a bedrock for the same study in Elgeyo Marakwet. Nevertheless, these findings motivated the need for this study to examine how the economy of Elgeyo Marakwet changed through the application of forest policies in the region.

Agevi (2016) contends that, prior to colonial establishment, the people of Elgeyo Marakwet had an efficient, self –sustaining and dynamic agricultural system. He argues that colonialism played a pivotal role in incorporating agriculture in Elgeyo Marakwet into the colonial capitalist economy. In this case, commodity production, wage labour and markets developed and by large, extended. Ultimately, indigenous agriculture was dissolved and restructured. By transforming forestry through the introduction of shamba system, new methods of tendering trees and crops were introduced which led to significant economic changes.

Colonialism therefore transformed Elgeyo Marakwet from traditional 'to modern 'forms of management, first by introducing private property land holding system which hitherto were public. Secondly, Elgeyo Marakwet was

transformed from traditional modes of management to the shamba system mode of management. Among the notable changes that the colonial government exerted on the Elgeyo Marakwet community entailed seeking work in the European farms. Demand for taxes also forced the Elgeyo Marakwet into the labour market with the establishment and elaboration of the money currency that opened avenues for trade (Amatsimbi, 1993).

Migrant labour in Elgeyo Marakwet Forest involved both gender as men and women went to the forest for either informal employment as farmers or got formal employment by the forest department. The economic status of the community changed because of the wages that they were paid. This helped them pay school fees for their children. The fringe benefits such as owning plots for farming made them guard the forest from plundering. Thus, even though the colonial state played a pivotal role in incorporating the Elgeyo Marakwet economy into world capitalism, it did this through political contests and by establishing repressive administrations using colonial chiefs. These aspects instigated economic change in Elgeyo Marakwet. They included introduction of taxation that transformed the pre-capitalist societal formation of Elgeyo Marakwet, development of colonial agriculture, development of commodity production especially from hides and skins of animals, development of roads, markets, entrepreneurship and migrant labour.

VI. EFFECT OF THE SHAMBA SYSTEM MANAGEMENT ON ELGEYO MARAKWET FOREST (1957-2012)

The economy of a society is the foundation of social demographic and material gain as opined by Bouchat (2010). In regard to this assertion, there are several components that contribute to development with natural environment being particularly important to the success of economic activities which include agriculture, forestry, fishing, hunting and gathering. Most importantly, the engine for economic transformation has been through Green Revolution '. Scientific ascendancy to forest management that entailed a review of forest policies and, consequently, the adoption of the shamba system outlived the colonial epoch and remained central in the development strategies of African states and international agencies.

Observations by Ndege (1987), Onduru (1992:2009), Amatsimbi (1993) and Cokumu (2001) concur that colonialism transformed the modes of production especially in agriculture and consequently, incorporated the people into the world capitalist economy. This study, however, delved into the economic changes that were witnessed in Elgeyo Marakwet forest following the application of the shamba system. Extensive research has been undertaken on the interaction of people living in or on the fringes of forests in regard to forest utilization and their economic activity. Evidence from these studies concur that population density of the people living adjacent to forests would determine the level and manner of resource exploitation.

Such studies include Schoffeleers (1979), Yanagisawa (2008), Showers (2006) and Mundi (2020). They observe that

historically, people who lived in and on the fringes of the forest exploited the forest once iron tools were available besides conducting agriculture. They also observe that sedentarization and agriculture changed the relationship between humans and environment in that with increase in human population, interactions between human groups became more important hence they were able to exploit forests through settlement, hunting and as avenues for pasture. On the other hand, Castro (1990) partially concurs only on the aspect of settlement. He observes that the Kikuyu people on the eve of imperialism had enough land, livestock and labour in the form of extended clan and increase in number of trade caravans into the interior made them set aside forest areas for pasture and for exchanging animal products with the Caravan traders.

Studies such as Matheka (1992), Waweru (1992), Kizito (1998), and Lemoosa (1998) have been carried out in Kenya and have demonstrated interaction between humanity and their environment particularly on nomadic life, socio-economic and political aspects of the society in relation to ecology. The same trend has been predominant in the studies on the Elgeyo Marakwet (Chesang, 1973; Ruttoh, 1988; Kipkorir, 1993; Chebet and Dietz, 2000; Changa'ch, 2015; Cherop, 2020).

Findings from this study concur with the above observations except Castro (1990) on his position on forest communities displaying partial utilization of forests. Economic organization of the people of Elgeyo Marakwet was a product of the environmental factor. Evidence abounds that their way of life was organized and influenced by how the people related with the forested environment that attracted reliable rainfall that was suitable for farming. They practiced mixed farming which included cattle keeping and crop production. Environmental factors determined the migration and settlement of people and indeed some clans settled inside the forest while majority stayed on the fringes of the forest while they used the forest for hunting, and as shrines besides being avenues of herbal medicine.

Cherop (2020) writing on the role of traditional knowledge on food security among the Marakwet living in Aror Ward, noted that, Marakwet pastoralists mastered their ecological environment very well including the vegetative mineral nutrient value of each of the different grazing and browsing ecological vegetations (Highlands, escarpment, and lowlands). Their pastoral activities were also determined by seasonal changes in the physical environment. Cherop, further, submitted that food production and food preservations were organized along traditional patterns.

The people of the Elgeyo Marakwet are reputable crop cultivators (Critley, 1982; Kipkorir, & Kareithi, 2013; Kipkorir, 1993). They cultivated a variety of crops. The basic crops were finger millet (*Eleusine coracana*), and sorghum (*Sorghum bicolor*) (Kipkorir & Welbourn, 2008). How and when sorghum and finger millet were introduced into Elgeyo Marakwet region remains unclear and debate has centered on whether domestic cereals were introduced alongside domestic livestock during the Pastoral Neolithic c. 4000-2000 BP or later (Kipkorir, 1973, Chesang, 1973).

The pre-colonial Elgeyo and Marakwet people developed an elaborate calendar characterized by clearly marked seasons (Kipkorir, 1973; Chebet and Dietz, 2000). Oral interviews revealed that using their indigenous weather forecasting

knowledge and experience of their environment, the Elgeyo and Marakwet devised their agricultural calendar for agro pastoral production activities (John Cherwon, KII, 21/3/2022; Michael Sigira, KII, 21/3/2022). This agricultural calendar was concentrated at the beginning of the rainy seasons and harvesting periods (Kipkemei, 2020). The traditional year began with the first preparation of land by means of clearing the bush using moor (a traditional farm tool for clearing the bush) and the vegetation was allowed to dry in January (Ngatiato/n'gatyaaato) and then follow with burning (belso/belseet) of the dry remains (John Cherwon, KII, 21/3/2022).

The burning of dry remains of plants, weeds and other unwanted vegetation before ploughing was intended to fertilize the soil (Kenneth Cherop, O.I., 06/4/2022). The ground was broken up with a Makombe (hoe) and sticks in February (Kiptamo). The women then proceeded to loosen the soil by breaking up the lumps. Millet and sorghum were planted in March (Iwoot-Kut). This month marked the onset of rains and emergence of green vegetation hence the name (John Cherwon, KII, 21/3/2022). Millet and sorghum seeds were broadcasted at random (keleta kesuwek). This was done by a specialist (Kimoi Kop Maiyo, O.I., 06/4/2022). The seeds were then covered with a thin layer of soil (keburbur).

Weeding was mostly done by women (Chebet and Dietz, 2000). It was done between April (iwoot) and May (ng'ei). These two months were weeding season and still were characterized by heavy rains (Salina Toyoi, O.I., 24/2/2022). Weeding was done by handpicking of weeds especially in the millet and sorghum fields.

The first weeding (Kibuuch) was done in April (iwoot) and it was done with a lot of attention as the millet and sorghum was still in the early stage of maturity (Kimoi Kop Maiyo, O.I., 06/4/2022). The first weeding was demanding; thus, it was mostly done in group (kibagenge) or through labour reciprocity (eunek), the second weeding was done in May (ng'ei) (Michael Sigira, KII, 21/3/2022). Harvesting was carried out by women in September (Kipsunde ne tai). A small knife (chepkeseit) made from iron-obtained from the Maasai (Cherop, 2020) in Uasin Gishu plateau was used to cut below the heads of finger millet and sorghum which was collected in baskets made of animal skin (Len'gu), and transported from the field to the home states or granaries. The harvested crops were sun dried and stored in the traditional granary (choge/kapchoge) (Kimoi Kop Maiyo, O.I., 06/4/2022).

The Elgeyo Marakwet crop producers had knowledge on soil fertility; they used different plants as indicators of either fertile or infertile soils. Oral interviews reported that members of the community were able to identify fertile land by looking at certain plants such as chepkotiwo (Black jack), chepkarta (*amaranthus lividus*), tilolwa (Fern), tebengwo (Bitter leaf) and arap bataa (Joseph Sawe, O.I., 4/7/2022). If found growing in a certain area, that area was recognized as area of fertile soil (Mary Sawe, O.I., 6/6/22). Such areas were cultivated for food production. The presence of grass such as chemorut (*Digitaria scalarum*) was indication of soil infertility, and such soils or areas were not cultivated (Kipkorir Busienei, O.I., 22/4/2022). Oral interviews further revealed that the aspect of fertility was also viewed upon the density of the derived vegetation. Dense

vegetation was also an indication of fertile soils and stunted vegetation was a sign of infertile soils.

Livestock keeping is what the Elgeyo and Marakwet of Kenya has been doing over time to survive (Kipkorir, 2008; Changa'ch, 2011; Cherop, 2020; Tarus, 1994). According to oral interviews, the Elgeyo and Marakwet were originally a livestock keeping people (John C, Ruto, O.I., 3/5/2022). Elgeyo and Marakwet like other Kalenjin sub-groups initially preferred pastoralism to agriculture (Chesang, 1973; Kipkorir, 1973; Sutton, 1976; Chebet and Dietz, 2000). Historically, Elgeyo and Marakwet are known of their love and devotion to cows, a cow has a place of its own, a position next in importance to his children (Kipkorir, 1973; Chesang, 1973). The cow also referred to as tany in Elgeyo Marakwet is the greatest valued animal. From early age, children were taught on the importance of livestock, how to guard them against theft and how to raid other communities for livestock (Festus Kiprutto, O.I., 18/4/2022; Peter Kipchoge, O.I., 16/1/20022).

By around 1850, cattle economy had become very popular and a man's prestige was counted on how many head of cattle he had among the people of Elgeyo Marakwet (Chesang, 1973). Apart from the prestige, a large herd of stock was an assurance of food security in a household (Kenneth Cherop, O.I., 06/4/2022). Livestock keeping in the pre-colonial Elgeyo Marakwet have been a primary occupation among many other occupations such as crop cultivation, hunting and gathering (John Cherwon, KII, 21/3/2022). Davis (1962) surmises this aspect by observing that more people in various regions of the world depend on exploiting pastoral resources than any other agricultural enterprises.

Shamba system had remarkable effects on food production in Elgeyo Marakwet. An avalanche of studies holds that, in pre-capitalist Kenyan communities, land as a mode of production was occupied and managed at clan level. Works by Ndege (1987), Wanyoike (1991), Onduru (1992; 2009), Amatsimbi (1993), Cokumu (2001), Kamau (2013) and Wasike, (2018) asserts that land and land ownership was held by communities with authority emanating from clan elders. Family heads would then divide land and give it to individual mature male members. Most of these studies generalized on land use and tenure system. However, when it comes to forest land ownership, the closest point of reference was a study by Kamau (2013) who opines that forests were based on land. Forests were managed by clan elders and it was possible to have tenure arrangements where tree ownership and exploitation rights were held separately from land. By examining the transitional forms of capitalism as articulated by Pee (1980), findings from this study revealed that Elgeyo Marakwet forests were secured by the colonialists, modified and transformed from public to private tenure system which was consequently followed by the development of large-scale exotic tree plantations.

The shamba system created employment and consequently led to the rise of migrant labour. According to Amin (1974), a migrant worker or labourer is a person who either migrates within their localities or to an urban center to pursue work. He further asserts that in colonial times, migrations occurred due to a series of labour requirements for plantations and, later, administrative opportunities. Studies in economic change by Ndege (1987), Onduru (1992) and

Cokumu (2001), affirm that the pre-colonial division of labour, which was well defined, was altered during the colonial period in that, as men went out to look for wage labour, women were left behind and they had to take up their duties. Women and children had to assume home agricultural production.

According to Beinart (2003) that changes in forest access touched the lives and livelihoods of rural men and women across Elgeyo Marakwet in more direct ways. They posit that majority of Africans in the late 19th Century and early 20th Century relied on wood sources for fuel, timber for building huts, many others utilized forests for crop cultivation and for livestock grazing besides deriving medicine from the forests. Colonial interlude would put restrictions on forest use. Contrary to assertions by Ndege (1987), Onduru (1992) and Cokumu (2001) reveals that the advent of wage labour saw women being left behind to take up home duties, however, was not the case with the shamba system. In concurrence with Cobbett (1987) and Beinart (2003), findings from oral sources revealed that forest access touched the lives of both rural men and women in equal measure.

Colonial forestry created employment for people in Elgeyo Marakwet with the creation of the forest department. However, the manner in which the forest department was run in terms of recruitment has elicited debate on whether Africans were not qualified or it was done on favoritism that saw Whites dominate senior positions with Africans occupying junior positions. Fastone (2016) reveals that there was a period when the forest department was reluctant to employ Africans in the positions above that of forest guard. The reason the department gave for this was the difficulty in finding Africans who were sufficiently educated to take up the senior positions. On the other hand, Dominguez (2020) criticizes colonialism as being premised upon exploitation of the colonized people. The confinement of Africans to junior positions is attributed to a wider quest of colonial policy that sought to separate indigenous people from their natural environment. Archival information regarding employment confirms that, in the colonial epoch, administrative and all senior positions in the forest department were held by whites, and clerical jobs were reserved for whites. Casual labour was left for Africans who were mostly men (KNA8/8/1921: Troupe Commission).

On the other hand, the development of wage labour attracted many Africans both in Elgeyo Marakwet and beyond. This coincided with the period of industrial forestry 1960-1970. As articulated by Fastone (2016), emphasis was put on forestry as the engine of economic development and modernization in developing countries and forest industries were to play a leading role in the economic take-off of these countries. In Elgeyo Marakwet forest, locals had two choices as revealed through an FGD session in 2018. They were either to seek for employment in the forest department or they could be self-employed in their respective plots; as farmers who were required to tend the trees as they take part in crop production which ultimately was their source of livelihood. An informant in 2018 revealed that those who were lucky to be formally employed in the forest department however, delegated their plots to close family members to cultivate on their behalf.

VII. CONCLUSION

This chapter has examined the government policies and legislation and its impact on agro pastoral economy, 1963-2013. The government policies and legislation set in motion on economic policies which directly or indirectly led to the transformation of the Elgeyo Marakwet agro pastoral economy, ecology and food security. Most notable of this policies was land adjudication policy that introduced private land tenure system causing competition and subdivision of land into uneconomical sizes interfering with agro pastoral production, government policy that established Kerio Valley Development Authority which attempted to rehabilitated Marakwet irrigation furrows, but failed, government policing policy to curb cattle rustling in Marakwet, Kerio valley which also failed in its effort, the introduction of new crops and establishment of hybrid maize research station in Kitale to enhance national food security, and the introduction of shamba system policy in Elgeyo Marakwet government forest lands. All these policies contributed in one way or the other in the transformation of Elgeyo Marakwet ecology, agro pastoral production, contributing to food insecurity, 1963-2013.

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