

Socio-Economic Impacts of Sugarcane Production from 1900 to 2020 in Bungoma County, Kenya

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Abstract: *Sugarcane production has played an important role in influencing farmers social and economic status over the years. This study interrogated the Socio-Economic Impact of Sugarcane Production from 1900 to 2020 in Bungoma County, Kenya. The study adopts a case study design to assess the social and economic impacts of sugarcane farming in Bungoma County. The target population included farmers and their dependents/beneficiaries, labourers in the sugarcane industry, that is, skilled, semi-skilled and unskilled; stakeholder representatives from the key agencies involved in sugarcane farming in the area; factory officials and field extension officers. A total of twenty respondents were sampled by the study through purposive sampling technique. Data collection instruments included observation protocol, interview guides and focused group discussion guides. Data was analyzed using standard descriptive methods and presented in the form of narrations and direct quotes where necessary. The findings of the study revealed that the sugar cane economy has had several social and economic impacts on Africans. Some of these impacts included, among others, the introduction of wage labour, the growth of urbanization and migrant labour. The recommendations included the restriction of the importation of cheap sugar and giving subsidies and incentives to sugar cane farmers to deflate the high cost of locally produced sugar.*

Keywords: *Sugarcane Production Impacts, sugarcane economy, sugarcane industry, sugarcane production socio-economic changes, sugarcane production colonial era, sugarcane farmers' livelihoods*

INTRODUCTION

The sugar economy globally, regionally and nationally indicates the existence of a poor and punitive contract system between sugarcane farmers and sugar factories. There is a resurgence of casual employment in the sugar cane and sugar production industry that contributes towards indebtedness, severe income poverty, patronage, vulnerability and precarious livelihoods (Lorentzen, 2009). This is because sugarcane farmers feel short-changed by the millers and lenders. Contracted farmers also have institutional problems because they need stronger bargaining and negotiating skills for the contract on equal terms with the sugar companies (Andama, 1997). Farmers have no say when payments are delayed after sugarcane harvesting, nor can they negotiate when the produce is declared sub-standard by the millers. According to Kenya's economic survey, the Muhoroni, Sony,

Chemelili and Nzoia sugar factories owed farmers about 890 million dollars in accrued debts (KES, 2017).

According to the study conducted by Bunde (2022) on the impact of relocation occasioned by sugarcane farming in Migori county, Kenya. The study established that there was a reduction in crop production due to the expansion of the Sony Nuclear farms thus resulting in food insecurity. The study also revealed that rural movement led to a decline in agricultural cultivation and food production. According to Omosa (1998), sugarcane farmers engage in the farming of crops such as sugarcane and use their incomes to meet their food needs on the market. However, the pressure on land resources has led to inadequate food to feed households all year round. This has been further exacerbated by population pressure, which means additional competition for resources such as land and water.

Sugarcane production also brought about immorality due to drunkenness. For example, in the study conducted by Swanson (1977), Gregory argues that Africans learnt to manufacture jaggery, which they used to make tembo (African local beer). The farmers adopted extension services, discarded traditional agriculture and adopted cooperative services. For example, the Nzoia Outgrowers Cooperative was registered by the Ministry of Cooperative Development and Marketing in 1987. The members were drawn from sugarcane farmers contracted to Nzoia Sugar Company (Wanyonyi, 2022). The establishment of the Asian sugar industry led to more people being involved in wage labour at the expense of agriculture in the reserves. Moreover, some of the labourers were engaged on three or six-month contracts, this duration was bound to affect agriculture, especially during the farming season (Osamba, 2016).

According to the study conducted by Kennedy (1989), the commercialization of sugarcane created employment opportunities and improved the overall welfare of small farm households. Commercialization of sugarcane also led to creation of social amenities such as schools and medical centres for the Europeans and the Asian communities. The Asians contributed to the building of schools by collecting money and building materials (Delf, 1963).

In reviewing the basic literature in the field, it is apparent that the previous studies lack a detailed assessment of the study subject. More specifically, there were several gaps in the literature reviewed on how sugarcane farming facilitated the outward migration of laborer's, the social and economic effects of contract farming, and the impact on food security and gender relations, among other effects. Any study dealing with the impacts of sugarcane production entails a consideration not only in Kenya but also other nations. This constituted the gaps that necessitated the study. As such, this study discusses the social and economic effects of sugar cane production from 1900 to 2020 in Bungoma County, Kenya in a more detailed manner. It begins by examining the impact that Asian and European sugar cane farmers had on the region. It then analyses the social and economic

implications of sugar cane production and the entire sector on Africans, particularly in Bungoma. The gender dimension of the sector is also discussed. Additionally, the data collection instruments, data collection procedures are discussed. Finally, the section contains the data analysis and presentation of the study.

METHODOLOGY

A case study research design was adopted as it allowed for in-depth investigation. The chosen design allowed for in-depth data collection on the socio-economic impact of sugar cane farming in Bungoma County. The study was carried out in Bungoma County, where sugarcane is majorly grown. The land tenure system in the study area falls under commercial and individual land ownership. Nzoia Sugar Company is located in Bungoma County, Bungoma South sub-county.

The study targeted residents of various wards who were knowledgeable about sugarcane farming. Clan elders were targeted since they are the custodians of the community's social and economic aspects and thus possess vital information as far as farming is concerned. The target population included farmers and their dependents/beneficiaries, labourers in the sugarcane industry, that is, skilled, semi-skilled and unskilled; stakeholder representatives from the key agencies involved in sugarcane farming in the area; factory officials and field extension officers. The key agencies involved in sugarcane farming include the Ministry of Environment, Natural Resources and Disaster Management, Ministry of Water and Irrigation, Ministry of Lands, Housing and Urban Development, Ministry of Agriculture, Livestock and Fisheries, Ministry of Labour and East Africa Affairs and Ministry of Health.

Purposive sampling was used to select a sample of 20 respondents, including: the elderly, sugar cane farmers, and factory workers since the researcher considered them to have vital information as far as the study was concerned.

The researcher used the observation protocol, interview guide, and focus group discussion guide as the primary data collection instruments. A total of one hundred and fifty respondents were interviewed.

Data analysis began in the field to avoid the loss of important information. All the tape-recorded information was transcribed and then arranged according to themes, objectives and periods. Analyzed data was presented in the form of narrations followed by first-hand quotations from the primary respondents. Qualitative data obtained from key informant interviews and Focus Group Discussions was transcribed, translated and analyzed to show trends, deviations and relationships based on the study objectives and research questions. Data presentation was done qualitatively and presented in a descriptive form.

RESULTS

Demographic Characteristics of the Respondents

The respondents included both male and female gender. The age categories ranged from twenty-five to seventy-five. The education level varied from certificate holders to degree holders. In some instances, the respondents did hold formal education certification but were found to be knowledgeable and conversed in the local language and Kiswahili.

Socio-Economic Impacts of Sugarcane Production

The study results observed that the Asians pioneered the sugarcane economy and contributed immensely to the social and economic aspects of western Kenya. They set up social amenities such as schools, hospitals, social halls, various club facilities, and temples. They introduced new architectural designs for building houses. In the early years of the colonial rule in western Kenya, the Asians established schools to educate their children. By 1920, several Asian schools had been opened in Kisumu and major towns in western Kenya.

It is important to note that though the schools in the colonial era catered for the Asian community in the entirety of colonial Nyanza, at independence, they were opened to a few African students. The Asians contributed to the building of schools by collecting money and building materials. Through such contributions, including the buying of books and stationery and payment of other fees levied in schools, the Asian cane growers and manufacturers in the Kibos-Muhoroni area, by extension, contributed to the building and maintenance of schools as most of their children attended schools in Kisumu, especially at the upper primary and the secondary level. With the political transformations at independence, these different Asian schools eventually were opened to all races.

The Asian initiative of offering social services in medicine began during the depression period of the 1930s due to the needs created when some Asians living in major urban centres like Nairobi and Mombasa lost their jobs while others had businesses that had collapsed. To address such problems, the Asian community came together, especially in the major towns of Nairobi, Mombasa and Kisumu, and formed a voluntary organization known as the Social Service League in the early 1930s. The league provided assistance during the depression, which included medical help where trained Asian doctors in the various towns offered their services to the affected people freely, while the league donated medicine.

This social service soon became permanent as Asians contributed to it, and soon afterwards, the league opened dispensaries and hospitals in various parts of the country, including Kisumu, Kakamega, Bungoma and Mumias. The Asians used their money to build clinics and hospitals that served even the local communities before independence.

The community continued to expand its medical facilities; by the late 1950s, Aga Khan Hospitals opened in Nairobi, Mombasa and Kisumu. Initially serving Asians, these were later opened to the public.

The capital accrued from the sugar industry led to the construction and maintenance of hospitals in Kisumu, Kakamega, Bungoma and Mumias. Sheth Haridas Chhagnal and Morzaria Chhagnal of Messrs Haridas Chhagnal Ltd of Kericho built the Jalaram Nursing Home. Meanwhile, the Guru Nanak Dispensary was built in Kisumu by the Siri Guru Singh Sabha fraternity.

The Asians also built buildings that introduced new architectural designs in the greater colonial Nyanza. The Asians living in Kisumu, Kakamega, Mumias and Bungoma built sports clubs such as the Sikh Club, Simba Club and the Goan Institute, where various sporting events took place. These venues continued to serve all races after independence as socializing places. In 1938, a significant Asian activity included the erection of the Kisumu clock tower by the Kasim Lakha family. The Hindocha Hall, Courtesy of the Hindocha Trust was built as a way of giving back to the community. This building eventually became part of Maseno University.

The Asians introduced an oriental style whereby many rooms were built within an enclosed wall with a main entrance. The Asian housing style also influenced Africans, who later copied the designs in the building of rental houses in Kisumu and the neighbouring areas such as Ahero, Kakamega and Bungoma.

Socially, Asians did not intermarry with Africans. However, in the interior of Kenya, Bharati (1976) points out that the Sikhs, who came earlier from India with no wives and had lived and traded with the Maasai, were known to have established quasi-liaison relationships with Maasai women who produced children.

The establishment of the Asian sugar industry led to more people being involved in wage labour at the expense of agriculture in the reserves, which suffered in turn. Not only did the absence of the male labour force impact agriculture in the sense that male labour was needed to clear virgin lands for cultivation. The women who were left at home had more tasks, such as taking over the responsibility of looking after livestock, which was traditionally a male domain. Moreover, some of the labourers were engaged on three or six-month contracts, this duration was bound to affect agriculture, especially during the farming season.

In the entire Nyanza and western Kenya, there was a decline in the production of food commodities, like maize, sorghum and Eleusine, between 1946 and 1951. However, the decrease in peasant production in the postwar period could also be attributed to other factors. First, there was a decline in demand for the peasant produce as the war came to an end.

Land alienated for the Asian cane farmers in Kibos, Muhorni, Mumias and Bungoma denied the African population room for expansion. Secondly, part of the alienated land was at the foot of the Nandi Escarpment, which was the most fertile land in the area. Other areas that were alienated included Webuye and Lugari.

It meant that African people were denied an opportunity to have the best land for farming. Land shortages resulting from Asian settlement affected peasant production and forced many Africans into wage labour in Kisumu town and at the nearby Asian farms.

Another negative phenomenon that emerged was that of drunkenness, which was prevalent in the African reserves. Asian farmers produced jaggery and used it to make their alcoholic drinks in small quantities. However, it emerged that the farmers at Kibos and other areas sold jaggery to Africans who not only consumed it as sugar but also used it to manufacture Nubian gin. Gregory (1977) argues that Africans learnt to manufacture jaggery, which they used to make tembo (African local beer). Thus, the colonial administration associated the sale of molasses and jaggery from the Miwani and Muhoroni factories with drunkenness, which led to lawlessness in the area. In the 1940s, the sale of the Nubian gin and other local brews was a major cause of problems in the African reserves. Hence, sugar started to be rationed in the reserve so that there would be no excess sugar that could be used to make the Nubian gin. Furthermore, the native tribunals heard many cases of drunken behaviour, and even headmen stepped up and tried to prohibit the supply of liquor to unmarried males and females in an effort to control bad behavior. In 1955, the District Officers in greater colonial Nyanza reported increased assaults in African reserves. Consequently, sugar allocation to African reserves was reduced to curb illegal brewing. The sale of Nubian gin not only offered competition but also interfered with the sale of licensed local beer.

The transition towards independence meant that sugar cane growing became a major African activity. This followed the enactment of Sessional Paper No. 10 of 1965, which allowed Africans to grow sugarcane for industrial sugar. Sugarcane became the main economic activity alongside maize, pearl millet, sorghum and dairy farming. Webuye, Bokoli, Kabuchai, Kimilili, Mt Elgon, and Tongaren in Bungoma became part of the "sugar belt" in western Kenya. Sugarcane growing brought agricultural transformation in Bungoma as farmers adopted new farming methods, recommended practices and socio-economic changes. The farmers adopted extension services, discarded traditional agriculture and adopted cooperative service.

The majority of the farmers, also stated that sugarcane farming boosted their chances of taking their children to school, especially for higher education, due to the lump sum amount of money obtained from sugarcane farming. The need to pay school fees, accumulate wealth and assets influenced sugar cane production in Bungoma. There were more enrollments in the primary schools within the sugar belt in Bungoma County. On the

other hand, even some schools went a step further and turned their playgrounds into sugarcane farms in order to earn more income at the expense of the physical health of their pupils.

KI 1 2022, stated that sugarcane farming opened up the area to development in terms of accessibility to education, as evidenced by the setting up of satellite campuses (K1, 20th September 2022).

The growing of sugar cane, kale, and coffee allowed farmers multiple sources of income that led to better housing conditions, reflected by the shift in housing structures from mud and thatch houses to brick and iron sheet-clad houses. Some farmers were able to invest in other ventures, such as dairy farming, after ploughing money back into their farms, which was found to be less labour-intensive in nature and gave farmers more time to focus on other money-generating ventures as they wait for the sugar cane crop to mature.

KI 2, 2023 had the following to say:

Atrend had developed among sugarcane farmers in Bungoma County, whereby they sold off their indigenous cattle breeds in order to raise money to cater for the production costs of sugarcane. In return, they used the proceeds from sugarcane to invest in dairy cattle, which are easier to manage given the limited resources, namely pasturelands and labour, due to zero grazing (K.I. 2,20/2/2023).

Some sugar cane farmers leased their farms at Kshs 8,000 – Kshs. 20,000 per hectare annually. Most of the respondents noted that they could afford better healthcare for their beneficiaries as a result of greater earnings from sugarcane farming as compared to maize farming.

The introduction of sugarcane farming in Bungoma County meant that farmers committed majority (70.0%) of their land to sugar cane farming, leaving only (30%) for subsistence food from their farms to feed their families all year round. They also depend on food from the local market when their farm supply runs out.

Most respondents argued that they do not have enough food from their farms to feed their households all year round. This lack of food to sustain their families was caused by some farmers leasing their farms to other sugarcane farmers right up to their doorsteps due to the increasing demand for land.

Regarding the same sentiment, K.I3, 2022 had the following to say:

The leases go up to Kshs. 20,000 per hectare of land leased for cane farming, up from a maximum of Kshs. 5,000 obtained from maize farming. The high

production costs meant they could not grow their own cane. Hence, they opt to lease out their land to those who are capable (K.I. 3, 20th Sept 2022).

In the same line, K.I.4, 2022 observed the following:

As sugar cane replaces indigenous foods, it has led to high malnutrition rates, especially among children. The reduction in milk production, vegetables and maize production has also led to food insecurity. This is further compounded by expensive food commodities from neighboring communities (K.I. 4, 22nd September 2022).

The general perception is that there is a lot of money from sugar cane farming that has been injected into the local economy as supported by one K.I 5, 2022 who had the following to say:

Sugarcane farmers are able to afford the overpriced commodities in market places. The period from 1980 to 2000 was adverse for sugar cane farmers. Household financial stability was worse, leading to challenges in food security, education affordability, and health, among others. There has been a downward trend of food security over time, which has been occasioned by more and more farmers devoting their land to sugarcane farming at the expense of other crops. With the several challenges associated with the sugarcane industry, the principal being delayed sugarcane harvesting and payment, farmers have had difficulty coping with food shortages. The period between 1990 and 2000 was the worst, with farmers not being paid for sugarcane delivered as late as three years down the line (KI 5, 2022).

The analysis of the contracts signed between farmers and the sugar companies in Bungoma revealed the following. The farmers supplied their sugarcane to Mumias Sugar Company. The farmers are paid within 45 days to six months of their sugarcane being processed. The opening clause of the contract states, on the part of the miller, states that sugar milling companies get into binding contracts with farmers in order to purchase sugarcane from them for extraction and manufacturing of sugar and its by-products. Generally, the terms of the contract dictate sugarcane outputs as the quality of goods and services offered by the miller to the farmer.

The miller determines the quality and quantity of cane harvested. Subject to weather changes, productivity and overall cane availability are stated as plant crop, harvested within 18-26 months, first ratoon, 16-24 months and second ratoon, 16-24 months. Millers also offer related products such as jaggery and other services in the form of agricultural extension services, transport and harvesting of cane(K.I 6, 22 September 2022).

On this clause, there is a fair distribution of returns as the miller provides quality and timely services in return for raw sugarcane of acceptable standards. Transport and harvesting services offered by the millers are done at a fee deducted from the price of raw cane tonnage. The same applies to the cost of seedlings delivered.

Furthermore, millers organize meetings and field days, which farmers are encouraged to attend for learning purposes aimed at proper sugarcane husbandry, operation and application of goods and services obtained from the miller for satisfactory sugarcane yield(K.I 7, 22 September 2022).

In this case, the miller profits from services offered while the farmer gets guaranteed and reliable goods and services during the production period. The miller extends credit facilities to farmers in exceptional circumstances, and in its sole discretion, provided set agreeable terms such as those regarding principal, interest and other statutory taxes are met. This allows the farmer to cultivate his farm on credit, only to be deducted upon the agreed amount when the cane is harvested and processed by the miller. Debt balances accrued by the farmer in the case of a bad season can also be warded off after agreeable repayment terms are set with the miller. This flexibility allows farmers to be able to survive ever-fluctuating sugar prices as well as vagaries of weather that occasion bad harvests. These terms also allow farmers to obtain payments for burnt sugarcane from arson, although at significantly low tonnages.

Most of the farmers interviewed said they were made aware of what sugarcane farming contracts would mean to them if they took up the contract. One of them had the following to say:

The miller is bound by contract to the farmer to harvest, upon maturity, one plant crop and two ratoon crops or for a period of about six years from the date the crop is planted, assuming cane matures between 18-24 months. In this case, the miller supplies the farmer with the seed cane, fertilizer, harvesting and transport of sugarcane to the factory(K.I 8, 23 September 2022).

However, the farmer is not bound by contract to purchase fertilizer from the miller or use the miller's transport services. These expenses are then deducted from the gross tonnage of harvested cane delivered to the miller. In this case, the miller has the upper hand as the farmer only gets paid for the tonnage of the harvested cane while the proceeds from the by-products, such as molasses and bagasse, are pocketed by the miller. This represents the skewed nature of this contract as farmers only benefit from sugar itself as the miller pockets the benefits accrued from the by-products. High production of sugarcane and constantly fluctuating prices compound farmers' woes at times, resulting in net losses.

In an effort to contribute to Corporate Social Responsibility (CSR), the millers offer services that benefit the community as a whole. The refurbishment of the roads; however,

farmers are deducted 1% of their proceeds from sugarcane to aid in opening up access roads and maintenance of already existing ones.

The generation of electric power from burning molasses to produce ethanol is sold by the companies, and hence, farmers do not benefit. In a bid to promote environmental conservation, farmers are encouraged to plant one row between cane rows of common beans, soya beans, groundnuts, mbabara nuts, Irish potatoes, tomatoes, onions, cabbages and carrots for up to the first six months of a given sugarcane cycle. This is as important for nitrogen fixation as it is in ensuring food security in an area mainly embracing sugarcane monoculture (K.I 9, 23 September 2022)

Some of the farmers lamented about sugarcane contract farming because of delayed payments, leading to indebtedness, poverty and food insecurity. The respondent argued that once they received their payments, it was used to settle outstanding debts. This forced farmers to venture into other economic activities. Some of the farmers destroyed their sugarcane and ventured into vegetable and dairy farming (K.I. 10, 23, September 2022).

Some respondents preferred cultivating private (non-contract) cane to avoid company deductions. Non-contracted cane allowed them to sell to any willing buyers without restrictions. However, it was observed that this had created opportunities for other sugar firms to infiltrate the area and poach the company-contracted cane. (K.I. 11, 23 September 2020). Nonetheless, most farmers asserted that growing and selling sugarcane privately has meagre returns.

K.I 12, 2022 had the following to say:

I sold out my sugarcane to Lorries. However, a cane that could earn Kshs. 40,000 through contract farming fetched Ksh.15, 000 locally (K.I. 12,23rd September 2022).

The Cane Crushing Machine was also used for making bagasse, a residue of cane stalk used as wood fuel. Farmers did not prefer selling the cane stalks to the local markets because it was not sold at once and did not earn much profit as it involved harvesting and transportation costs, which reduced the profit margin(K.I 13, 24 September 2022).

The analysis of the impact of sugar cane production on gender reveals the following from the Bokoli location of Bungoma County. Women actively participate in all domestic tasks, which include fetching water from long distances, milling grain, gathering wood, child-bearing and child-nurturing. This family labor is organized around the division of labor by gender, and in many cases, this division is based on Bukusu traditional norms. It was found that both men and women are responsible for weeding and top-dressing. However,

men also cut and arrange sugarcane in stacks before it is transported to the Nzoia Sugar Factory. Lastly, children engage in weeding, top-dressing, harvesting, cutting and arranging the sugarcane in stacks, as well as being supervised by their parents (K.I 14, 25th November 2022).

It was noted from the study that there was male dominance when it came to the distribution of income coming from sugar cane farming.

K.I15,2022 from the Bokoli location provided the following insight:

The respondent indicated that he received payment from Nzoia Sugar Cooperative 15,400.00 after all the deductions were made in 2019. Out of this money, the husband allocated himself Kshs. 13,000/00 and gave her Kshs. 2,400/00 for her contributions to the care and management of the cane. (K.I 15, 25 September 2022)

Many of the male respondents from Machakha village of Bokoli location of Bungoma County stated that they bought their wives shoes, clothes, baking flour, maize flour, milk, sugar, bread and tea, as well as paid school fees and medical bills. In other words, most women in Machakha village did not directly benefit from sugarcane proceeds in the form of direct money being disbursed to them (K.I. 16, 27th November 2022).

K.I 17, 2022 had the following to say:

The respondent stated that when he received the money from the NSC, he bought his personal hectare of land. The NSC paid him Kshs. 56,000.00 in 2019, from which it deducted Kshs. 13,500.00. According to the account of this informant, sugarcane farming has been personally beneficial to his family. This is mainly because their general standard of living has improved tremendously. Payments from the sugarcane have enabled them to buy a bicycle, a radio and build a new iron-roofed house. The money also enabled the husband to start his onion business. Today, the couple also boasts of piped water, chicken, and dairy cows in the homestead. (KI 17, 27 November 2022).

Another respondent, who has three wives in Chebosivillage, stated that he allocated his wives land where they grow sugarcane, bananas, finger millet, cassava, sorghum and maize. His wives take care of their sugarcane farms.

According to his wife (K.I 18, 2022) who had the following to say:

She stated that she has benefited from sugarcane farming because she has been able to construct a modern permanent house and pipe-borne water in the homestead. Sugarcane farming has also enabled her to start a hotel business in the nearby market of Matisi. She said that her husband does not interfere with the money from the sugar cane sales, but instead, she is the one who gives him money

from sugarcane sales only when she feels like it. She is the one who collects money from NSC(K.I 18, 27 November 2022).

From this analysis, sugar cane growing has a social and economic impact on gender relations in Bungoma. There is an actual economic gain being derived from sugarcane farming, and it contributes significantly to the material lifestyle of people in Bokoli location of Bungoma County. Women play the heavier role of planting, weeding, and harvesting while men at most cut the major cane and other supervisory roles in the family unit. This is a clear demonstration of male dominance attesting to the fact that patriarchal theory is still relevant in understanding the dominance of men in household economic activities (K.I. 19, 27th November 2022; K.I. 20, 27th November 2022).

DISCUSSION

The socio-economic impacts of Sugarcane production range from food insecurity, introduction of wage labour, urbanization and growth of migrant labour among others. The study discussed the socio-economic impacts of sugar cane production in Bungoma county in Kenya. It began by examining the impacts of Asian sugar cane farming in Colonial Nyanza. Several studies, such as (Lorentzen, 2009 and Andama, 1997) indicate a resurgence of indebtedness, poverty, patronage, precarious livelihoods, and high cost of transportation and inputs. According to the study conducted by Bundeh (2022) on the impact of relocation occasioned by sugarcane farming in Migori county, Kenya. The findings revealed that crop production had reduced since the expansion of the Sony Nuclear farms thus resulting in food insecurity.

In the context of the study area, a detailed historical study has not been conducted to determine the social and economic impact of the sector over time. More specifically, there were several gaps in the literature review on how sugarcane farming facilitated the outward migration of laborer's, the social and economic effects of contract farming, and the impact on food security and gender relations, among other effects. This constituted the gaps that necessitated the study. The study, therefore, identified social and economic changes that took place in the study area with the establishment of the sugarcane industry. Sugarcane farming facilitated the entrance of Africans into wage labor.

The tax demands imposed by the colonial ruler forced Africans into wage labor in the Asian and European sugar plantations. As such, the Africans were forcefully thrust into wage labor. Also, wage labor provided a means for an alternative source of income for African households in the study area (Osamba, 2016).

However, in the colonial state's attempt to provide labor, especially to the settlers, salient issues, such as the undercapitalization of the Asian and African sugarcane farmers, emerged. By the mid-1940s, there was a rapid expansion of the sugar Industry. Expansion of planting and sugar production continued in the post-war period as Asian capital

penetrated the sugar manufacturing sector. This expansion reached its peak by the mid-1950s as Asian and African cane farmers were encouraged under the Swynerton plan (Ahluwalia, 1990). Furthermore, the response by the colonial government led to the identification of the best cane varieties suitable for the area. This contribution boosted the growth of the sugar industry as cane farmers intensified farming with better varieties of cane to plant. However, as cane farming intensified, other pertinent issues emerged, such as a lack of sufficient machinery for breaking land due to the undercapitalization of the cane farmers who could not afford the tractors (Odhiambo, 1989; Bolt, 2018) Their situation was compounded by the fact that they could not access loans from private banks or colonial state institutions to meet their needs.

By the 1960s, sugarcane production expanded and incorporated most Africans. However, African farmers needed help with issues such as land, transport, insufficient funds and diseases, among others. Thus, the African farmers struggled to get reliable, sufficient means of transport to ferry their produce from the farms to the factory (Wafula, 1993). The Africans entered into contract farming in agreement with the manufacturers to set up staggered planting seasons so that cane would not mature at the same time. This strategy eased transportation difficulties. The sugar production transformed the social and economic landscape of the region. This transformation included education, health, social halls, the gender dimension of African societies and the agrarian economy of the region.

CONCLUSION

The study discussed the various impacts that the introduction of Asian sugar cane farming had in Colonial Nyanza, revealing that there were both positive and negative implications of the economic and social impacts of sugar cane farming. The introduction of commercial cane farming in the area spread to Africans, leading to the beginning of social differentiation in the area. This commercial cane farming continued to the independence period. It has also been revealed that the sugarcane industry led to increased earnings from wages and incomes. The cultivation and sale of sugarcane raised peoples' purchasing power, which led to increased peasant agricultural production. The Asian contribution in the social and economic spheres is demonstrated through built schools, hospitals, health centres and social halls that benefited Africans and others in the region after independence. The Asians also contributed to the new architectural design of urban areas. Despite all these, there were negative consequences that included land alienation and illicit drinking. Furthermore, the independence era also witnessed a negative impact on security, poverty and adverse effects of contract farming and liberalization of the sugarcane sector. Therefore, the study recommends that these problems be addressed if Kenya is to improve the sugar industry to fulfil the great potential in western Kenya's sugar belt. Towards such a noble task, the Kenyan government needs to review its sugarcane policies and abolish importation of cheap sugar. State policies should be geared towards promoting sugarcane production at the farm level through the provision of subsidies and incentives so as to encourage the intensification of cane farming. This way,

the government would reduce the amount of money used in the importation of sugar that could otherwise be channeled to more crucial issues.

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