# The Lake Region Economic Bloc Blueprint A better life

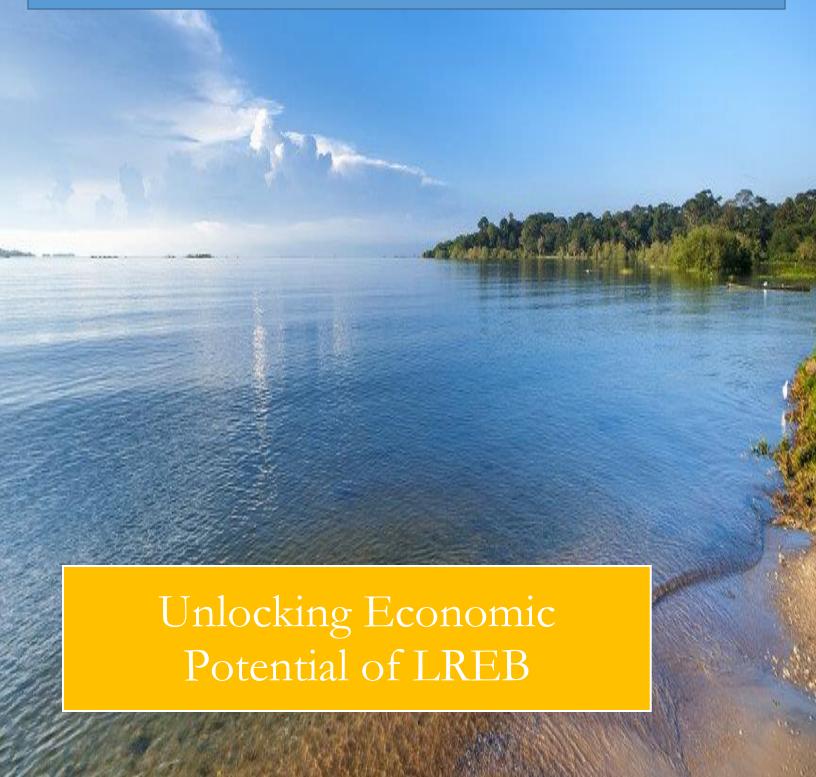


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### **ABBREVIATIONS**

**ADSL** Asymmetric Digital Subscriber Line

AIDS Acquired Immune Deficiency Syndrome

CBD Central Business DistrictCBK Central Bank of Kenya

**CIDP** County Integrated Development Plans

**COMESA** Common Market for Eastern and Southern Africa

**ECDE** Early Childhood Education and Development

**EDGE** Enhanced Data Rates for GSM Evolution

**FTTX** Fibre to the X

GDP Gross Domestic Product
GER Gross Enrolment Ratio
GOK Government of Kenya

HIV Human Immunodeficiency Virus

ICT Information and Communication Technology

**IDP** Internally Displaced Persons

IFMIS Integrated Financial management and Information System

KALRO Kenya Agricultural and Livestock Research Organisation

**KDHS** Kenya Demographic and Health Survey

**KEMSA** Kenya Medical Supplies Authority

KIHBS Kenya Integrated Household and Budget Survey

**KWH** Kilowatt Hour

**LBEBP** Lake Basin Regional Economic Blue Print

**LBR** Lake Basin Region

**LVKTC** Lake Victoria Tourism Circuit

MT Metric Tonnes

MTP Medium Term Implementation Plan

**NER** Net Enrolment Rate

NGO Non-Governmental Association
PGA Professional Golfers Association

**PPP** Public Private Partnership

**SACCO** Savings and Credit Cooperatives

**SADC** Southern African Development Community

**SONY** South Nyanza Sugar Company

TTC Teachers Training College

**UNDP** United Nations Development Programme

### **EXECUTIVE SUMMARY**

Kenya Vision 2030 is a master plan which outlines strategic priorities and interventions for the country's development from 2008 to 2030. The Vision aims to transform Kenya into a "middle-income industrialized country that provides a high quality of life for all by 2030" (Vision Kenya 2007, 2020). The Vision is based on three pillars: economic, social and political. The economic pillar aims to improve Kenya's prosperity through an economic development programme, covering all the regions of Kenya. It also aims to achieve an average Gross Domestic Product (GDP) growth rate of 10 per cent per annum from 2012 onwards. The social pillar seeks to build a just and cohesive society where social equity is prevalent in a clean and secure environment, while the political pillar aims to realize a democratic political system founded on issue-based politics that respects the rule of law and protects the rights and freedoms of every individual in Kenyan society. The master plan is planned to be implemented in successive five-year Medium-Term Plans, the first of which covered the period 2008- 2012. The second Medium-Term Plan covers the period 2013-2017 and The Third Medium-Term Plan (MTP), which covers the years 2018-2023, is currently in progress. If should be noted however, that some targets were not met in the first and second medium terms.

### Why a Regional Blueprint?

The promulgation of the Constitution 2010 brought previously non-existent opportunities for regional growth closer to Kenyan citizens by introducing devolved systems of government, which brought decision-making structures and processes closer to the people. The devolved systems of government also created space for Kenyan citizen to participate in planning and implementation of development plans for their region. However, few drawback experienced with devolution included the small size of the counties to leverage economies of scale hence reducing their ability to tap into a robust pool of skilled labour or funding options required to catalyse positive change within a given jurisdiction. The Economic Blueprint for the Lake Basin Region was therefore born out of the understanding that strategic connections between counties with shared interests could agree on mutual benefit, which could effectively and intelligently increase the possibility of creating notable development impact across several counties. Additional reasons for a regional Blueprint included:

- Access to New & Expanded Markets
- Economies of Scale e.g. Large labour force
- Comparative County strengths
- Youth The Demographic Dividend

- Shared Resources i.e. Lake Victoria, River Nyando, River Yala, River Nzoia, River Sondu,
   River Kuja, River Miriu, Mt. Elgon catchment area etc.
- Shared values i.e. economic growth as a vital Development Imperative to support the ailing social sectors such as Education, Health etc.
- With about 14.9 million people which constitute about 31.4 per cent of the population in Kenya

The Lake Region is one of the most densely populated regions of Kenya with 14.9 million people which constitute about 31.4 per cent of the population in Kenya. This Economic Blueprint presents the socioeconomic aspirations of 14 counties around the Lake Basin Region and seeks to boldly secure and shape the region's destiny. This Economic Blueprint is designed to guide development efforts by leveraging existing assets, addressing constraints and defining key steps that leaders and citizens of the region can take to transform the shared vision of prosperity into reality. The immediate environment of the Lake Region Economic Bloc (Ugandan and Tanzanian Lake Victoria enclave) houses about 40 million people which acts as an economic hub that can push the LREB into unprecedented prosperity.

The 14 counties that constitute the Lake Region bloc include Bomet, Bungoma, Busia, Homa Bay, Kakamega, Kericho, Kisii, Kisumu, Migori, Nandi, Nyamira, Siaya, Trans Nzoia and Vihiga. They not only have similar ecological zones and natural resources; they have analogous cultural histories that date back to historical migrations and trading routes. Thus, a partnership between the counties is both essential and timely and creates a practical framework through which county government efforts can be pooled to harness the abundant natural resources, build on existing strengths and address challenges.

### Impact of Covid-19 in LREB

Covid-19 has had an immense impact on various sectors of the Lake Region economy. The pandemic has affected sectors such as tourism, commerce, manufacturing, micro and small enterprises (MSEs), transportation and education. To date, many Kenyans have lost their lives, jobs and livelihoods mainly due to the virus. However, despite the impact, the county governments have taken various response measures to protect vulnerable Kenyans from Covid-19 shocks and are improving the social protection system that supports the elderly, disabled, orphans and other vulnerable households in the country as a priority to lessen their sufferings.

An impact assessment based on available literature on all the three sectors — primary, secondary and service along with the impact on migrants, health, poverty, job losses, informal sector, environment

and so forth indicates that all sectors of the economy have been disproportionately affected and even within a sector, there is a disproportionate loss<sup>1</sup>. Agriculture and its allied activities being not having experienced homogenous activities have different experience due to different dynamics thereby having different impacts. So, the impact of Covid-19 on this sector varies according to the set of activities, that is, on crops, livestock, fisheries and so forth. The horticulture and food grains production which falls under crops was impacted differently. Horticulture faced another brunt due to its perishability whereas food grains are non-perishable and apart from problems in harvesting and labour short-age, this is not impacted much.

### The Evolution of the Lake Region Economic Blueprint (LREB)

The initial LREB was developed with the support of Deloitte East Africa in partnership with the county governments of the aforementioned counties. However, it has been reviewed with the support of UNDP. The Blueprint, identified seven (7) strategic intervention areas emerged as;

- Productive Sectors: Agriculture and Tourism
- Social Sectors: Education and Health;
- Enablers: ICT, Financial Services and Infrastructure

The process of reviewing the blueprint consisted of rigorous desk studies undertaken by the consultants and consultations with county government and LREB staff. The process also drew on the second-generation County Integrated Development Plans (2018-2022) of 14 counties as well as other data from secondary sources.

### How the LREB can Catalyse Regional Growth

The economic master plan presents a one-stop shop for investors interested in investing in the region, particularly in the seven intervention areas of agriculture, tourism, health, education, ICT, financial Services and Infrastructure. The LREB is the starting point for the region to secure funding that can create access to new markets and expand access to existing markets not only in Kenya but the larger East Africa region. As the Lake Region is strategically placed near Uganda, Tanzania and Rwanda, entrance into these country markets can be easily coordinated through the Lake Region. Further, the Lake Region has access to transportation routes into the COMESA and SADC regions.

According to Kenya's 2019 population and household census, the Lake Region has an estimated population of 15 million, which is about 31 percent of the total population of the country, which the youth aged between 15-35 years are more than 50 per cent. This indicates the economic potential of

<sup>&</sup>lt;sup>1</sup> Food Agriculture and Organisation (FAO) 2020

a region with an active population whose labour can be channelled into economically productive activities that ultimately reduce dependency ratios and increase per capita income.

### Rationale for the Selection of the 7 Intervention Sectors

Seven key sectors were selected as points of interventions on which the development of the Lake Region can be founded as follows:

### Socio-Economic Effect of Covid-19

Kenya has recorded the highest number of Covid-19 cases in East Africa. This is so despite various detection and containment measures, the number of infections continues to rise. The number of cases continue to rise mainly due to the movement of people within the district, poor hygiene and lack of compliance with government measures, thereby disrupting the socio-economic well-being of people and economies<sup>2</sup>. The pandemic has had critical socio-economic impacts on the Kenyan population. Due to various restrictions put by the governments to contain the virus, the virus has rendered many jobless, created food insecurity, low earnings, closer of businesses, social and medical crisis<sup>3</sup>.

A survey by the Kenya National bureau of Statistics reveals that nearly workers across all industries reported a decline in the mean working hours per week, with those in education and accommodation and food services reporting the highest figures of 40 and 30 hours decline. Nearly half of the workers (or 49.9%) failed to attend work due to the lockdown or stay away instructions by the government. However, those who were working in the private sector were given unpaid leave due to reduced activities at workplace as a result of strict health guidelines. In private sector schools, teachers and other workers have lost their incomes. Increased domestic violence has been seen together with increase in pregnancies of school girls due to prolonged stay at home.

Some other business such as bars, hotels, market centres had to totally lockdown leading to reduced business activities. This impacted negatively on workers in the transport sector. However, in the second survey the respondents reported that they were asked to state the number of hours worked. The workers across all industries reported having worked fewer hours that usual in the week preceding the survey. The education sector reported the highest level of loss of hours worked followed by activities of households as employers, undifferentiated, electricity, gas, steam, and air conditioning supply arts, entertainment and recreation, accommodation and food services and construction. Water and health services sectors recorded the minimum loss in time worked.

<sup>&</sup>lt;sup>2</sup> Social economic Impact of Covid-19 in Kenya Devinit

<sup>&</sup>lt;sup>3</sup> Word Bank - Socioeconomic impacts of Covid-19 in Kenya

However, the micro, small and medium enterprises (MSMEs) as a whole form a significant share of manufacturing in Kenya and play a crucial role in providing employment opportunities and in the country's exports. As indicated by recent Central bank of Kenya reports MSMEs constitute 98 per cent of all business in Kenya, create 30 percent of the jobs annually as well as contribute 3 per cent of the GDP<sup>4</sup>. But this sector has issues like the non-availability of adequate, timely, and affordable institutional credit. Although all the businesses and sectors are affected due to the pandemic, this sector is badly hit due to reduced cash flows, supply chain disruptions, shortage of migrant workers due to reverse migration, less demand, and so forth.

In the financial sector, the stock market has also witnessed the worst due to the lockdown and collapse of various business activities. The Nairobi Securities Exchange (NSE) has also not been spared by Covid-19. However, no much impact on the banking sector is noticed, but because banks are at the forefront of public attention the indirect impact of several other sectors that are hit by the pandemic is likely to be on the banks and other financial institutions. Banks are the major source of help in times of crisis, therefore when all other sectors are hit badly, banks will also face the brunt. The already existing problems in the financial sector are expected to multiply due to this draconian crisis<sup>5</sup>.

The manufacturing sector, which is the major contributor of GDP and employment in the secondary sector and has been recognized as an engine for vibrant growth and creator of the nation's wealth was also impacted negatively by Covid-19 due to slow consumer demand. The manufacturing sector is important in the way that it has strong linkages with other sectors, both forward and backward linkages so any impact in this sector will affect other sectors as well.

Other service sector like aviation, transport, travel and tourism are worst hit globally. The loss to this sector too will be based on the severity and longevity of the crisis. In the county most tourist bookings have been cancelled due to the Covid-19 restrictions.

Due to the paucity of testing services, shortage of doctors, healthcare staff health equipment, beds even in the urban area of Kenya, Covid-19 is a major threat for Kenya. With a subsequent rise in the no. of confirmed cases Kenya's capacity to contain the further spread and to handle the current cases is questioned by many experts. As per the National Health Profile of Kenya's, 2019, Kenya's expenditure on healthcare as % of GDP was merely 17.7% which is low. Covid-19 pandemic has disproportionately affected the rural and urban areas. Presently, the brunt is in both urban and rural areas. But the risk is much more to the rural areas where around 70 per cent of Kenya's population

<sup>&</sup>lt;sup>4</sup> Kenya Association of Manufacturers (KAM)

<sup>&</sup>lt;sup>5</sup> CBK Banking Supervision Report 2020

resides. Kenya's healthcare sector is still developing and there are large differences in the healthcare systems of rural and urban areas.

### Agriculture

The agriculture sector in the Lake region was impacted negatively by the Covid-19 pandemic just like other sectors. The small-scale farming, which largely produces a significant amount to household food and produce mainly for subsistence purposes was impacted negatively. A survey by the Kenya Integrated Household and Budget (KIHBS) 2015-2016 indicates that 68.3 per cent of total food consumed comes from small scale farmers, while 18 per cent is from their own production (KNBS, 2018). Similarly, in rural, peri-urban and core-urban households mainly source their food from purchases accounting for 57.4, 65.6 and 85.7 per cent of the total food consumed, respectively. A 21.7 per cent of food consumed in peri-urban, 27.7 per cent and rural areas comes from their own production (KNBS, 2018). The proportion of food consumed from own production is even higher at the district level for some specific districts such as Migori with 32.4 percent; Busia with 38.1 per cent among others. Disruptions as a result of the pandemic suggest the Covid-19 district analyses (from the technical reports) that in some counties more workers ventured into subsistence production during this Covid-19 period.

Currently, the main cash crops of the Lake Region are sugarcane, pyrethrum, tea and cotton whereas dominant food crops are maize, rice, potatoes, tomatoes, beans and sorghum. Other segments of the population derive their livelihoods predominantly from fishing from Lake Victoria and the smaller rivers such Yala, Nzoia, Nyando, Sondu, Miriu, Kuja, Migori, Gucha, Mt. Elgon etc among others. The presence of lakes in the region indicates the upward economic potential of fishing and fish farming in the region. There is additional potential for intensive livestock farming and ranching. The main impediments to the optimum agricultural productivity in the region include subsistence farming rooted in low levels of education among farmers as well as the lack of the use of irrigation and modernized farming methods. These impediments are related to fact that most agricultural activity occurs on small farm holdings that limit yields.

**Proposed Flagship Project for Agriculture**: - Establishment of an Agricultural Commodities; Exchange; Packaging; Canning and semi processing of agricultural produce. Horticulture and Floriculture development and growth has recently been added as a crucial investment area in the region.

### **Tourism**

The tourism sector in Kenya almost collapsed when passenger flights and other modes of transport around the world were suspended due to Covid-19 and the cultural and sports tourism events booked in the first half of 2020 were cancelled. The largest declines in accommodation and meals, entertainment, conferences, transportation, the beach and safari, as well as a significant drop in employment in key activities in the tourism value chain of up to 72 per cent (over 700,000 jobs lost). The education sector was disrupted by the closure of all schools, resulting in lost study and teaching time. Nationwide, 90.8 percent of schools and only 12.3 percent of households have Internet access and the corresponding hardware for online learning. Hence, providing online courses would expose the other 87.7 percent of the population while creating learning inequalities and disproportionately affecting disadvantaged and vulnerable children.

The Lake Region have many places that tourists can visit such as the Western Kenya Tourism Circuit. The circuit has significant potential that has yet to be tapped into. Key areas of potential include nature and wildlife tourism; agro-tourism; water sports tourism, and cultural heritage and community-based tourism. However, the limited investment in these areas has stunted the growth of tourism in the region. Opportunities exist to create demand-led tourism by expanding the hospitality industry and undertaking aggressive marketing of the region to local and international markets.

Proposed Flagship Project for Tourism: Creation of a Lake Region Tourism Circuit

### Health

The Lake Basin Region has several public, private and mission hospitals. These facilities often have challenges - which ran from inadequate skilled medical personnel, lack of medical equipments, few intensive care unit (ICU) beds and ventilators, High Dependency Unit (HDU) and few Ambulances. The doctor to patient ratio is 1:40,000 and the nurse to patient ratio is 1:2500. The region is also prevalent of diseases such as malaria and HIV/AIDs and the morbidity and mortality to illnesses such as diarrhoea and pneumonia are also a common phenomenon<sup>6</sup>.

However, following the first detection of Covid-19 case in March 2020 in Kenya, it heightened the healthcare system situation. The number of Covid-19 patients increased throwing the existing health care systems into disarray. As a result of the increase the healthcare system focus was mainly on Covid-19 response, thereby jeopardising access to health services for other cases such as maternal and

<sup>&</sup>lt;sup>6</sup> Economic Survey 2021

antenatal care, immunizations, nutrition services and routine check-ups. This could result in devastating outcomes for children in the coming months and in the long term. Following the increasing number of Covid-19 patients, the number stretched the hospital ICU beds that required oxygen and other facilities<sup>7</sup>.

At first due to lack of adequate protective equipment, testing, or other safety measures to ensure that healthcare personnel could safely and effectively respond to the Covid-19 pandemic, a few nurses and doctors died causing stress and trauma to their colleagues. Prolonged social isolation and stresses related to the impact of Covid-19 lead to incidences of mental health conditions and stress levels within certain segments of the society. On a positive note, the inadequacy of equipment and other medical essentials has triggered local invention and production. Students from Kenyatta University have invented ventilators to aid in the fight against Covid-19. In terms of PPE, local entrepreneurs and local companies have been in the forefront in making face masks and other PPE materials. Other entrepreneurs have also been in position of delivering hospital beds to meet the local demand. Several people have reportedly been diagnosed with mental illness caused by the psychological impact of Covid-19. Apart from the health and economic crisis, this is the major challenge to every country hit by the pandemic. Due to lockdown, mass unemployment, the collapse of various businesses, loss of income, increasing inequalities and poverty, deaths, less mobility, and so forth. There has been a huge impact on the mental status of people, frm older to younger, rich to poor, everyone is affected. This outbreak is resulting in additional health issues like anxiety, stress, depression, anger, fear, and so forth, globally. Recovery sector specific interventions include:

**Proposed Flagship Project for Health**: Establishment of Specialist Hospitals in each county and increased bed emergency capacities to cope with health challenges such as Covid-19.

### Education

The pupil enrolment and number of teachers in Early Childhood Development Education (ECDE) centres from 2016 to 2020. Enrolment in Pre-primary 1 and 2 increased by 3.7 per cent to 2.8 million in 2020 from 2.7 million in 2019. In 2020, enrolment of boys in ECDE centres accounted for 50.7 per cent of the total enrolment. The number of trained teachers in ECDE centres recorded a growth of 3.1 per cent from 92,359 in 2019 to 95,241 in 2020<sup>8</sup>. During the review period, the number of

KIPPRA & CoG (2020) County Covid-19 Social Economic Re-Engineering Recovery Strategy 2020/21-2022/23

<sup>&</sup>lt;sup>8</sup> Economic Survey 2021

trained male teachers registered an increase of 6.5 per cent while that of female teachers increased by 2.1 per cent to 79,657. The number of female teachers accounted for 83.6 per cent of all trained teachers in ECDE centres. However, the Net Enrolment Ratio which is the share of children of official primary school age that are enrolled in primary school is on average 100 percent. Enrolment in secondary level education is on average below 100 percent in all the counties mainly due to free primary and reduced fees in secondary schools. However, despite the high enrolment rate, tertiary education enrolment is very low. The tertiary level of the education system in the Lake region is poorly developed. The quality of education services in the region is subpar.

However, the impact of Covid-19 on the education sector was profound. Given that all institutions – ECDs, primary, secondary schools, universities and colleges were closed for nearly a year to contain the virus, some institutions closed, others especially private ECD, primary, secondary schools were not able to pay their teaching and non-teaching staff.

According to a Covid 2020 survey wave 2, employees in the education sector lost the estimated maximum working time of 35 hours compared to the previously worked hours. Distance learning mechanisms have been tried but have not reached all children and adolescents in Kenya and those without internet access or adult supervision are at a disadvantage. While over 90.8 schools have access to digital learning devices, only 12.8 percent of households across the country have internet access. Children in nomadic communities are already disproportionately affected by learning disorders and run the risk of being excluded from online or other alternative learning opportunities.

In the last six months of 2020, the Covid-19 pandemic saw a surge in the percentage of teenage pregnancies across the country. According to a 2020 survey by the Kenya Health Information System, more than 4,000 teenage girls were impregnated during the Covid-19 era. The school feeding programs in ECDE and primary schools were discontinued after the school closed in March 2020. This is likely to lead to malnutrition diseases, particularly among learners from peripheral areas who previously relied on the program; and this would have negative long-term effects on human capital in the country. School closings are expected to have 100 percent impact on transition policy. The 1.2 million Standard 8 learners and 750,000 Grade 4 students will not advance to the next grade like all other levels in the coming year.

**Proposed Flagship Project for Education:** Creation of Centres of Excellence in each county.

### **Financial Services**

The Lake Region hosts major banks in Kenya such as Kenya Commercial Bank, Absa Bank, Equity Bank; however, access to banking services remains clustered in urbanized areas and there is limited access to appropriate business advisory services. There are numerous Savings and Credit Cooperatives but saving rates in the region are low. The Covid-19 pandemic had a significant impact on financial institutions around the world in 2020. A survey by IFC in 2020 among its customers in October 2020 to assess the impact of the pandemic primarily on the banks, four dimensions: operational business, strategic direction, financing and loan portfolio. According to the bank, most financial institutions (FIs) reported lower loan deposits and withdrawals; government moratoriums and voluntary deferrals affected more than half of the FI portfolios. Despite the widespread restructuring of portfolios, FIs began to see significant increases in distressed assets. Regardless of the challenges, the financial institutions managed to maintain their liquidity in the first few months of the crisis, partly supported by strong deposits. The crisis prompted most FIs to give even greater priority to the digital transformation of the front and back-end business and the development of retail customer deposits as a central financing strategy. While demand for finance for micro, small and medium-sized enterprises (MSMEs) was expected to recover by 2021, FIs expressed significant concerns about the increased risks for this segment.

After all, there was great demand for investor support among survey participants, demand for local currency products and medium to long-term financing, as well as technical support for digital transformation and risk management. The rise in Covid-19 has increased the need for sustainable funding, especially for businesses that don't have savings to rely on<sup>9</sup>.

Proposed flagship project for Financial Services: Creation of a Regional Bank by LREB counties.

### **Information and Communication Technologies (ICT)**

Key mobile phone operators present in the region are Safaricom, Airtel, Orange, Telkom and Yu. Mobile phone usage is popular for phone calls, SMS and accessing the internet. However, the ICT infrastructure is not fully developed and internet connectivity is concentrated in the central business districts of counties. Further, there is limited ICT training and education that limits the extent to which the ICT can enable higher economic productivity in the region. Less than 15 per cent of households in rural areas use internet and only 5 per cent have gadgets such as desktops, laptops and tablets. As a

<sup>&</sup>lt;sup>9</sup> IFC survey

result, even with 90 per cent of public primary schools being installed with digital literacy infrastructure and devices, continued learning from home is a challenge because only 12.8 per cent of households have access to internet. Further, only 50 per cent of counties are fully connected to the Government Common Core Network (GCCN). Enhancing Information and Communication Technology (ICT) capacity in the public sector and households will enable business continuity and build resilience to future disasters and pandemics.

Although the access and use of ICT is critical, especially during the Covid-19 phase, the use of the technology differs from country to country. Some counties have little access to ICT services and infrastructures and therefore did not do much, especially in using it to learn in class, access documents and do business. In addition, access to ICT is limited in rural and remote areas and there is a digital divide. In the public sector, most district government headquarters and public elementary schools are connected to the national ICT infrastructure. However, households are not easily accessible. In the new, normally controlled Covid-19, the district administration must accelerate the implementation of various ICT-related projects in order to ensure business continuity and strengthen the resilience of the district against future pandemics and disasters<sup>10</sup>.

Proposed Flagship Project for ICT: Improving service delivery through ICT.

### Infrastructure

Infrastructure here refers to roads, bridges, tunnels, water supply, sewers, electrical grids and telecommunications hardware. Transport infrastructure remains poor, less than 50 percent of the roads are paved. Only 30 percent of the population have access to electricity, and most of the population have no access to proper water and sanitation services. Infrastructure is an important factor in socio-economic activities as it facilitates the movement of people and the exchange of goods and services in geographically separated areas. In 2019, the transportation and storage sectors accounted for 10.3 per cent of the country's total economic growth.

Covid-19 pandemic had impact on infrastructure. The transportation sector, for instance, was directly affected by measures taken in response to the Covid-19 threat. Measures such as social distancing and restricted mobility between selected areas do have a direct impact on demand behaviour for travel. The containment measures influenced travel behaviour. The ultimate effect of these changes is to

County Covid-19 Social Economic Re-Engineering Recovery Strategy 2020/21-2022/23

disrupt accessibility - the ease with which people can reach and participate in various socio-economic activities and exchange goods and services. While curbing the spread of the virus and stopping infection is crucial, it is also strategically important to assess the demand and supply side effects of these measures on the transport sector in order to mitigate negative impacts and open new opportunities create. The measures taken to contain the spread of the pandemic have had a direct impact on the transport sector in the counties.

Proposed Flagship Project for Infrastructure: Creation of a Lake Region Ring Road.

Table 1: Summary of Investment Opportunities in the Lake Basin Region by Sector

Sector	Opportunity	Counties
Agriculture	<ul> <li>Agricultural Commodities Exchange</li> <li>Large Scale Irrigation of High Value Crops</li> <li>Fish Auction Busia • Value Chains • Agro processing Factories</li> </ul>	Migori, Bungoma, Siaya, Kisumu, Nyamira, Kisii, Homa Bay, Kakamega
Tourism	• Lake Region Tourism Circuit • Nature and Wildlife, • Culture, Heritage and Community • Adventure, • Agro tourism and Ecotourism, • Water sports, Health and wellness • Conference Tourism Lake Victoria Islands Golf Resorts	All
Education	• Centres of Excellence • Schools for children with disabilities • Satellite Campuses • Research Labs • Regional Scholarship Program	All
Health	• Regional Specialist Hospitals • ICT/Digitization of Health • International Satellite Hospitals	All
Financial	Regional Bank	All
ICT	• Regional ICT platform for Services • Regional Data Centre • Revenue Collection	All
Infrastructure	• Lake Victoria Ring Road, • Road concessions • Great Lake Basin Railways • Water Ways	All

### 1.0: INTRODUCTION

Kenya Vision 2030 is the country's blueprint for development between 2008 and 2030. It outlines the country's strategic priorities and measures. The Vision is implemented through five five-year Medium-Term Plans at the National Government level and County Integrated Development Plans at the County Government Level. The first and second stages, which span the years 2008 to 2012 and 2013 to 2017, have already been implemented. The third Medium-Term Plan (MTP), which covers the years 2018-2023, is currently in progress while County Governments are implementing their 2<sup>nd</sup> Cycle of CIDPs 2018-22 with the first having been between 2013-2017. Kenya has made significant development progress in its 57 years of independence. Those mentioned in the World Bank's 2020 Economic Update include (World Bank, 2020):

- Implementation of a devolved governance structure aimed at realizing equitable development,
- Increasing life expectancy by two decades,
- Expanding access to primary education to near universal levels,
- Doubling secondary school access and significantly increasing tertiary education opportunities,
- Reducing infant mortality by half and reducing fertility rates,
- Expanding GDP per capita eightfold and
- Overseeing a steady economic growth.

In addition to these, in 2014 Kenya rebased its economy and officially became a middle-income economy with an estimated economic output of KSh4.76 trillion (US\$ 53.4 billion). According to the World Bank report, Kenya's economy contracted by 1 percent to 5.3 per cent in 2020 against the projected growth of 6.2 per cent in 2020 due to the Covid-19 which affected incomes and many jobs hence decelerating growth. To. However, despite the negative impact of the Covid-19, it has projected a growth outlook of 6.9 percent for 2020<sup>11</sup>. Despite these attainments, there is recognition of the fact that Kenya continues to face challenges and perform below her potential.

For example:

- Over 44 percent of the population still live in extreme poverty;
- The maternal mortality is one of the highest in Africa and
- Secondary education access remains less than 50 percent and of low quality.

This realization prompted the development of the Kenya Vision 2030 in 2008 as a coordinating framework for Kenya's socioeconomic development.

### 1.1: Vision 2030 and Development

Kenya is currently in the process of implementing the third MTP. The first MTP covered the period 2008-2012 with the following achievements reported (GoK, 2014):

<sup>&</sup>lt;sup>11</sup> Kenya Economic Update 2020

- Repair of damaged infrastructure; a total of 2,200 km of roads constructed exceeding the MTP target of 1,500 km;
- Resettlement of internally displaced people following the 2007/08 post-election violence;
- Increase in enrolment in early childhood education by 40 percent from 1.72 million in 2008 to 2.4 million in 2012;
- Transition rate from primary to secondary education increase from 64 percent in 2008 to 77 percent in 2013:
- Increase in university enrolment by 103 percent from 118,239 in 2008 to 240,551 in 2012/3;
- Completion of three undersea submarine fibre optic networks linking Kenya to the global internet network including 5,500 km of terrestrial fibre optic network;
- An increase of 22percent to total installed capacity for generation of electricity; and
- Enactment of the Constitution of Kenya (2010).

The following were identified in the second MTP (GoK, 2013) as critical issues and challenges to be addressed in the period 2013-2017:

- Low domestic savings and investments: Kenya's saving rate was 13 percent of GDP during the last MTP period, just half of the average for low income countries and less than the 17 percent of the sub Saharan Africa average;
- Low per-capita income growth: Real per-capita income growth of 7.8 percent in the last 5 years;
- High levels of unemployment and poverty: The last published rate of unemployment by the Kenya National Bureau of Statistics was in 2005/6 with an unemployment rate of 12.7 percent. Recent estimates by non-Bureau sources puts the youth unemployment rate at 25 percent;
- High energy costs: In Kenya the cost of electricity is up to 21 US cents per Kwh, compared to approximately 6 US cents per Kwh in India and China;
- High costs of finance: High bank lending rates and wide interest rates spread;
- Inefficiencies in rail and port operations;
- Poor business environment: Prohibitive regulations and procedures for businesses and investors;
- Major economic and social disparities across regions of the country;
- A rapid population growth rate and the proliferation of informal settlements;
- High dependence of the country on rain-fed agriculture and low agricultural productivity which is
  particularly problematic given that the agriculture sector employs more Kenyans than any other
  sector;
- Slow structural transformation exemplified by low and declining share of manufacturing to GDP and low share of export to GDP;

- Narrow range of exports and the slow growth in their value compared to the growth of imports;
- Health: Upsurge in non-communicable diseases across the country and global pandemics;
- Governance problems, insecurity and cyber-crime and
- Environment: Threats emanating from climate change.

However, in the third phase of the MTP as critical issues and challenges to be addressed in the period 2018-2023<sup>12</sup>:

- The construction of SGR phase 2A section 1 (Nairobi to Naivasha) was completed in September 2019 and it covered 120 kilometres.
- Construction of over 2,100 Kms of additional Classified Roads and maintenance of 41,999kms of roads
- Total passenger traffic through the airports increased by 3.4 percent from 11.7 million in 2018 to 12.1 million in 2019
- The total cargo throughput at the port increased by 11.3 percent from 30.9 million tonnes in 2018 to 34.4 million tonnes in 2019
- Mobile network coverage stood at 93 percent in 2019 which was attributed to the roll out of infrastructure for basic voice services.
- Total installed capacity increased to 2,818.9 MW in 2019 from 2,711.7 MW in 2018 with geothermal power contributing 45 percent of total generation.

Kenya has made significant progress ever since Vision 2030 blueprint was established. So far, we have reached in phase three - which is also called the Medium-Term Plan III which runs from 2018 to 2022. An overview of the MTP indicates that only a year remains for it to elapsed, however, considerable achievements have been made. The economic growth in the country has remained resilient, but the country still faces significant downside risks, including growing fiscal pressures coupled with narrowing fiscal space, outbreak of coronavirus pandemic, desert locust invasion and weather uncertainty. Kenya also has opportunities to exploit and the effect of the African Continental Free Trade Area (AfCFTA).

### **Key Achievements of MTP III**

- Implementation of crops insurance schemes; and livestock insurance subsidy scheme in the ASAL areas.
- The formal manufacturing employment increased by 1.6 percent from 347.9 thousand in 2018 to 353.3 thousand in 2019.
- Tourism earnings increased from KShs.157 billion in 2018 to KSh163 billion in 2019

<sup>12</sup> Vision 2030, Third Medium Term Plan 2018-2022

- Total credit approved in the manufacturing sector increased to KSh366.9 billion in 2019 from KSh335.7 billion in 2018.
- Kenya Investment Authority (KenInvest) continued to promote and facilitate both local and foreign investment in 2019, as mandated by the Investment Promotion Act, 2004.
- The Authority registered 43 manufacturing projects in 2019 with a capital cost of KSh35.1 billion.
- Total transfers through mobile money grew by 9.1 percent from KSh 3,984 billion in 2018 to KSh4,346 billion in 2019.

### **Key Achievements of MTP III**

- Pilot project for Universal Health Coverage (UHC) in four counties of Kisumu, Nyeri, Machakos and Isiolo was implemented. The project was also rolled out in some other counties
- The number of health facilities increased by 5.2 percent to 13,790 in 2019, with Level 2 facilities accounting for 77.4 percent of the total facilities
- Total enrolment in public and private secondary schools increased by 10.8 percent to 3.3 million in 2019 from 2.9 million in 2018 attributed to the Government policy of achieving 100.0 percent transition from primary to secondary education.
- The confluence of these challenges present Kenya with development tasks that can last well into the next decade. Priority areas of intervention to address these challenges have been outlined as follows:

### **Agricultural modernization**: To guarantee food security for its population;

• Raising the GDP growth rate to double digits over multiple years will be important to ensure there are adequate domestic resources to address health and education challenges for example;

**Expanding secondary education** access and ensuring that there is high quality learning for those enrolled in both primary and secondary schools as an important component of investment in human capital particularly in scientific knowledge and skills sets;

**Tertiary Education**: Investing in relevant research and innovation centres that exist in tertiary education institutions while establishing new ones;

**Health:** Tackling key health challenges such as maternal mortality in which Kenya performs abysmally even when compared to other countries in Africa;

• Reducing poverty levels by 2 percentage points per year as recommended by the World Bank;

### Reducing unemployment growth rate;

- Tackling inequalities in social and economic sectors with the creation of social security nets for the most vulnerable; and
- Supporting and encouraging positive urbanization by addressing the current challenges of informal settlement, including poor housing and the related infrastructure. It is estimated that half of Kenya's population will live in cities by 2050.

• These figures are important as they provide the context within the Lake Region Economic Blueprint, like any other sub-national development framework, should be planned and executed.

### 1.2: The Lake Basin Economic Blueprint (LREB)

### The Birth of the Lake Region Economic Blueprint

In January 2014, a meeting was convened in Kisumu County to discuss the role and use of ICT in improving service delivery. It is during this meeting that the Governors of Kisumu, Vihiga, Homa Bay and Kisii counties discussed the possibilities of not only expanding this ICT initiative to include the counties of the Lake Basin region but also expanding the scope of the initiative to develop an Economic Blueprint through which shared regional challenges could be addressed. They therefore resolved to invite the neighbouring counties to a forum to discuss the development of a Blueprint for the region. Between February and March 2014, the neighbouring counties joined the conversation raising the total numbers to 10 counties. The counties included Bungoma, Busia, Homa Bay, Kakamega, Kisii, Kisumu, Migori, Nyamira, Siaya and Vihiga. Led by the Governors, the realization emerged that there is a need for 'multilateral' cooperation between counties in and around the Lake Region to develop partnerships through which common challenges could be addressed and development opportunities seized in a manner that transcends county frontiers. It is through this discussion that the idea of an Economic Blueprint for the counties around the Lake Basin Region arose. It was agreed that the Economic Blueprint would form the basis on which the County Integrated Development Plans (CIDPs) would be implemented based on the county priorities, situational interests, shared values and relevant capabilities.

### Objectives of the Lake Region Economic Blueprint

The broad objective of the Lake Basin Economic Blueprint is to leverage economies of scale in the region, including shared resources such as Lake Victoria, in order to improve the livelihoods of the people in these counties. The counties further resolved to focus on the seven key intervention areas as follows:

- **Productive Sectors:** Agriculture and Tourism;
- Social Sectors: Education and Health; and
- Enablers: ICT, Financial Services and Infrastructure.

They further advised that there should be clear alignment between the LREB and national development plans such as the Vision 2030 and its Medium-Term Plan III for 2018-2023.

### 1.3: Approach and Methodology of Review of the Blueprint

When the first copy of this Economic Blueprint was developed, the consultant just carried out a desktop study but never held a participatory engagement with the stakeholders who hailed from 10 counties i.e. Bomet, Busia, Homa Bay, Migori, Nyamira, Kisii, Kakamega, Kisumu, Siaya and Vihiga. However, during the review of the blueprint, the consultants incorporated the 4 new member counties (Kericho, Trans Nzoia, Bungoma and Nandi) and used mixed method approach to review economic blueprint. Consultations were also undertaken with LREB staff and County Directors. The resulting recommendations in the Blueprint

have thus been drawn from the County Integrated Development Plans (CIDPs) as well as the views of the county governments and its citizens.

### 1.4: Structure of the Blueprint

This Economic Blueprint of the LREB is divided into 8 chapters. Each chapter has distinct issues.

**Chapter** 1 looks at what the Vision 2030 envisages, the Lake Basin Economic Blueprint (LREB), the blueprint, the structure of the blueprint and the approach and methodology of the review.

Chapter 2 explores key features of the region such as physical features, demographic, socio-economic which entails agriculture, trade, urbanization, infrastructure, and poverty rates. It also highlights key opportunities that investors may take advantage over which exist in the region.

**Chapter 3** presents the Productive Sectors of Agriculture and Tourism detailing the state of the sectors in the Lake Region; key challenges; opportunities for investment and economic activity for each sector; resource mobilisation strategies and the potential socioeconomic impact of investment into each sector.

**Chapter 4** explores the Social Sectors of Education and Health again delving into the state of the sectors in the Lake Region; key challenges; opportunities for investment and economic activity for each sector; resource mobilisation strategies and the potential socio-economic impact of investment into each sector.

**Chapter 5** goes into the Enabling Sectors of Financial Services, ICT and Infrastructure. The state of each sector is analysed, and key challenges and opportunities elucidated with a conclusion that details the resource mobilisation strategies and potential socioeconomic impact of investment into each sector.

**Chapter 6** addresses the Cross-Cutting themes of Women and Girls; Youth; Persons with Disabilities and the Environment with the view of ensuring that the special concerns of each cluster are addressed within the Blueprint and the implementation thereof. The chapter explores the state of each of these groups in the Lake Region in each of the Productive, Social and Enabling Sectors of the Blueprint. The chapter then details interventions targeted at each group/ issue with specific elucidation for interventions in each of the Productive, Social and Enabling Sectors.

**Chapter 7** presents Key Risks that may compromise the success the Economic Blueprint and the creation of a regional bloc, and details Mitigation Strategies for each.

**Chapter 8** is the concluding chapter of the Blueprint.

### 2.0: KEY FEATURES OF THE LAKE REGION

This section explains the social and economic factors that influence the Lake Region Economic Blueprint.

### 2.1: Physical Features of the Lake Region

The Lake Region is made up of territories from the Western part of the country with a population of an estimated 13.95 million people of diverse ethnic and cultural backgrounds. The counties of which the region is comprised for this blueprint are Kericho, Nandi, Bomet, Trans-Nzoia, Bungoma, Busia, Homa Bay, Kakamega, Kisii, Kisumu, Migori, Nyamira, Siaya and Vihiga. The region lies between latitudes 10 16'N and 10 54'S and longitudes 330 55' and 350 51'E and the equator passes across the region. The region's prevailing climate is generally mild with a monthly temperature that ranges between 19 and 25 degrees Celsius throughout the year. The rainfall is governed by a modified equatorial climate characterized by long rains (March to June) and short rains (September to November). The average annual rainfall varies from 700mm along the Lake Victoria shores to 2000mm in the highlands.

### 2.2: Demographic Features

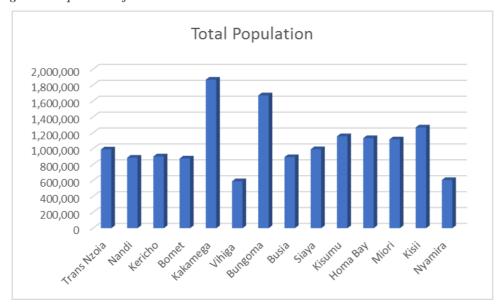
The Lake Region is one of the most densely populated regions of Kenya with about 14,9 million people – which constitute about 31.4 per cent of the population in Kenya 2019 population Census. <sup>13</sup> Interestingly three counties – which fall within the Lake Economic Region Bloc are among the top rural counties with high population densities. They include Vihiga (1,045 persons per square Kilometre), Kisii (875), Nyamira (665), Busia (656) in western Kenya.

Table 2: Demographic Features of LREB Counties

	County	Total Population	Density
1	Trans Nzoia	990,341	397
2	Nandi	885,711	311
3	Kericho	901,777	370
4	Bomet	875,689	349
5	Kakamega	1,867,579	619
6	Vihiga	590,013	1047
7	Bungoma	1,670,570	552
8	Busia	893,681	526
9	Siaya	993,183	393
10	Kisumu	1,155,574	554
11	Homa Bay	1,131,950	359
12	Migori	1,116,436	427
13	Kisii	1,266,860	957
14	Nyamira	605,576	675

<sup>&</sup>lt;sup>13</sup> Population Census 2019

Figure 2: Population of LREB Counties



### 2.3: Socioeconomic features of the Lake Region Agriculture

Farming and fishing are the dominant agricultural activities of the region. In the highlands of Bomet, Bungoma, Kericho, Kisii, Nandi, and, Nyamira farming is the dominant activity with the cultivation of food crops such as maize, beans, bananas and tomatoes; the dominant cash crops include wheat, tea and dairy farming, horticulture and floriculture. In the lowlands around the Lake Victoria, which covers Busia, Siaya, Kisumu, Homa Bay and Migori counties are predominantly engaged in fishing and farming. The main crop grown the area is maize. The area also has the potential to produce rice, sugarcane and cotton. The lowlands also have potential for livestock farming and an expansion of fishing and aquaculture activities. In Migori, a blending of fishing and farming exist. Main crops grown include maize, sugarcane, tobacco and sorghum. In the Western regions of the Region around Bungoma Busia, and Kakamega, farming is dominated by the cultivation of cabbage, avocado, maize, tea and sugarcane. The area is also showing increased interest in fish farming. The climatic conditions and the rainfall in the lake basin counties tend to support agricultural activity.

Despite favourable ecological features. productivity of agriculture sector remains low primarily due to the use of the traditional farming methods coupled with cultural practice of land inheritance. This has led to a dominance of small size land holdings on which limited agricultural activity occurs.



Photo: 1: Dominant Cereal Crop in LREB Region

Therefore, even though the region contains fertile arable land, the nature of land holdings makes it difficult to use modern farming methods. The matter is further complicated by the fact that most farmers in the region do not have title deeds stating their ownership of the land and are thus unable to use their land as collateral for credit qualification. In addition, small holder farmers here tend to have low levels of education, which is exacerbated by the fact that farmers cannot access extension services that could boost their productivity. As a result, the use of modern farming methods is marginal and tends to occur around sugar factories such as the South Nyanza Sugar Company (SONY) in Migori County, Muhoroni and Kibos Sugar and Allied Industries in Kisumu County, and Mumias Sugar in Kakamega County.

### Trade

Trade occurs across the region with several trading markets dotted in small and large town centres across the region. Some of the active trading centres include Kehancha, Kisumu, Migori, Kisii town, Oyugis town, Kakamega, Bungoma, Kitale, Liteni, Kendu Bay, Homa Bay, Sondo, Sindo and Mumias among others. Existing trade patterns are a useful platform on which further economic activity can be based.

### Urbanization

There is rapid urbanization in the Lake Region which is projected to double in the next decade. Urbanization in the region has both positive and negative consequences. The negative consequences include unplanned growth of urban areas often driven by young Kenyans migrating from rural to urban centres, often seeking employment. Positive consequences include the possibility of enhanced provision of services, the creation of jobs and potential improved quality of life. There has been notable growth in housing sector in Kisumu, Kakamega, Migori and Kisii that attracts contract youth labourers. However, formal employment creation in urban areas remains grim.

### Infrastructure

Infrastructure plays a critical role in any development. Studies indicate that quality infrastructure lowers the cost of doing business and therefore attract the foreign direct investment (FDI). In the Lake Region Economic Bloc, the some of the critical infrastructures such as transport, energy, roads, communication, water and waste remains underdeveloped. This has devastating impact on socio-economic development of the region. Transport infrastructure remains poor; less than 50 percent of the roads are paved. Only 30 percent of the population has access to electricity and most of the population has no access to adequate water and sanitation services. Part of the challenge in the infrastructure sector stems from the fact that the counties are predominantly rural; this often translates into higher costs of providing services to the population. Further, given the low-income generating capacity of these rural households, most are unable to afford connection costs associated with rural electrification. In terms of water infrastructure, opportunities exist to link the counties of Migori, Homa-Bay, Siaya, Busia and Kisumu through Lake Victoria. Air transport have been able to improve by the expansion of Kisumu Airport to International Level, and rehabilitation of airstrips in several counties including Kakamega, Kabunde in Homa-Bay County, Lichota in Migori and others in Bungoma County.

### **Poverty Rates**

A recent report titled the Kenya Economic Report 2020 named five out of 14 counties among others as the top 10 poorest in Kenya. According to the report, Bomet County is the second poorest county in Kenya but the first in the Lake Region Economic Bloc (LREB). It has a GDP per Capita of KSh28, 200. It's followed by Migori, Busia and Homa Bay in the Lake Region. This demonstrates that five out of 14 countries under LREB are classified as poorest in Kenya. In the past Kakamega, Bungoma and Kisii were included on the list for contributing 4.8 percent, 4.2 percent and 3.4 percent respectively to national poverty. The county's poverty incidence stands at 49.2 percent with more than 809,500 people living below the poverty line<sup>14</sup>. Given poverty rates in the Lake Region, it is important the Blueprint focuses on pro-poor policies and approaches targeted at poverty alleviation, equitable wealth creation and the creation of an environment in which individuals can be holistically productive.

### 2.4 Spotlights on Opportunities in the Lake Region

Key development opportunities for the region lie in the currently underexploited expanse of the region's

natural resources. For example, in the highlands of Kisii, Nyamira, Kericho, Nandi, and Trans Nzoia counties, receive adequate rainfall and have red volcanic soil that can support extensive, high yield farms. The dormant agricultural potential exists in Trans Nzoia, Nandi, Kericho, Bungoma, Kakamega and Vihiga where both cash and food crop such as sugarcane, avocado, coffee, banana, fresh beans, maize, and tea farming can be strengthened. Migori County has greater potential in developing sugarcane and tobacco farming as well as fishing along its Lake



Figure 3:Tea Farm in Bomet County

Victoria coast line. Kisumu and Homa Bay counties have potential for rice and cotton farming, as well as the cultivation of sorghum and sugar cane.

The development and growth of Horticulture and Floriculture is enormous and remains largely undeveloped. LREB, through partnerships is working on a robust direct export of Horticultural and Floricultural products including Fish products through the Kisumu International Airport. Along this line, also, is the proposed expansion of the Kisumu International Airport to have Cold Storage Logistics including dangerous Chemicals and Cargo Terminal at the Airport soon.

The natural resources of the region can also be tapped into for energy generation. Numerous rivers in the region offer opportunities for the development hydroelectric power in Odino in Kisumu County and

<sup>&</sup>lt;sup>14</sup> Kenya Institute for Public Policy Research and Analysis (KIPPRA)

Nyamira County. This can be extended to Migori County at Uriri (Gogo) where water falls are present. Harnessing water energy provides ample opportunity for the counties to cooperate and offer sustained electricity supply to the national grid.

The interface between the features of the Lake Region and the Blueprint exists in the 7 key intervention areas. Agriculture seeks to build on the region's natural resources to ensure food security in the region; Tourism seeks to more effectively market the natural features of the region to attract investment and inward bound visitors; Education seeks to invest in human capital to create productive labour that can raise the counties out of poverty; Health seeks to reduce the burden of disease in the region; Infrastructure seeks to create an interconnected region with adequate transport, energy and water infrastructure; Financial Services aims to modernize saving, lending and borrowing practices in the region; and ICT seeks to support the operationalization and management of all the aforementioned sectors using modern technology.

These key sectors, their growth opportunities and potential projects are detailed in the following sections of the Blueprint.

### 2.4: SWOT and PESTEL Analysis for LREB

### 2.4.1: Strength, Weakness, Opportunities and Threats

### STRENGTH

### The Lake Region has expansive arable land, which is agriculturally potential owing to its high level of fertility and rainfall patterns. For instance, Kericho, Bomet, Bungoma, Trans Nzoia, Kisii highlands are highly productive, while counties like Siaya, Homabay and Migori have large tracts of fallow, arable land suitable for agricultural activity.

- The Lake Region hosts major banks in Kenya such as Central bank, Kenya Commercial Bank, Absa bank formerly Barclays Bank and Equity Bank, which can surge trade among traders within the Lake Region Economic Block through loaning scheme.
- LREB hosts the best and strong tourists' attractions, which include Nature and Wildlife, Culture, Heritage and Community-Based Tourism, Adventure, Agro-tourism, Eco-tourism, Water Sports Tourism, and Health and Wellness Tourism.
- The region is also endowed with adequate human resources, and institutions of higher learning useful in establishing research in various development areas, particularly health, agriculture and educations with are devolved in larger proportionate scales.

### WEAKNESSES

- Weak governance amongst LREB members do not provide strong foundation to support the development of a prosperous economic block.
- Political alignments and transitions do not provide a platform for unity of purpose for the Economic Block.
- LREB lacks a legal framework that legally entrenches its operations thereby hindering a number of potential undertakings that require such

### **OPPORTUNITY**

- The Lake from is an opportunity for investment and promotion of blue economy around Lake Victoria that can extend beyond Kenya to the other east African Countries.
- The region has the opportunity of developing various potential value chains to promote industrial development and create employment opportunities.
- Local entrepreneurs and local companies in their effort to aid in fighting covid-19 have been in the forefront in making facemasks, PPE materials and other facilities such as hospital beds. Each county established special units with increased bed capacity to handle covid-19 cases.
- LREB has developed infrastructure which include the rehabilitated railway and Kisumu International Airport provide access to the region to promote intra and inter County trade links
- There is great opportunity to exploit the blue economy potential to further trade within the Great lakes region.
- Opportunity for Higher institutions of learning such as universities offering medical courses to engage in research that mitigate against the prevalence diseases within the region including covid 19.

### **THREATS**

- The changing phases of Covid 19 pandemic with new variants coming up portends a serious threat to socio economic lives of people at the LREB.
- National political alignments between the politicians and Governors of LREB is a threat unity of the region.
- LREB is experiencing reduced fish stocks in the lake due to unsustainable fishing methods, declining water levels, water hyacinth clogging the lake, insecurity due to piracy and absence of

legal groundings, including subscription from member county governments.

- All staff at the secretariat as seconded staff from respective county Governments. Hence the ELREB do not have staff of its own who are loyal to it and vision.
- Inadequate financial base to run its activity
- The lake region still lacks ring-roads which can facilitate the transportation of fish and tourism on its shores
- disaster response mechanisms, plus pollution occasioned by the disposal of industrial effluent and raw sewage into the lake.
- The effect of climate change has a huge impact of agricultural productivity with the LREB member counties.
- LREB is still characterized by high poverty level, instability, rapid population growth and environmental degradation. People living around the Lake are the poorest even though the lake resources around them benefit many countries through fish exportation

### 2.4.2: Political, Economic, Social, Technological, Environmental and Legal factors

### Political, Economic, Social, Technological, Environmental and Legal factors

Political	<ul> <li>Politically LREB is not viewed as a tourist destination that warrants government support and investment and thus does not feature in activities and allocations related to tourism.</li> <li>Varied political affiliations among the County leadership presents dynamics in participation in LREB and compliance by the member counties.</li> <li>Transition within LREB County governments affects its operation since during transition there are counties, which positively support LREB activities and those against the ideology.</li> </ul>
Economic	<ul> <li>LREB has high potential for tourism owing to its many attractive nature and wildlife, culture, heritage and community-based tourism, adventure, agro-tourism, eco-tourism, water sports tourism, and health and wellness tourism; however, this has not translated into the counties percapita.</li> <li>LREB counties lack sustainable funding and rely on member counties contributions to support their operations, however, Counties are challenged to contribute resources given lack of legal instrument.</li> <li>Although the Lake Region counties have diverse potential of agro-processing industries, however the region lack intensive private investment to surge agricultural development for improved regional per-capita.</li> <li>Industrial development in LREB has had a set back with the collapse of giant industries in the sugar, cotton, and fish sectors with team sector still remaining a float.</li> <li>Inter county trade is an avenue that expands economic spaces among the communities with the LREB region.</li> </ul>
Social	<ul> <li>Some of the LREB Counties still face inter-boundary conflict thus affecting their co-existence as the Lake Region Counties.</li> <li>Inter marriages among the ethnic communities living within the LREB region is a great contributor to social cohesion and strengthening inter-ethnic fabrics, hence an asset in unifying the different populations and learnings across different cultures.</li> </ul>
<u>Technological</u>	<ul> <li>Some of the counties within LREB still have little access to ICT services and infrastructures, especially in the rural areas.</li> <li>The power and high energy costs presents a big impediment to technological advancement of LREB counties.</li> <li>Likewise, due to low connectivity most traders especially in the rural areas still cannot transact their business through online.</li> <li>Further, there is limited ICT training and education that limits the extent to which the ICT can enable higher economic productivity in the region.</li> <li>LREB has not exploited the great potential of water it has for agricultural and power production due to lack of technology.</li> </ul>
Environmental	<ul> <li>LREB still faces a number of environmental threats, including perennial flooding which interfere with people's livelihoods and loss of property including lives.</li> <li>LREB also face pollution of major revers and lake by agro-processing industries and poor methods of using agro-chemical in the upstream farms.</li> <li>Contribution by LREB to climate change adaptation is an area of significance based on the evolving global warming and climatic challenges.</li> <li>Waste management by LREB counties is a potential area that member counties can harness as an economic investment that should be scaled up to the level of using waste as raw materials for processing products.</li> </ul>

## LREB lack direct and sustainable financial pool to implement their activities since the member County Governments also rely on funds from National Government, which their utilization are restricted by legal framework. LREB lack policies, laws or institutional frameworks and mandates to regulate utilization existing resources at the county levels, thus making the people around the Lake Region to be the poorest despite having plentiful lake resources around them. LREB presents a platform for triggering County assemblies to undertake legislations that entrench useful policies that domesticate LREB development road maps to address county specific needs and focus areas.

### 3.0: PRODUCTIVE SECTORS: AGRICULTURE & TOURISM

### 3.1: Agriculture

In Kenya, agriculture remains a major engine of growth, which accounts for just over a third of the total value of the economy. It is a key sector of the Kenyan economy and employs the largest number of Kenyans in a single sector. Agriculture is a key sector of the Kenyan economy and employs the largest number of Kenyans in a single sector. Agricultural activities include food and cash crop farming, livestock farming as well as fishing and aquaculture. In 2020, the agriculture sector recorded mixed performance. Sector growth decelerated to 5.4 per cent compared to 3.0 per cent in 2019. The observed performance is attributed to the Covid-19 pandemic coupled with inadequate short rains during the year under review<sup>15</sup>. Under the Constitution, agriculture functions are devolved and county governments can leverage public-private partnerships (PPPs) to enhance agricultural production and productivity. Statistics indicate that the agricultural sector directly accounts for about 23 percent – which was a decline from 26 percent recorded in 2019 of Kenya's GDP<sup>16</sup>. The sector accounts for 65 percent of Kenya's total exports and 18 percent and 60 percent of the formal and total employment, respectively<sup>17</sup>.

Economic Survey 2020 indicates that the sectors' contribution to gross domestic product (GDP) was 34.1 percent in 2019, compared to 30.2 percent in 2015. The sector plays a key role in job creation, production

and income generation. In the formal sector, total wage employment in this sector rose from 336,900 jobs in 2015 to 338,600 jobs in 2019. In addition, the sector has strong forward and backward links with other economic sectors, particularly manufacturing, which shows the importance of the sectors in stimulating further highlights economic growth in the country



Photo: 2: Workers Picking Tea in Kericho County

### Impact of Covid into the sector

The agriculture sector is the largest employer in Kenya. However, the measures taken by Ministry of Health to curb the spread of Covid-19 have disrupted both demand and supply of agricultural products in the local market, particularly in the Lake Regions where agriculture is labour-intensive. Although agriculture is designated as an essential service and exempt it from the restrictions in movement, the shift in demand from commercial to households coupled with the limited availability of logistical services has hit the sector hard.

Women who are the backbone of agriculture and play a vital role in the local retail market suffered immense loss. The restriction of mobility and closure of markets prevented most products to reach their

<sup>&</sup>lt;sup>15</sup> WHO Policy Brief Issue No 4/2020 Articulating the Pathways of the Socio-Economic Impact of the Coronavirus (Covid-19) Pandemic on the Kenyan Economy

<sup>&</sup>lt;sup>16</sup> Economic Survey 2021

<sup>&</sup>lt;sup>17</sup> Kenya Institute for Public Policy Research and Analysis (KIPPRA) 2020

destinations thereby reducing the income they would have fetched from the crops given that they had to struggle to sell their produce and procure agricultural inputs.

# 3.1.1: The State of Agriculture in the Lake Region

The Lake Region has the advantageous environmental features of arable land, good soil, and consistent water supply from rain as well as several rivers and lakes. These features have formed the foundation on which residents have relied on for generations. In the past these features were adequate to ensure the food security of the region, however over the past 50 years Kenya's population, and that of the Lake Basin region, has grown to a point where existing farming practices and food supply chains do not current food security needs. The main farming practices in the region include small-scale rain-fed farming, small-scale river irrigation, wetland farming, fish farming and free-range livestock keeping.

## **Crop Farming**

Key crops farmed in the region are divided into cash crops and food crops. Key cash crops are sugarcane tea, pyrethrum and cotton; key food crops are maize, rice, and beans, and horticultural crops such as passion fruits, mangoes, and tomatoes. Clear opportunities exist to enhance the productivity of these crops particularly sorghum, soy beans and sugar due to the demand for these crops at national level. The table below is an illustration of the major food and cash crops.

## Sugarcane

Lake Economic Region Bloc in viewed to be the bedrock of the sugarcane industry in Kenya. It's an important cash crop for the region and is a major employer of rural populations and client to rural farmers in the region. The sugarcane as a cash crop contributes an estimated 15 percent to the agriculture GDP in Kenya. Statistics indicate that out of 11 out of 14 counties that grow sugarcane in Kenya comes from the Lake Region<sup>18</sup>. The cash crop is grown in Bungoma, Kakamega, Busia, Trans Nzoia, Nandi, Kericho, Kisumu, Siaya, Homa Bay, Migori and Kisii. in Approximately 250,000 small-scale farmers operate in the sugar industry and supply over 92 percent of the cane milled by sugar processing companies (Kenya Sugar Board, 2019). Further, according

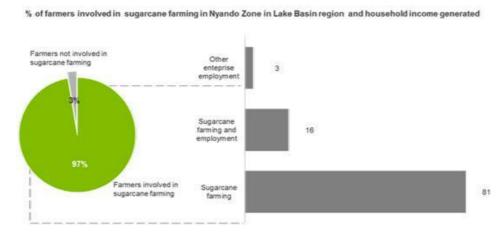


Figure 4: Farmers Involved in Sugarcane Production

to the Kenya Sugar Board, the industry directly and indirectly employs approximately six million Kenyans (Kenya Sugar Board, 2019). However, despite the region increased production, the gap between sugar production and consumption in the

<sup>&</sup>lt;sup>18</sup> Kenya Sugar Authority website

country is still very huge. The gap is attributed to production fluctuation. A study conducted in the past indicate that over 97 percent of farmers in Nyando zone of Nyanza are involved in sugarcane agriculture and derive about 81 percent of their household income from it. Kakamega County is also an important player in the sugar industry and hosts one of Kenya's largest sugarcane processing firms, Mumias Sugar Company. The sugarcane industry has additional economic impact due to its contribution to Kenya foreign exchange through exports as well as providing inputs into other industries. According to the Kenyan Sugar Board, the industry saves Kenya over USD250 million in foreign exchange annually and contributes tax revenues to the Exchequer (VAT, Corporate Tax, personal income taxes) (Kenya Sugar Board, 2019). The industry also provides inputs to other industries such as bagasse for power generation and molasses for the manufacture of industrial products such as ethanol, beverages, pharmaceuticals, and confectionery. The production potential of the industry is measured at over 1 million tons of sugar if operated at 89 percent of industry capacity. In terms of challenges, the industry struggles with inefficiencies in both production and the processing value chains.

## Soybeans

Soybean is an important crop in the world. The crop has economic, nutritional and functional values that warrants attention in Kenya where over 30 percent of children are malnourished, unemployment rate is over 40 per cent and fertilizer use is low. The crop has the ability to fix nitrogen, thereby taking care of fertilizer which is very expensive especially to poor farmers. The crop has been recommended by nutrition experts due to due to its high protein content of 40 per cent and oil content of 20 percent that have essential amino acids and unsaturated oils respectively to deal with increasing lifestyle diseases and already high levels of undernourishment in the country. The crop can grow in varied agronomical areas, convertible to many products e.g. tofu, soymilk, soy beverages, soy seasonings and soy meal and be an ingredient in many products such as bread, cakes and breakfast cereals. Soybean can form a huge industrial base for a developing country such as Kenya. However, Soybean production in the country has remained low and has never picked up since it was introduced in 1909<sup>19</sup>.

Soybean production in Kenya remain low despite its huge demand to supplement protein. The crop is grown in the maize growing areas. It requires temperature between 21 and 32 degrees centigrade. Kenya consumes about 400,000 Metric Tonnes (MT) of vegetable oils of which soybeans are constituents but produces only 2,396 tonnes – the rest are imported (Jonas N. C et al, 2008). Animal feed use of vegetable oil is 150,000; this combined with human domestic consumption of vegetable oil indicate ample opportunity to increased soybean production to meet existing demand. The crop is grown in Central, Nyanza, Eastern, Rift Valley and Western. However, statistics indicate that counties within the Lake Economic Region Bloc leads with over 50 per cent production in the country. In western Kenya counties which produce the legume include Busia,

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<sup>&</sup>lt;sup>19</sup> ICRISAT (2013). A Bulletin of the Tropical Legumes II Project

Bungoma, Kakamega, Vihiga, Busia and Bungoma, while in Rift Valley Kericho, Nandi, Trans Nzoia and Bomet also produce the crop (Jackson, A.S., 2017).

## Sorghum

Sorghum is a major food grain in Africa. It is also used to make traditional beer brewing. It's one of the food grains that is being under-utilized in Kenya given that it's the only cereal crop that does well in semi-arid tropics. It requires temperature between 21 and 32 degrees centigrade (Dorcas et al (2019). In Kenya, sorghum is grown in drought prone agricultural areas of Coast, Eastern and Nyanza. The staple food is grown by most low-income households in Kenya. According to the Food and Agricultural Organization (FAO, 2016), sorghum is the only indigenous crop in the region and can grow in many areas including those with low-agricultural potential (Jackson, A.S., 2017). The crop is also widely grown in Lake Basin region (see Figure 3). The production of sorghum fluctuates despite registering a production increase of 40 percent over the past 10 years, between 2016 and 2019 the production of the crop increased by nearly 75 per cent.

Most rural farmers in Busia and Homa Bay counties do harvest between 40kg and 1000 kg per acre of Sorghum of which up to 240 kg is consumed and the rest sold to other households (Weber, 2012). Research show that Kenya trails Ethiopia, Uganda and Tanzania in sorghum production in Eastern Africa. In 2017,

Kenya produced 144,000 metric tonnes of sorghum and imported 133,000 metric tonnes to curb the deficit while Ethiopia leads the region with over 280,000 tonnes.

The production of sorghum in Kenya has largely remained non-commercialized with most farmers producing only for home consumption. However, that has changed for the better for farmers, with ready market from beer manufacturers turning the crop into gold in



Figure 5: Sorhgum Crop

rural Kenya. Most farmers in the arid and semi-arid regions in Kenya are minting billions of shillings by planting the crop. The drought-tolerant crop is putting money in farmers' pockets. Besides, the value chain of the crop such as sorghum beer consumers, transporters, distributors and non-state organizations offering extension services are among the happy lot (National Sorghum Production Statistics, 2016).

Table 3 Regional percent contribution of production and crop area of Sorghum

Kenya Sorghum Data					
Year	2012	2013	2014	2015	2016
Harvested Area (HA)	223,404		207,871	195,507	184,654
Production					
MT	166,322	168,857	175,965	238,656	125,132
Yield (MT/HA)	0.74	0.75	0.85	1.22	0.68
Total Value (billion)	6.82	6.72	7.54	8.52	4.75
Imports(tons)	138,685	39,047	221,084	154,634	138,232
Exports(tons)	7,341	244	9,654	52,613	6,807

Figure 6: Regional percent contribution of production and crop area of Sorghum

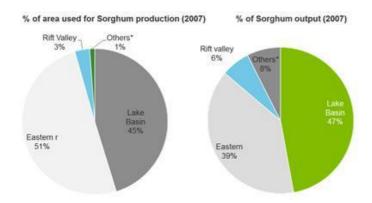


Figure 7: Annual consumption of sorghum in Kenya

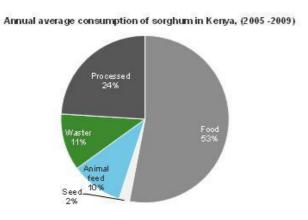
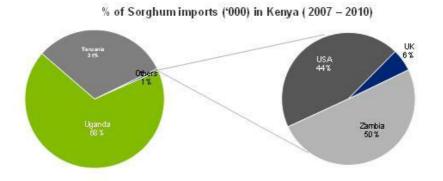


Figure 8: Sorghum imports and exports in Kenya in year 2007 to 2009



## Fish Farming

Lake Victoria accounts for about 96 percent of Kenya's total fish production. According to the Kenya's Economic Survey 2021, fish production in Lake Victoria has dropped to its lowest in the last five years from 90,743 tonnes to 86,659 amid water pollution and restrictive laws. Economic Survey (2020.) indicates that fish output from Lake Victoria accounted for 62.5 per Photo: 3: Tilapia from Lake Victoria cent of the 120,873 fresh water fish in 2019. In early



2000, 150,000 to 200,000 tonnes of fish catch were achieved annually. However, pollution and overfishing are threatening fish stocks and its economic contribution to the Lake Region. The Lake Victoria Fisheries Organization (LVFO) states a 55 percent decline of Nile Perch in Lake Victoria between 2005 and 2008, and a 9 percent drop in tilapia catch over the same period (LVFO). The declining stock has had the domino effect of a twofold increase in consumer fish prices squeezing out affordability of fish for some households which then decreases household income for fish farmers who meet lower demand due to higher pricing.

Table 4: Trends of Fish Production in Lake Victoria (2016-2020)

	2016	2017	2018	2019	2020
Lake Victoria	98,666	92,727	98,150	90,743	86,659

Lake Victoria is relatively shallow, with a maximum depth of 84m and mean depth of 40m, which makes it susceptible to pollution. Already densely populated, the population around the Lake is expected to double by 2028. High population influences increased pollution from raw waster deposited in wetlands, and the uncontrolled spread of homes, factories, farms and hospitals around the basin exacerbate pollution. In addition, fishermen operating in regions use insecticides such as endosulfan to catch small fish. All these factors exert negative pressure on the Lake.

Despite these challenges, the Lake Region still carries significant further potential for fish farming through its current water bodies, particularly Lake Victoria, riverine fisheries and through inland fish farming development. The fishing sector in Kenya serves as an important source of food and

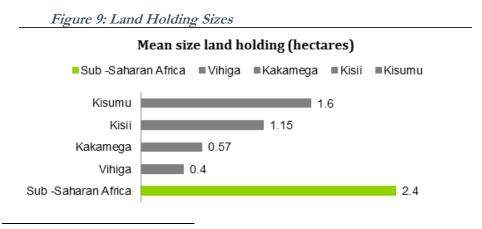
employment, providing between 100, 000 and 200,000 fishermen with a direct source of livelihood in Kenya<sup>20</sup>.

# 3.1.2: Key Agricultural Challenges in the Lake Region Declining yields

A key challenge with regards to farming is declining yield per hectare and the lowering quality of yields. This is attributed to small farmland size holdings, use of poor farming methods and the lack of legal title deeds which then impedes possibilities of farmers getting access to credit. Interestingly, in certain counties such as Migori County the problem is the underutilization of large tracts of fertile land.

Additional challenges include climate change, deforestation, soil erosion, wetland drainage, the lack of education and agricultural extension services, as well as the failure to manage the effects of climate change. Studies indicate that the rising temperatures, prolonged droughts, extreme and erratic rainfall events all have significant socio-economic and ecological impacts on the Lake Region. Unsustainable activities such as deforestation, land quarrying and sand harvesting cause extreme flooding leading to soil erosion across the Lake's catchment especially along riverbanks and in farmlands. All these factors contribute to the sector's declining contribution to national development, regional development and the food security in the Lake Region.

In counties such as Nyamira and Vihiga, population density is an impediment to agriculture because the sheer density of people prevents the uptake of mechanized farming and growing farms scales to improve productivity particularly about cash crops. In Vihiga County for example, the mean holding in farm size is only 0.4 hectares for small scale farming and 3 hectares for large scale farming. In Kakamega the average land holding size is 0.57 hectares, in Kisumu County the mean holding size is 0.65 hectares and farm holdings in Kisii range from 0.2 to 2.1 hectares. Compare this to the average farm size in Sub-Saharan Africa of 2.4 hectares.



<sup>&</sup>lt;sup>20</sup> African Great Lakes, Aljazeera News Network

The average size of land holdings will continue to reduce due to the cultural practice of subdivisions of the land for each person in the family for inheritance purposes. The combination of growing populations and reducing land holdings means that more arable land will be used for residential purposes. New thinking needs to be developed to forestall this trend of rapidly converting arable land into residential land. On the land that is used for farming purposes, yields will continue to decline as ever decreasing land holdings are over cultivated to feed growing populations. In addition, key cash crops require at least 0.8 hectares for good production. Further, there is a need for land to be designated as residential, commercial or agricultural land and the creation of measures that prevents the issuance of title deeds to parcels of land below a certain size.

## Poor agricultural practices

On the other hand, the Lake Region suffers for the opposite problem as well. Counties such as Siaya, Migori, Busia and Bungoma have large amounts of land, but still record low productivity. The lack of irrigated acreage, collapse of agricultural extension services system and the continued use of poor agricultural practices all lead to low yields. In addition, although there have been efforts to integrate value addition into the sector particularly for cash crops such as tea and coffee, the region continues to be a net exporter of unprocessed produce and importer of finished products.

#### Lack of title deeds

Related to the size of land holding is the low percentage of land with title deeds. A review of the information in the County Integrated Development Plans (CIDP) indicates that large proportions of land holders do not have title deeds; the land is simply passed down from father to son in the traditional spirit of inheritance. In Homa Bay County, only 48 percent of land has title deeds, in Kisii this figure stands at 40 percent. There are numerous reasons behind low title deed issuance. As the counties are mostly rural, local communities do not feel the pressure to have rights over transactions related to the land as they have the view that the land should be free for use in the most productive manner possible. There is also a sense of an unwritten understanding of which households hold each parcel of land. Another reason behind low title deed issuance is the associated cost, often prohibitive for most county residents.

The lack of title deeds has serious implications to the county's development. Firstly, the lack of title deeds prevents most of the population from accessing credit facilities that could be used to boost agricultural productivity. Secondly, the lack of legal title depresses demand for rural land because potential buyers do not want to negotiate the complexities of proving ownership. As a result, the exchange value of some of the most productive land in the region is low. The lack of legal ownership also makes it difficult for owners to come together and combine smaller pieces of land into a mass that can more effectively attract capital investment. Lack of title also makes it difficult for industries that could process farm produce to be set up in the region. There is a need for proper land adjudication and demarcation of public, private and community land to ensure that the land is properly utilized within the existing legal framework.

## Low uptake of research

Another key challenge is the low uptake of research and technology in the agriculture sector. Although Kenya has some of the most robust agricultural research institutes such as the Kenya Agricultural and Livestock Research Organisation, (KALRO), research findings often do not reach small holder farmers (who make the bulk of producers). Farmers are neither told about new crop and livestock varieties nor briefed on advanced farming practices. As a result, the uptake of new crops, with higher returns per acre, such as soya beans, remain unexplored. Poor performance of new seed varieties negatively impacts on the farmer's perception and attitude and thus become reluctant to embrace new seed varieties, some which would provide ready solutions towards attaining food security.

## Other Key Challenges

- Heavy postharvest losses especially by small holder farmers;
- Unpredictable rainfall/ low rainfall in some areas;
- Over reliance on rain fed agriculture;
- High inputs cost;
- Flooding;
- Weak marketing Channels;
- Crop diseases and pests;
- Accidental fires that destroy farms;
- Delayed harvesting by farmers which reduces crop quality and yield;
- Inadequate market infrastructure namely storage, sales area, loading/unloading facilities; and

• No organized access to trading and individual credit facilities.

# 3.1.3: Economic Opportunities in the Agriculture Sector

Despite the challenges, the Lake Region offers numerous opportunities for expansion and diversification in crop, livestock and fish farming. The County Integrated Development Plans as well as the results from the field visits note the following opportunities:

**Flagship Project:** Creation of a Commodities Exchange Skills development and training on improved farm management. High Value Crop Farming: Particularly soya beans, sorghum, floriculture and horticulture

- Fish farming
- Large Scale Irrigation
- Agro Processing and Value Addition
- High Value Crop Farming

# High Value Crop Farming

# Spotlight on Soy Beans

Kenya consumes about 400,000 Metric Tonnes (MT) of vegetable oils including soy bean oil. Local production only meets a third of this demand. In addition, the manufacture of animal feeds has increased demand for soybean cake. Kenya has the potential to absorb up to 150,000 MT of soybean annually. Further, there are industrial uses of soybean such as in the manufacture of anti-corrosion agents, core oils, bio fuel, disinfectants, pesticides/fungicides, printing inks, paints, adhesives, antibiotics and cosmetics

#### Fish Farming

The long-term sustainability of current fishing output in Lake Basin is not guaranteed because of overfishing and pollution. Sustainable practices in fish farming can result in greater yields and variety of fish from the region and improve income generation of fishing communities. Proposed activities in which the region can invest are detailed below.

For successful implementation of the listed interventions, the region needs to secure buy-in from fish farmers through the following:

- Production of high-quality fish feed from local and easily available ingredients;
- Revive/ Create fish farming groups and cooperatives that can support fish farming activities;
- Establish a fish Processing Factory;
- Raise awareness of the economic viability of farmed fish in rural communities; and

• Establish local feed mills and hatcheries to reduce transport costs for important fish farm inputs.

Table 5: Proposed Fish Farming Activities in Lake Basin region

Activity	Description of project/intervention	Expected impact
Establishment of Cold Storage facilities	The facilities can be used for handling, processing and packing freshly caught fish. The storage facilities can be made in conjunction with farmers.	Cold storage facilities allow for better preservation of fresh fish and increase of fish shelf-life. As a result, fish can be sold at a higher price during low season or promoted for export. Establish Cold Chain Logistics and Cargo Terminal at the KIA
Construction and rehabilitation of fish ponds	Fish ponds that serve as a breeding and farming location for fish	Higher production of fish in the region
Provision of extension services	Extension services to provide support and promotion of fish farming among farmers	Increased engagement of farmers in aquaculture which in turn improves region income and economy
Partner with animal feed manufacturing plants	Animal feed plants can use waste from fish fillet production for animal feed as well production of fish meal, fish oil and fish skins.	Reduces wastage of fish farming by- products

# **Large Scale Irrigation**

Large scale irrigation is an important vehicle for increasing productivity of high value crops in the counties especially sugarcane, soy beans, tea, rice and cotton. Large scale irrigation cannot only increase crop production to meet the national and export demand by guaranteeing enough water supply, land acreage is used optimally. Counties with high potential for large-scale irrigation schemes are areas with underutilized yield of high value crops, including Bungoma, Busia, Kisumu, Migori and Siaya. The irrigation component strategy falls in line with the Government's Development Strategy to open at least one million acres of new land under irrigation. As the Lake Region has limited experience in irrigation investments, it is important to ensure adequate financial and technical support is secured.

## Agro-Processing

Kenya imports nearly KSh12 billion worth of edible oil alone per year. The Lake Region can establish new agro-processing factories and invest in the improvement of existing factories. The region is still a net exporter of unprocessed produce and an importer of finished products. Bolstering agro-processing industries will clearly reduce the cost of imports and enable the region to meet the national and export demand of finished products. Illustrative processing projects are summarized below.

In order to build a vibrant agro-processing sub-sector, the following ought to be considered:

• Government policy reforms and support

- Government must continue its efforts to privatize/lease the existing sugar cane factories to attract private investment;
- Government support of a mandate of blending ethanol with petrol to promote ethanol production and use;
- Electricity generation would require a connection to the national grid and a purchase agreement to enable the sale of excess electricity.

## Integration with small scale holder farmers:

Formation of cooperatives with a membership of smallholder farmers in order to combine land use into large areas for mechanised agricultural production.

Table 6: Illustrative Agro-Processing Projects in the Lake Region

County	Description
Edible Oil Processing	Establish a factory that processes sunflower, cotton, soy bean and groundnuts into
Factory	edible oil.
Sugarcane Processing	Invest in existing state-owned sugarcane processing factors
	Establish a new factory with sugarcane processing technology
Coffee and tea factories	Complete the process of production and add value to the farm produce to be sold in markets
Juice & Canning Factory	Process and can horticultural products such as pineapple, and tomatoes. In Vihiga, there is potential to increase production of passion fruits into fruit juices
Milk Factory	To process large quantities of milk and diversify further to production of powdered milk. <sup>21</sup> . There is huge potential in Bomet County

In addition, LREB has been involved in the Kenya Sugar Sector Reform Program with other stakeholders, and they have since come up with recommendations awaiting implementation by the Kenyan Government. Once this is done, almost three quarters of the LREB member Counties will have their economic potential unlocked. Member Counties covered are: - Migori, Homa Bay, Kisii, Nyamira, Kericho, Nandi, Kisumu, Kakamega, Siaya, Busia and Bungoma. This indeed show the crucial role of LREB in the promotion of welfare of her citizen.

Table 7: Investment Opportunities in the Agriculture Sector per County

<sup>&</sup>lt;sup>21</sup> Lake Basin Development Authority

County	Agricultural Opportunities
Bungoma	<ul> <li>Food crop farming (maize, French beans, Snow pea, beans, finger-millet, sweet potatoes, Irish potatoes and assorted vegetables)</li> <li>Cash crop farming (bananas, sugar cane, cotton, palm oil, coffee, sun-flower, tobacco)</li> <li>Livestock farming (cattle, sheep, goats, donkeys, pigs, poultry)</li> <li>Bee keeping</li> <li>Fish farming in fish ponds and dams</li> <li>Agroforestry (apiary systems, aquaculture, biomass transfer, boundary planting, fallows, fodder banks, orchards, hedgerow/alley cropping, home gardens, live fences, ornamental planting sericulture, terrace stabilization, trees on cropland, woodlots)</li> <li>Egg Plant</li> <li>Bell Pepper/Sweet Paper</li> <li>Coriander</li> <li>Long Cayenne Chilies</li> <li>Bullet Chilies</li> <li>African Birds' Eye [Abe] Chillies</li> </ul>
Homa Bay	<ul> <li>Food crop farming (maize, beans, sorghum, millet, kale, sweet potatoes and peas)</li> <li>Cash crop farming: cotton, sugarcane in Ndhiwa, horticulture, sun flower growing in Suba, pineapples in Rangwe and potatoes in Kasipul and Kabondo Kasipul</li> <li>Fish farming</li> <li>Banana</li> <li>Mango</li> <li>Avocado</li> <li>Brocolli</li> <li>Corriander</li> <li>Cotton farming in Mbita, Homa Bay Town, Rangwe and Karachuonyo Sub-counties</li> </ul>
Kisii	Food crop farming (maize, bananas, beans, potatoes, tea, sugarcane, coffee and horticultural crops) Livestock farming Fish farming Cash crop farming (tea, bananas) Tree seedling production Soapstone
Kisumu	<ul> <li>Sugar cane farming in Muhoroni, Chemelil, Kibos</li> <li>Rice in Nyando and Awach, Chemelil, Miwani and Kibos.</li> <li>Fishing in Kaloka Beach, Ndere Island, Kisumu Port, Dunga Beach, Sango Beach and Kusa Beach</li> <li>Agroforestry</li> <li>Soya bean farming</li> <li>Sorghum farming</li> <li>Rice Mill</li> <li>Banana</li> <li>Mango</li> <li>Avocado</li> <li>Pineapples</li> <li>Textile</li> </ul>
Siaya	<ul> <li>Food crop farming (maize, sorghum, millet, beans, cowpeas, cassava, sweet potatoes, groundnuts and finger millet)</li> <li>Cash crop farming (cotton, rice, sugar cane and groundnuts)</li> </ul>

	<ul> <li>Emerging crops (irrigated rice, palm oil, chilli, passion fruits and grain amaranth)</li> <li>Livestock farming (zebu cattle, up-grade and pure dairy cows, dairy goats, poultry, local goats,</li> </ul>
	sheep, pigs, rabbits, donkeys)  • Bee keeping
	Fish farming in Lake Victoria, Lake Kanyaboli, dams and fish ponds
	Agroforestry: Tree nurseries, fruit trees and establishment of woodlots     Pigo production in Yele systems.
Vihiga	<ul> <li>Rice production in Yala swamp</li> <li>Food crop farming (maize, beans, millet and sweet potatoes)</li> </ul>
viing <b>u</b>	• Cash crop farming (tea and coffee)
	Livestock farming (dairy cattle, poultry, rabbits)
	Fish farming in fish ponds in Emuhaya
	• Expansion of Mudete tea factory
Dunia	Cottage Industry      Toold grap forming (points aggreen finger millet began as release graphy miles gra
Busia	• Food crop farming (maize, cassava, finger millet, beans, sorghum, rice, sweet potatoes, cowpeas, groundnuts, bananas, green grams, sesame, soya beans)
	• Horticulture farming (pineapples, avocado, purple passion fruits, tomatoes, kale, cabbage, water
	melons, indigenous vegetables, papaya, amaranth, onions and, mangoes)
	Cash crop farming (cotton, tobacco, sugarcane, oil palm, and pepper)
	Fishing in Budalang'i and Funyula
	• Pineapples
	Pawpaw Garlic     Parsley
Migori	Food crop farming (maize, sorghum, beans, cassava, finger millet and sweet potatoes)
<b></b>	Cash crop farming (tobacco, sugarcane, potatoes (Kuria) and maize (Kuria))
	Sunflower and Sisal farming in Nyatike sub-county
	• Irrigation schemes along the rivers
	Gold Mining
	• Groundnuts
	<ul> <li>Dairy farming</li> <li>Accelerated Bamboo Farming and Utilization Project in Suba East</li> </ul>
	Rice farming in Uriri, Rongo, Migori, Kuria West & Awendo sub-counties
Nyamira	• Cash crop farming (tea, coffee, pyrethrum and banana)
•	• Food crop farming (maize, beans, cassava, sweet potatoes, vegetables, millet and sorghum)
	Horticulture
	• Livestock farming (dairy cattle, beef cattle, pigs, goats, sheep, poultry, rabbits)
	<ul> <li>Upgrading of indigenous livestock breeds</li> <li>Construction of tea buying centres</li> </ul>
	Rehabilitation of the coffee factories
Kakamega	Food crop farming (maize, beans, cassava, finger millet, sweet potatoes, bananas, tomatoes, tea
C	and sorghum) maize and beans are usually grown on large scale.
	Cash crop farming (maize, tea and sugarcane)
	Livestock farming (cattle, chicken, goats, pigs)
	Forest farming in Lugari Constituency     Figh Forming
Kericho	• Fish Farming • Tea
110110110	• Dairy farming
	• Horticulture
	• Coffee
	Fruit Processing
Trans Nzoia	Cash crop farming: tea, coffee, sugarcane, pyrethrum, maize and sunflower
	<ul> <li>Food crop farming: maize, beans, finger millet, sorghum, sweet potatoes and cassava</li> <li>Horticulture</li> </ul>
	Livestock farming (dairy cattle, indigenous chicken)
	14 VCOUCK TAITHING (MAILY CALLE, INCIGENOUS CHICKEN)

	Bee keeping
	Fruit processing
	Textile Cottage Industries
	Fruit processing
	Textile Cottage Industries
Nandi	Cash crop farming tea, banana, mango, avocado & pineapples
	• Food crop farming (maize, beans, cassava, sweet potatoes, vegetables, millet and sorghum)
	Horticulture
	Dairy farming (dairy cattle, indigenous chicken)
	Bee keeping
	Upgrading of indigenous livestock breeds
Bomet	Cash Crops farming tea, maize, avocadoes and coffee
	Food crop farming beans, Irish potatoes, sorghum, finger millets, sweet potatoes, tomatoes,
	cabbages, kales, onions,
	Dairy farming,
	Fish farming
	Poultry farming
	Develop Horticultural production
	Fruit Processing (Avocado and passion fruit)

# 3.1.4: Resource Mobilization Strategy

The Resource Mobilization Strategy for the agriculture sector in the Lake Region requires a threepronged approach i.e. Public Sector Financing, Private Sector Investment and Public-Private Partnerships:

## **Public Sector Financing**

The County Governments in the Lake Region have budgets for various agriculture projects. However, it is clear this funding is limited and cannot fund both development and recurrent costs of the sector. The blueprint proposes a regional pooling of funds by the county governments to support agriculture. A flagship project that would be financed by pooled funds, for example, is the Agricultural Commodities Exchange.

## **Private Sector Financing**

Private investment is key to agricultural development, but is currently limited. While public investment is necessary to create the infrastructure and an enabling environment for agricultural investment, a large proportion of the required capital is often made by private actors. In order to boost private investment in agriculture, incentives must be provided and constraints minimized. The blueprint proposes the following types of private investment:

## Foreign Direct Investment;

Guarantees Agricultural Lending: These can be supported by private sector as well as donor funding. Similar existing funds that provide guarantees include the Africa Agriculture Trade and Investment Fund;

- Public Warehousing System;
- Collateral Management; and
- Diaspora Remittances.

# **Public-Private Partnerships**

There are several innovative ways to stimulate private sector investments in rural infrastructure. The blueprint proposes PPPs that leverage funds from the private sector to invest in agricultural infrastructure or services benefiting small holder farmers in the Lake Region. The Africa Agriculture Trade and Investment Fund (AATIF) by KFW and Deutshe Bank provide loans, guarantees and to a limited extent equity, to experienced private sector enterprises and farmers located in Africa. It encourages the engagement of private investors that look for more 'risky' investment opportunities.

# 3.1.5: Socioeconomic Impact of the Agricultural Sector

The potential impact of interventions in agriculture are as follows:

- Giving smallholder farmers access to better-quality seeds, training and fertilizers has been seen to increase their yields—often doubling or even tripling yields (Unilever);
- Skills development and training on improved farm management creates a change in attitude towards farming as a business, creating employment and contributing to food security (IFAD, 2003);
- Providing access to up-to-date knowledge on good farming practices such as selection of crop
  varieties, crop rotation soil management and irrigation technology help farmers to mitigate
  and adapt to climate change (Unilever);
- Irrigating no-till fields could increase maize yields by 67 percent in 2050 (Immenschuh, 2014);
- Public investment that makes market centres broadly available to farmers improve farm productivity because great distances from market centres reduces farm yields (Evenson, 1998);
- The creation of a cooperative will provide practical experience to farmers, encourage them to talk about common problems, find solutions and to identify sustainability best practices all of which can improve farmers' profitability and increase their tea yields by an average of 5-15 percent. (Unilever);

• Incorporating sustainability practices in farming allows farmers to qualify for certifications such as the Rainforest Alliance certification that helps boost their incomes (Unilever).

#### 3.2: Tourism

Tourism industry in Kenya has witnessed tremendous growth in the last 10 years with new hotel and attraction sites being developed. The new hotels are of international standards with majority targeting the high-end market in both business and leisure segments. The hotels are built within the major towns or around attraction sites include village resorts. However, the hotels in the regions are rated between

1-4 star with last national classification having been carried out in 2015.

The sector has been a major contributor in Kenya's economic growth. In 2014, for instance, the sector contributed 10 percent to GDP and was ranked as the second highest foreign exchange earner and accounts for 11 percent of total employment (Ministry of East Africa, Commerce and Tourism). Over 99 per cent of the 5 top hotels have been constructed in Kenya in the last 6 years.

However, in 2020 due to the impact of the Covid-19 pandemic containment measures taken by governments across the world to curb the spread of the virus, the tourism sector registered a decline with the tourism earnings in Kenya declining by 43.9 per cent.

Kenya's main tourist appeal is found in the country's natural features, the safari experience as well as beach attractions. Traditional tourist attractions have become routine thereby providing an opportunity for the creation of non-traditional attractions unique to the Lake Region. Kenya's Vision 2030 identifies tourism as one of the sectors poised to make significant contributions to the socioeconomic growth of the country. This mandate however, will require efforts to address constraints facing the sector such as declining tourist numbers due to security threats posed to Kenya by Islamic militant groups. It is important for the Lake Region to be part of the conversation around how to overcome the challenges the sector faces, improve the quality of Kenya's tourist offerings and above all market itself as a new tourist destination and experience.

## Impact of Covid-19 on the Tourism sector in LREB

The pandemic has brought many impacts: First it brought job losses as most employees in the sector were declared redundant, it reduced the numbers of employees in form of unpaid leaves, laid-off temporary workers. Due to the closer of Civid-19 measure, those operating in the sector encountered severe loss of revenues. Other issues included unpaid cost of operating the businesses such as unpaid

rent and utilities. The cancellation of existing bookings and zero booking of fresh ones, temporary closure of travel, tourism and hospitality organizations. However, the long and immediate term include Business closure, low capital to restore normal business operations, evacuation of the current premises due to unpaid operating costs, lower bookings, slow resumption of tourism business, global economic recession is delaying international tourist arrivals, increased marketing activities and thus increased costs for business management, changes in consumer behaviour and expectations the social behaviour and loss of international licenses on the part of travel agencies due to payment defaults.

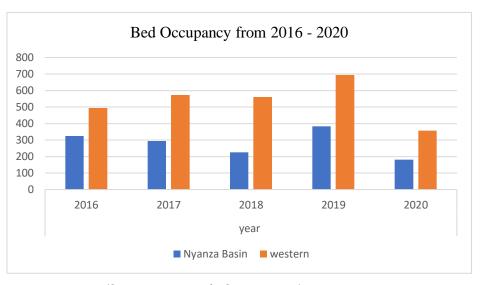
# 3.2.1 The State of the Western Kenya Tourism Circuit

Although still relatively unknown the Lake Region tourism sector, commonly known as the Western Kenya Tourism Circuit, is growing particularly through private tours that focus on tourists seeking novel experiences that have a direct socio-economic impact to the communities. The Western Kenya Tourism Circuit is, 'a new concept of tourism that seeks to move away from game safaris. Beach visits and partying that has taken root in Kisumu and is fast extending to other parts of western Kenya'. (Stella Chirono, Business Daily):

- Over reliance on the domestic market and business tourism brings low income from the local markets.
- 2) Lack of visibility especially in the international market. The national government through KTB has given more focus to the traditional key destinations of coastal beach attractions and the Maasai Mara. Neglecting the publicity of the emerging destinations with great potential like the western circuit
- 3) Poor infrastructure, lack of easy accessibility to some of the attraction sites like Ndere Island and Saiwa swamp

The Dutch Government signed a 10-year agreement with local tour operators to market tourism activities in 14 counties of the Western Circuit including Kisumu, Siaya, Bungoma, Migori, Kakamega, Busia, Kericho, Vihiga and Homa Bay. The Lake Region has a total of 695 hotel rooms available with an occupancy rate of 31per cent (KNBS, 2013). Beds available stand at 958 with an occupancy rate of 26 percent. This region is typically being referred to as the Western Tourist Circuit although stakeholders propose this be changed to Lake Region Tourist Circuit.

Figure 10: Hotel Occupancy in Nyanza Province and Western Province 2006 – 2020



(Source Economic Survey 2021)

Table 8: Hotel Occupancy in Nyanza Province and Western Province 2016 – 2020

Year					
	2016	2017	2018	2019	2020
Nyanza Basin	325.4	295.2	226	382.5	181.2
western	493.6	572	560.3	695	357.4

# 3.2.2: Current Attractions

The Lake Region hosts a wide range of tourist attractions with landscapes that range from lush green highlands and tropical forests to lake beaches and islands. Tourist attractions of the Lake Region are categorized as follows in this Blueprint: Nature and Wildlife, Culture, Heritage and Community-Based Tourism, Adventure, Agro-tourism, Eco-tourism, Water Sports Tourism, and Health and Wellness Tourism.

Table 9: Summary of Investment Opportunities in the Tourism Sector in the Lake Region

Category	Name of Activity	Attractions	Comments
Nature & Wildlife	Game viewing, bird	Kakamega Forest, Ruma	Minimally established
	watching,	National Park, Ndere	
		National Reserve, Mt.	
		Elgon National Park, Simbi	
		Nyaima, Gogo Falls,	
		Manga Escarpment etc	
Culture, Heritage and	Cultural events and	Thimlich Ohinga, Kisumu	Minimally established
Community Based	festivals, traditional music	Museum, Got Ramogi,	
	and dance	Cultural Festivals, Kit	
		Mikayi, Lwanda Magere etc.	

Adventure	Visits to sacred places,	Lake Victoria, Yala Swamp,	Minimally established
	waterfalls, forests and	Manga Ridge, Homa Hills,	
	other wildlife areas, scenic	Odino Falls etc.	
	viewing		
Agro and Eco-Tourism	Education and Research	Sugarcane Plantations,	Highly established
		Rice Fields, Tea and Coffee	
		Farms, Eco-lodges etc.	
Water sports and Health & Wellness	Boat riding, water rafting	Boat racing sites, Bala hot springs, Lake Victoria, Water rafting on River Nzoia etc.	Minimally established

#### Nature and Wildlife

This category targets those interested in wildlife, forests and scenic places of natural origin. In This category includes Kakamega Forest with an area of approximately 23,777.3 hectares and is the easternmost rainforest in East Africa and the only one in Kenya. Other attractions in this category include, Ruma National Park, Ndere Island National Park, Mt. Elgon National Park, Lake Simbi Nyaima Bird Sanctuary, Mbusi Rakuena Bird Sanctuary, Mbasa Island and Otok Bird Sanctuaries and Impala Animal Sanctuary in Kisumu. Additional attractions include water features such as Gogo Falls, Webuye Falls, Odino Falls, Manga Ridge and Escarpment, Ndano Falls and the Lake Victoria beaches.

## Culture, Heritage and Community Based Tourism

Culture and heritage tourism attract enthusiasts of different cultural and ethnic experiences. Although this is a new concept in the tourism sector some of the counties in the Lake Region are developing different products such as cultural festivals, cultural centres, cultural sports activities, such as, bull fighting events and ceremonies such as the circumcision rituals among the Bukusu of Bungoma County. Additional attractions are museums where cultural materials are displayed, mausoleums, archaeological and paleontological sites and several built heritage facilities like Thimlich Ohinga Cultural Landscape. Community Based Tourism also falls under this category as cultural and heritage events involve close engagement with local communities and can be structured in a manner that ensures communities benefit.

## Adventure

Adventure tourism involves exploration or travel to remote areas and includes activities such as hiking and mountaineering, trekking, rafting and rock climbing. The Lake Regions has multiple attractions such as the falls previously mentioned, Yala swamp and Manga ridge.

## Agro and Eco-Tourism

Agro-tourism involves any agriculturally based operation or activity that brings visitors to a farm, ranch or plantation. Eco-tourism refers to responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education. Sites for this category include forests, sanctuaries, swamps as well as organic farms; sugar cane growing areas of Mumias, Chemelil, Muhuroni and SONY; rice growing areas of Ahero Irrigation Farms; Dominion Farms in Siaya County as well as tea and coffee plantations in Kisii and Nyamira.

# Water Sports and, Health & Wellness

Water sports tourism and, health & wellness tourism are new concepts within the Lake Region and have not been explicitly developed to the standards that can be exploited by visitors Attractions include Homa Hills hot springs and the vast Lake Victoria

Table 10: Summary of Investment Opportunities in the Tourism Sector in the Lake Region

Category	Attraction	County	Site of Use
Nature &	1 Kakamega Forest	Kakamega	Moderately utilized
Wildlife	2 Ruma National Park	Homa Bay	Moderately utilized
	3 Ndere National Reserve	Kisumu	Minimally utilized
	4 Mt. Elgon National Park	Bungoma	Minimally utilized
	5 Simbi Nyaima Bird Sanct.	Homa Bay	Minimally utilized
	6 Mbusi-Rakuena Bird Sanct.	Homa Bay	Minimally utilized
	7 Mbasa Is. Bird Sanctuary	Homa Bay	Minimally utilized
	8 Otok Bird Sanctuary	Homa Bay	Minimally utilized
	9 Dunga wetlands	Kisumu	Minimally utilized
	10 Kusa wetlands	Kisumu	Minimally utilized
	11 Nyando wetlands	Kisumu	Minimally utilized
	12 Odino Falls	Kisumu	Minimally utilized
	13 Gogo Falls	Migori	
	14 Webuye Falls	Bungoma	
	15 Manga Escarpment	Nyamira	
	16 Impala Park animal Sanct.	Kisumu	
	17 Remba Island Bird	Homa Bay	
	Sanctuary		
	4 17.	17.	Ne : 11
Culture,	1 Kisumu Museum	Kisumu	Minimally utilized
Heritage and	2 Kit Mikayi	Kisumu	Minimally utilized
Community	Obama Kogelo Cultural	Siaya	Minimally utilized
Based Tourism	heritage.	Kisumu	
	Abindu Cultural site	Siaya	
	Lwanda Magere	Migori	Minimally utilized
	3 Got Ramogi	Homa Bay and	Minimally utilized
	4 Thimlich Ohinga Cultural	Migori	
	Landscape	Homa Bay	Minimally utilized

	5 Archaeological and	Bungoma	
	Paleontological sites	Busia	Minimally utilized
	6 Abasuba Peace Museum	Buom	Trimmany dunized
	7 Teso Cultural Festival	Vihiga	Minimally utilized
	8 Samia Cultural Festival	Siaya	Minimally utilized
	9 Maragoli Cultural Festival	Siaya	Willing dunzed
	10 Migwena Cultural Festival	Bungoma	Minimally utilized
	11 Bukusu Circumcision	Dungoma	Minimally utilized
		D	
	Ceremony 12 Chetambe Ruins	Bungoma	N. 11 11 11 1
		0:	Minimally utilized
	13 Jaramogi Oginga Odinga	Siaya	,
	Mausoleum		Minimally utilized
	14 Tom Mboya Mausoleum	Homa Bay	
	15 Achieng Oneko		Minimally utilized
	Mausoleum	Siaya	
	16 Elijah Masinde Mausoleum		Minimally utilized
		Bungoma	
	1 Sugarcane Plantations		
	2 Rice Fields – Ahero &		
	Dominion Farms		
	3 Tea and Coffee Farms		
	4 Eco-lodges Ndunga		
	wetlands		
Adventure	1 Lake Victoria	Kakamega	Moderately utilized
Adventure	1 Lake Victoria	_	•
Adventure	1 Lake Victoria 2 Kakamega Forest	Siaya	Moderately utilized
Adventure	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi	Siaya Siaya	Moderately utilized Minimally utilized
Adventure	1 Lake Victoria 2 Kakamega Forest	Siaya Siaya Homa Bay	Moderately utilized Minimally utilized Minimally utilized
Adventure	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi	Siaya Siaya Homa Bay Nyamira	Moderately utilized Minimally utilized Minimally utilized Minimally utilized
Adventure	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge	Siaya Siaya Homa Bay Nyamira Homa Bay	Moderately utilized Minimally utilized Minimally utilized Minimally utilized Minimally utilized
Adventure	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu	Moderately utilized Minimally utilized Minimally utilized Minimally utilized Minimally utilized Minimally utilized Minimally utilized
Adventure	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori	Moderately utilized Minimally utilized
Adventure	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu	Moderately utilized Minimally utilized
Adventure	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori	Moderately utilized Minimally utilized
Adventure	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls 11 Webuye Falls	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori Bungoma	Moderately utilized Minimally utilized
Adventure	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori	Moderately utilized Minimally utilized
	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls 11 Webuye Falls 12 Bala Hot Springs	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori Bungoma Homa Bay	Moderately utilized Minimally utilized
Agro and Eco-	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls 11 Webuye Falls	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori Bungoma Homa Bay Busia, Kisumu,	Moderately utilized Minimally utilized
	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls 11 Webuye Falls 12 Bala Hot Springs	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori Bungoma Homa Bay  Busia, Kisumu, Kericho, Migori,	Moderately utilized Minimally utilized
Agro and Eco-	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls 11 Webuye Falls 12 Bala Hot Springs  1 Sugarcane Plantations 2 Rice Fields – Ahero &	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori Bungoma Homa Bay  Busia, Kisumu, Kericho, Migori, Kakamega, and	Moderately utilized Minimally utilized
Agro and Eco-	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls 11 Webuye Falls 12 Bala Hot Springs	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori Bungoma Homa Bay  Busia, Kisumu, Kericho, Migori,	Moderately utilized Minimally utilized
Agro and Eco-	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls 11 Webuye Falls 12 Bala Hot Springs  1 Sugarcane Plantations 2 Rice Fields – Ahero & Dominion Farms	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori Bungoma Homa Bay  Busia, Kisumu, Kericho, Migori, Kakamega, and Bungoma	Moderately utilized Minimally utilized
Agro and Eco-	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls 11 Webuye Falls 12 Bala Hot Springs  1 Sugarcane Plantations 2 Rice Fields – Ahero &	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori Bungoma Homa Bay  Busia, Kisumu, Kericho, Migori, Kakamega, and Bungoma  Kisumu and	Moderately utilized Minimally utilized
Agro and Eco-	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls 11 Webuye Falls 12 Bala Hot Springs  1 Sugarcane Plantations 2 Rice Fields – Ahero & Dominion Farms 3 Tea and Coffee Farms	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori Bungoma Homa Bay  Busia, Kisumu, Kericho, Migori, Kakamega, and Bungoma	Moderately utilized Minimally utilized
Agro and Eco-	1 Lake Victoria 2 Kakamega Forest 3 Got Ramogi 4 Yala Swamp 5 Lake Simbi 6 Manga Ridge 7 Homa Hills 8 Plantations 9 Odino Falls 10 Gogo Falls 11 Webuye Falls 12 Bala Hot Springs  1 Sugarcane Plantations 2 Rice Fields – Ahero & Dominion Farms	Siaya Siaya Homa Bay Nyamira Homa Bay Busia, Kisumu and Migori Kisumu Migori Bungoma Homa Bay  Busia, Kisumu, Kericho, Migori, Kakamega, and Bungoma  Kisumu and	Moderately utilized Minimally utilized

		Nyamira &	
		Kisii, Kericho	
		Nandi, Bomet	
Water sports and	1 Boat racing sites	Migori, Homa	Minimally utilized
Health &	2 Bala hot springs	Bay, Kisumu,	Minimally utilized
Wellness	3 Lake Victoria	Siaya and Busia	Minimally utilized
		Homa Bay	Minimally utilized
	4 Water rafting on River	Migori, Homa	
	Nzoia	Bay, Siaya and	
		Busia	
		Bungoma and	
		Busia	

# 3.2.3: Opportunities and Prospective Projects for Tourism in the Lake Region

The Lake Region has clear potential for becoming an attractive tourism site in the country but there is a clear need to take measures to develop the industry. Existing tourist attractions are underdeveloped and underutilized and this need to be addressed urgently. This section proposes key projects unlock the region's potential in a manner that bolsters the socio-economic development of the region.

At the macro-level the following tourism related projects are planned:

# Flagship project: Development of a Lake Region Tourism Circuit

- Development of high-end hotel and Conference facilities in each of the 14 Counties;
- Development of Community-Based Tourism activities and attractions at selected sites in each of the 14 Counties;
- Development of a 3-Star 100-Bed capacity tourist lodge at Thimlich Ohinga Cultural Landscape;
- Marketing Initiatives to enhance visibility of the Lake Region Tourism Circuit;
- Development of Wildlife Conservancies to promote tourism and solve wildlife-human conflict;
- Establishment of standards for tourism products and services in the Lake Region Tourist Circuit; and
- Development of road network within Kisumu City for city tours targeting unique heritage facilities and sceneries around and within the city.

There are already indications of interest in developing specific projects in the region as follows:

• Kakamega National Reserve: The creation of a 60-Bed forest eco-lodge and a 40-Bed Luxury Tented Camp;

- Ruma National Park: The creation of a 60-Bed Eco-Lodge;
- Ndere Island National Park: A 60-Bed Eco-Lodge or a 40-Bed Luxury Tented Camp;
- Kisumu Impala Park: 24-Bed Luxury Tented Camp;
- Lake Victoria: High end hotels and conference facilities;
- Kakamega Town: A 100-Bed high class hotel in Kakamega town;
- Rusinga Community Lodge on Rusinga Island;
- Yala Swamp Nature Interpretation Centre at Lake Sare in Usigu;
- Siaya, Mwibale Rock Eco-Lodge and Cultural Centre; and
- Kakamega Forest Visitor Centre at the entrance to Kakamega Forest.
- Kericho has a bed capacity of 74.

Table 11: Summary of Investment Opportunities in the Tourism Sector in the Lake Region

County	Current Tourism Features and Attractions	Opportunities
	Mt. Elgon Forest Reserve, Mt Elgon National	• Intensify eco- tourism and sports tourism.
Bungoma	Park	Promote cultural day celebrations.
	Scenic hills such as Chetambe, Sang'alo and	Construction of an Eco-lodge and
	Kabuchai	Conference facility in Bungoma.
	Man-made attractions such as dams as well as the	Reclamation of Chetambe, Sanga'lo,
	cultural centre at Sang'alo, dini ya msambwa	Kabuchai, Mt. Elgon and Nabuyole falls
	headquarters at Maeni in Kimilili and Mfunje-	for tourism
	ropes Bridge in Webuye	
	Conference, eco-tourism and cultural heritage	
	tourism-especially the circumcision ceremonies,	
	songs and dances practiced in the County	
	Hotels found in Bungoma include; Elegant	
	Hotel, Sarasa Resort, Greenvalle Hotel, Ross	
	Wood, Happy Moments, West gate, Bustani,	
	Cool Base and Tourist hotel in Bungoma Town,	
	Guest House, Webuye Motel, Golf Hotel,	
	Minata and Park Villa in Webuye, Elgon View in	
	Misikhu, Mount Crest, Lencante and Barasa Park	
	hotels in Kimilili Town	
	Home to Ruma National Park which is the only	Development of Regional Sports
Homa Bay	park where the Roan antelope can be found Tom	Stadium.

Kisii	Mboya Mausoleum, the Mfangano Rock Art, Homa Hills, Hot Spring and Simbi Nyaima  There are over 18 islands, peninsulas and bays some with unique fauna and flora  Homa Bay County has only three classified hotels: Homa Bay Tourist Hotel, Rusinga Resorts and the Governors Camp (Msaria) Mfangano with bed capacity of about 120  Geological sites such as Nyangweta Forest, Ritumbe Forest and Ibencho offer good tourist sites  Kisii County does not have tourist class hotels/restaurants	<ul> <li>Initiate an annual Community Cultural Festival in the county.</li> <li>Construction of Cultural Centers in all constituencies.</li> <li>Set up tourist hotels to attract tourists from Masai Mara in the Narok County and Ruma Park in Homa Bay County.</li> <li>Protect and gazette Nyangweta Forest, Ritumbe Forest and Ibencho.</li> <li>Reclaim recreational areas that were earmarked in the 1971 Kisii Town Master Plan. This includes the riparian reserve from Daraja Moja to Makutano Junction.</li> <li>Registration of cultural groups in the county i.e. herbalists, choirs, dancers, drummers, artists and Documentation of various aspects of culture.</li> <li>Establish a County Cultural Centre. (Kisii Township)</li> <li>Construction of Museum in the county</li> </ul>
Kisumu	<ul> <li>Tourist attractions in Kisumu include the Ndere Island National Park and the Kisumu Impala Sanctuary</li> <li>The National Museum, Historic sites such as Songhor Paleontological Site situated in Muhoroni, the viewpoints in Nyabondo, the legendary Luanda Magere site, Kit Mikayi.</li> <li>Recreational sailing and sport fishing on Lake Victoria</li> <li>Hotels of a competitive standard in the county are mainly found in Kisumu City.</li> </ul>	<ul> <li>Construct a 10,000-seat convention centre on the beach front</li> <li>Resort city</li> <li>Establish hospitality facilities.</li> <li>Beautify the county</li> <li>Preserve eco-sites</li> </ul>

	These includes; Kisumu Hotel, Sunset Hotel,	
	Imperial hotel, Jumuia Guest House, Great	
	Lakes Hotel and Lasavana Hotel.	
Siaya	<ul> <li>The County has only one gazetted game reserve; Lake Kanyaboli Game Reserve</li> <li>Alego Nyang'oma Kogelo Village, a place of international attention because it is the birth place of Barack Obama Senior.</li> <li>Cultural sites in the County include; Olua Sacred Trees, Holy Got Adodi, Bullock of God Podhe, Rambugu hills,</li> <li>Got Ramogi, Jaramogi Oginga Odinga Mausoleum, Achieng' Oneko Mausoleum, Mageta Island, Odera Akang'o office and cells in Yala and several island lakes along River Yala (Sare, Nyamboyo)</li> <li>The County currently does not have any classified hotel.</li> </ul>	<ul> <li>Construction and equipping of cultural centres.</li> <li>Undertake and develop a business and conference tourism initiative.</li> <li>Fence Lake Kanyaboli conservation area.</li> <li>Develop sports tourism (boat, racing, water skiing, swimming competitions and a floating restaurant,)</li> </ul>
Vihiga	<ul> <li>The sites in the county include forests, Mungoma cave, bird's sanctuary and Wagevere rocks.</li> <li>Rich cultural Maragoli festivals observed annually.</li> <li>There is only one tourist class hotel, Sosa cottages with a bed capacity of 56.</li> </ul>	<ul> <li>Establish Tourists sites at Maragoli hills, Bunyore hills and Kaimosi forest</li> <li>Tap into the rich cultural heritage as a tourist target.</li> <li>Establish Tourists sites at Maragoli hills, Bunyore hills and Kaimosi forest</li> <li>Upgrading of cultural sites-Mulutia shrine, Maragoli, Mungoma, Tiriki</li> <li>Construction of cultural/recreational centers in Sabatia, Vihiga, Hamisi, Emuhaya and Luanda, Maseno disabled, mwibona, Wemilabi, Luanda South, Emabungo.</li> </ul>
Busia	The county has tourist attraction sites such as Kakapel Rock Art Museum, captivating Kakapel	Establish a 3-star and above hotel and resorts within the County

	<ul> <li>caves, rock paintings found at the Kakapel National Monument in</li> <li>Teso North, rocky hills of Kisoko, Lake Victoria Viewpoints,</li> <li>Beaches such as Marenga and Busijo in Funyula Sub-county.</li> <li>The main types of wild life found in the County include hippopotamuses, wild pigs and velvet monkeys.</li> </ul>	Construction & equipping of Community Cultural centers countywide
Migori	<ul> <li>The county has no game parks and game reserves</li> <li>Cultural and historical sites include Thim Lich Ohinga museum, Godkweru religious site and the Mugabo caves</li> <li>Wildlife in the county include hippopotamus and variety of birds</li> <li>Existing hotels have not been classified.</li> </ul>	<ul> <li>Map and protect all the potential tourist sites.</li> <li>Establish a cultural centre with modern theatre and cinema facilities</li> <li>Documentation of the various Intangible cultural heritages (ICH) and artifacts within the county.</li> <li>Upgrade Migori Stadium to National stadia status.</li> <li>Establish museums Art Gallery</li> <li>Protection of cultural and historical sites.</li> </ul>
Nyamira	<ul> <li>There are no national parks or game reserves within Nyamira County</li> <li>There are potential tourist sites like the hilly nature referred as "Gusii highlands", the Orotuba Manga ridge, Kiabonyoru, Nyabisimba, Nkoora and Kemasare hills</li> <li>The county has no main wildlife but there exists several other fauna and flora species</li> <li>Nyamira County has no tourist hotels and camping sites for any high-class services but there are 24 unclassified hotels with a bed capacity of 575.</li> </ul>	<ul> <li>Cultural education, information and research centre</li> <li>Visual arts through preservation of indigenous knowledge.</li> <li>Organize cultural festivals – county wide and registration of cultural groups.</li> <li>Establish cultural centre – Keroka, Nyamaiya, Nyamira</li> <li>Refurbish traditional caves at Manga Sub county</li> <li>Establish a botanical garden at the county Headquarters.</li> </ul>
Kakamega	Kakamega County has one national park, no game reserve and two camping sites.	Gazette some of these attractions such as the crying stone.

	Natural attractions such as Kakamega Forest	Build cultural centres to promote cultural
	Cultural attractions such as bull fighting in Khayega	tourism
	and Ikolomani, cock fighting in Shinyalu, the dog	Enhance the capacity of the County as a centre
	market in	for conference tourism.
	Lubao, Malava, the crying stone in Ilesi, Lukova in	
	Matete and Mawe Tatu in Likuyani.	
	The main wildlife in the county are monkeys, birds,	
	snakes, baboons, hares, hippos, monitor lizards and	
	coloured butterflies.	
	The County has a three-star hotel- Kakamega Golf	
	Hotel with a bed capacity of 102, and 24 established	
	bars and restaurants. It also has 540 unclassified	
	hotels.	
	Kericho has six main places where tourists can visit.	Increase in the number of tourist facilities to 4
Kericho	They include Sacred Heart Cathedral which is	and events in the county.
	considered in Kenya to be the second largest	Establishment and Construction of Chebulu
	Cathedral, Chagaik Arboretum, Fort Ternan Site, Mau	Conservancy
	Forest Complex, Dimbolil Dam and Van Wicker's	Establishment of Tulwap Kipsigis
	Caves.	Establishment of Fort Ternan Museum
	Agro-tourism - lush green country of the tea fields	Bagao and Reresik caves in Ainamoi
	County has tourist class hotels with bed capacity of	
	more than 74.	
	Bomet has 6 attractions & places to visit in the county	Unveils tea tourism product
Bomet	as a tourist. The places include Tenwek Cave,	Encourage Chepalungu ecotourism centre
	Chebonei Caves, Mutarakwa Forest and Kipsegon	Working together with communities and other
	Hot Springs.	partners introduce friendly wildlife like zebras
		and impalas
		Tourism activities had not previously been
		prioritized by the government.
		Chepalungu forest is a good habitat for wildlife
		and a good place where ecotourism activities
		can be established.
	Trans Nzoia has four major places where tourists can	To mobilize the community to preserve
Trans Nzoia	visit such as Mt. Elgon National Park, Saiwa Swamp	culture, promote sports and tourism
	National Park.	development, support social welfare and child

	Kitale Nature Conservancy in Kitale Municipality	protection and identify and nurture youth	
	along Kitale-Lodwar Road.	talents in Trans Nzoia County	
	The Kitale Museum.		
	Nandi has several sites which include Mau Mau caves,	To develop new sites	
Nandi	destroyed meeting sites of slave traders, Nandi Rock,	Developing new products	
	Chepkiit Falls, Kiplolok Springs, Chepsangor Hills,	Encourage each resident from all walks to visit	
	Kimwani blocks	and enjoy.	
	The tropical south Nandi forest.	Work with other agencies to promote tourism	
	Sports tourism - Nandi is also renowned giant	activities	
	athletics	Conduct annual community tourism	
	Bird watching in Nandi	Diversification in sport - Nike Camps i.e. Rosa	
	Agro tourism – Tea plantations	Camp where most Marathoners	
	The Nandi Escarpment, Chepkiit Water Falls, Keben		
	Springs, Bonjoge National Reserve, Kingwal Swamp,		
	Ndalat Hill Keben Salt Lick		

The discussion will now turn to a more detailed exploration of some of the opportunities that can be exploited in the Lake Region: Creating Access to Regional and International Destinations through Kisumu International Airport Access to and from the Lake Region is crucial and forms the foundation on which tourism can occur. Kisumu International Airport is currently only international in name as no international flights land or take off from the airport. The airport also lacks basic services such as fuelling facilities and thus cannot serve international airlines. One project proposed is to establish facilities at Kisumu airport that allow for international flights to land and take off at Kisumu so that the airport can be the hub that connects to other parts of the Lake Region. The project seeks to expand the runway, air side plane parking and loading area, create fuelling systems, storage facilities, lounge facilities, health facilities as well as airport police and fire departments.

## Development of Boating/Water sports and Cruise Tourism in Lake Victoria

The objective of this project is to enhance the use of Lake Victoria as a premier cruise, boating and water sports attraction. The choice location for these activities will be informed by the development of partnerships with the five counties that border the lake, namely; Migori, Homa Bay, Siaya, Kisumu and Busia. Once routes have been determined, suitable beaches will be identified and jetties constructed to support sporting and leisure activities. Relevant organizations and stakeholders will be engaged to moderate the use of the lake for the stipulated tourism related activities.

Development of an International PGA level Golf course and Holiday Homes on Nyakagera and Imra island. There is robust tourism activity that accompanies high end sporting events such as golf. Nyakagera (150 acres) and Imra islands (90 acres) provide a unique opportunity to develop Kenya's first golf course on an island. The proposed plan will include high end holiday homes and villas.

# 3.2.4 Key Challenges in the Tourism Sector

# Lack of capital

The Western Tourism Circuit has not been marketed as a tourist attraction in Kenya and therefore has not attracted financing and is not considered an investment destination in the sector. Now that Tourism is a devolved function, the Counties must liaise very closely with the National Government to address the issue the Western Tourist Circuit as a new tourist destination with vast potentials that appeared to have been neglected.

## Poor government support

The Lake Region is not viewed as a tourist destination that warrants government support and investment and thus does not feature in activities and allocations related to tourism. The traditional Tourist destination to the National Parks and the Sandy beaches needs serious review to provide new opportunities to the growth of tourism into new potential locations e.g. the Western Tourist Circuit which has remained neglected for far too long.

#### Poor infrastructure

The infrastructure within the Lake Region as well as to and from most tourist attractions is dilapidated and needs rehabilitation. For example, Thimlich Ohinga Cultural Landscape does not have an adequate all-weather road network.

# **Security Issues**

These stem both from political instability and tribal tensions as well as threats from the militant group Al-Shabaab. However, Lake Victoria is now comparatively safe following the introduction of Coast Guard Services into Lake Victoria, and as occasioned re-emergence of robust Maritime Cargo movements, and very soon, passenger movements as well, all anchored on the revival and refurbishment of the once vibrant Port of Kisumu.

## Natural disasters

The region is often subject to flooding at various tourist sites which creates reluctance to visit the region. Climate change will continue to impact negatively in this regard. This is a challenge LREB will have to live with

## Disease and Illness

Tropical diseases such as malaria which is endemic in the region are deterrents. Further, health scares in neighbouring regions such as Ebola in West Africa reduce the appeal of travel to the country. It is noteworthy that quite a few International tourists' dread Malaria.

#### Poor facilities

The region lacks high-end social services such as hospitals and most of the tourist sites are in the remote areas of the country far from access to medical facilities. In terms of accommodation, the region lacks internationally competitive facilities. For example, Ndere Island National Park does not have the capacity to cater for overnight stay. Likewise, Kit Mikayi does not even have amenities to adequately cater for day visitors.

## Poor communications infrastructure

The area has limited communications and technology services which reduce the appeal of the region as business activities cannot be hosted there. Further, visitors often want to but cannot maintain touch with family and friends as most no longer have the mentality of 'leaving it all behind'; this lack is a deterrent.

## Environmental damage

Environmental threats exist in national parks and game reserves particularly poaching. Further, Kenyans often engage in activity in and around tourist attractions that fails to sustain the wildlife of the region. In addition, the increasing population in the region has led to human encroachment into wildlife habitats such as forests, grasslands, and mash lands. This has led to human-wildlife conflicts resulting in the migration of some animal species to other areas.

Given these challenges, it is important to for each county to pursue strategies aimed at revamping the sector. County Governments should be committed to pursuing the following:

- 1. Establishing an attractive tourist circuit that makes the Lake Region a destination of choice;
- 2. Developing and improving products, mini-circuits and source markets within a sustainability framework and ensuring maintenance of standards;
- 3. Refurbishing hotels and other accommodation facilities while actively involving members of the community in developments;
- 4. Promoting domestic tourism by providing incentives and establishing an information dissemination system to alert domestic tourist of attractions, promotions and deals; and
- 5. Providing skilled labour to establish excellent service delivery dependent on informed policies, clear tourism development plans, supportive legislation and regulatory framework.
- 6. Providing luxurious maritime transport system within LREB counties and other ports around Lake Victoria.

A plan to develop a golf course and holiday homes on Nyakagera and Imra Islands, neighbouring Ndere Island National Park is currently underway. The on-going works to complete refurbishment of the Kisumu Golf club to an 18-hole International status would greatly boost the tourism in this region.

# 3.2.5: Resource Mobilization Strategy

Tourism products require development, packaging and marketing before any meaningful returns can be realized. Thus, there is a need for clear strategies for resource mobilization to meet the required threshold for the development of successful tourism packages in the Lake Region. The strategy can consist of different components as follows:

**Create a Fundraising Team:** Develop a fundraising initiative tasked with capital raising responsibilities specifically for the Lake Region.

Improve Investment Environment: Incentivize investment into the sector.

Short term funding: Focus on national and county government allocations for quick fixes that can get key projects up and running as well as fund marketing activity.

Long term funding: Develop partnerships with NGOs, international donor organizations and private sector resource mobilisation purposes.

# 3.2.6: Socioeconomic Impact of the Tourism Sector

The following are the potential impacts of investment in the tourism sector:

- A 20 percent increase in tourism demand results in an increase in real GDP of 0.1 percent (Njoya);
- A 10 percent increase in tourist expenditure can lead to a 0.3 percent increase in rural household consumption and in a 0.02 percent increase in welfare (Njoya);
- 10 percent increase in tourism results in an increase in the domestic consumption of agricultural commodities; tourism growth in Kenya is pro-agriculture (Njoya);
- Economic activity created by tourism expansion increases real wage rates by 0.8 percent.
   (Njoya);
- Inbound tourism increases the output of agricultural products, decreases its prices and increases employment. (Njoya);
- Tourism can serve as a powerful incentive to protect natural resources (UNEP, 2011);
- Tourism generates revenue to support conservation and management of natural environments (UNEP, 2011); and

food and beverages, shopping, entertainment and transport to income of hotel staff operators, shopkeepers and suppliers of goods and services (UNEP, 2011).					
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## 4.0: SOCIAL SECTORS: EDUCATION AND HEALTH

#### 4.1: Education

Kenya Vision 2030 articulates the ambition to create an education system that is responsive to the critical role of Science, Mathematics, Technology and Communication in the development of the human resources of the country. In August 2010, Kenya promulgated a new constitution which enshrined Free and Compulsory Basic Education as a basic human right to every Kenyan child. As part of the decentralization of Pre-primary Education, Adult and Continuing Education (ACE) and Youth Polytechnics became components of the education system to be devolved to the county level. Inadequate training for mid-level technicians and artisans in Kenya contributes to youth employment in the country. According to Economic Survey 2021, there is an estimated gap of 30,000 engineers, 90,000 technicians and 400,000 artisans in Kenya; a shortage that hampers the

Engineers Registration Board estimates the ratio of engineers, technicians and artisans required by the country to achieve middle-income status is at 1:12:60. However, Kenya's ratio was estimated at only 1:3:13 (2012).

country's economic growth



Figure 11: Teaching in Session

According to the Economic Survey 2021:

- Total number of education institutions in Kenya is 90,145 as at March 2020; which was a marginal increase from 89,337 reported in 2019.
- The overall number of Technical and Vocational Education and Training (TVET) institutions increased by 7.5 per cent from 2,140 in 2019 to 2,301 in 2020.
- The number of public universities remained 31 in 2020
- the total number of private chartered universities and universities with Letter of Interim Authority increased to 33 in 2020.
- Enrolment in Pre-primary 1 and 2 increased by 3.7 per cent to 2.8 million in 2020 from 2.7 million in 2019.

- Total enrolment in primary schools stood at 10.2 million, which is an increase from 10.1 million reported in 2019.
- Total enrolment in secondary schools recorded a growth of 8.0 per cent to 3,520.4 thousand in 2020 of which 1,768.9 thousand were girls.
- The number of teachers in public primary schools stood at 218,077 in 2020
- Teachers in public secondary schools increased by 1.8 percent.
- The overall number of Technical and Vocational Education and Training (TVET) institutions increased by 7.5 per cent from 2,140 in 2019 to 2,301 in 2020.
- The Lake Region population with primary education stands at 68 percent average across the 14 counties and 12 percent for secondary education.

# Impact of Covid-19 on the education sector

Prior to the outbreak of the Covid-19 pandemic in February 2020, Kenya had a well-structured education system. The Early Childhood Education Development (ECDC), primary and secondary school calendar that ran from January to December. The terms included three months of full study and one month of breaks in between. The curricula were structured in such a way that they could be covered in a maximum of nine months. During the one-month break, both teachers and students took the opportunity to rest and refresh before moving on to another exciting three months. This however, was dismantled by the Covid-19 pandemic.

The emergence of Covid-19 the education sector into disarray. The closure of institutions affected learners and teachers. Additionally, it also sired quite a few challenges on economic and social issues including interrupted and loss of learning, financial constraints on households, homelessness, poor childcare and sexual exploitation especially to the underprivileged in the urban centres.

However, whereas in public schools learning stopped in private schools, they resumed learning through online. The international system of education in Kenya was not at all affected. Though they stopped the physical classes, they worked remotely and digitally. It was not a challenge on their side because they had embraced technological education way back. As for some of the Private schools in the urban centres, they trained their teachers on ICT skills so that they could engage the learners. This helped a bit though not wholly. During this time, some private schools closed completely since they could not afford the rental premises. Consequently, many teachers and staff lost their jobs. It was a confused and desperate situation<sup>22</sup>.

<sup>&</sup>lt;sup>22</sup> Institue of Economic Analysis (IEA)

Consequently, the Government of Kenya provided remote teaching support using the internet and television and encouraged academic institutions to adapt teaching material to create a more accessible online learning environment. This plan targeted both vulnerable students and teachers and aimed to capitalize on



Photo: 4: Graduating Class in Homabay County

existing radio infrastructure to enhance the possibility of community-based learning.

Firstly, the learning gap increased since most of the learners were excluded from online education due to a lack of accessibility to the internet and reliable electricity. Additionally, most parents were not able to foot the school-related expenses such as learning materials and daily bundles. This further widened the gap in that they were disadvantaged as compared to their counterparts who could afford it. Even in the areas where electricity and technology do exist, the cost of the internet is inhibitive.

# 4.1.1: The State of Education in the Lake Region

The Lake Region houses some educational institutions of past repute in the country. These include secondary schools such as Cardinal Otunga, Homa Bay, Mbita, Musingu, Kakamega, Lugulu, Butere, St Mary Yala, and training institutions such as Kitale Technical Training Institute and Bukura Agricultural Training Institute. These institutions once produced national and global leaders but have since failed to produce high calibre graduates. The education sector is undergoing fundamental changes and challenges. Accurate and reliable data could have been collected without outreach activity. This is the more reason for not updating the data below.

The table below summarizes the state of education in some of the counties in the Lake Region. *Table 12: Education Levels at the Counties* 

County	None	Primary	Secondary To	otal Population
Kisumu	17.7	56.9	25.4	844,752
Kakamega	20.6	60.9	18.5	1,449,141
Bungoma	17.9	60.9	21.2	1,195,784
Busia	22.7	61.8	15.5	647,461
Kisii	17.1	55.2	27.7	1,010,601
Nyamira	16.1	53.6	30.3	528,317
Siaya	20.5	63.8	15.7	736,992
Migori	20.3	64.6	15.2	786,472

Homa Bay	19.8	62.9	17.3	836,555
Vihiga	17.6	62.8	19.6	491,499
Kericho	24.2	46.4	20.7	834,061
Nandi	20.3	47.5	22.7	822,163
Trans Nzoia	19.0	48.4	21.2	911,209
Bomet	20.9	49.4	19.8	810,122

Source: Population Census 2019

In the data recorded in Exploring Kenya's Inequality compiled by Kenya National Bureau of Statistics and the Society for International Development (SID), Migori County is leading in the population with primary education at 64.6 percent followed by Siaya County at 63.8 percent and Homa Bay County at 62.9 percent. The bottom three counties in terms of primary education are Nyamira County with 53.6 percent, Kisii County with 55.2 percent and Kisumu County at 56.9 percent. In terms of the percentage of the population with secondary level education, Nyamira leads with 30.3 percent followed by Kisii at 27.7 percent and Kisumu at 25.4 percent; the lowest county is Migori with 15.2 percent.

Kisumu has the highest numbers of literate males at 94 percent followed by Kisii at 92 percent; Homa Bay, Nyamira and Siaya tie at 91 percent. Migori has the lowest number of literate males at 77 percent followed by Busia and Kakamega at 85 percent and 87 percent respectively. Migori County has the highest number of literate females at 92 percent followed by Kisumu and Nyamira with 84 percent and 83 percent respectively. The lowest female literacy rates are in Busia, Siaya and Homa Bay with 66 percent, 69 percent and 74 percent respectively. These statistics indicate the continued need to emphasize the importance of girl child education in the counties lagging.

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Table 13: Number of students in Different Categories in LREB Counties

	Pre-primary	Primary	Secondary	Tertiary	University
Bungoma	84,738	425,597	64,214	6,243	2,997
Busia	50,100	221,071	30,107	2,270	1,226
Homa Bay	89,450	281,471	50,495	4,658	2,195
Kakamega	105,312	468,437	72,834	7,240	5,594
Kisii	84,873	349,499	93,486	8,371	4,065
Kisumu	81,361	246,582	51,871	9,724	6,909
Migori	80,132	272,953	41,267	4,229	2,075
Nyamira	32,638	130,756	36,231	3,027	1,268
Siaya	57,592	232,691	35,780	2,759	1,847
Vihiga	31,821	161,190	28,763	2,831	1,199
Kericho	70,704	410,824	196,189	53,574	27,677
Nandi	49,297	409,504	152,581	42,676	17,229
Trans Nzoia	78,093	258,680	86,362	8,872	7,769
Bomet	64,231	234,857	79,100	12,007	9,333

(Source: Population Census, 2019, KNBS)

These statistics indicate varying transition rates from primary to secondary school between the counties and this is where the largest drop-out rates happen. Evidence indicates significant benefits exist when levels of secondary education are widespread in the population and can be the tipping point towards tapping into the transformational role of education in improving health, employment and wealth. Most of the interventions detailed in this Blueprint will not come to fruition with the existing levels of secondary education in the population.

In terms of populations with tertiary education, Kisumu leads with 9,724 followed by Kisii with 8,371 and Kakamega with 7,240. The counties that lag begin in terms of tertiary education are Busia (2,270), Siaya (2,759), Nyamira (3,027) and Vihiga (2,831). The education provision in Kisumu County, especially at tertiary level, seems well developed with 3 universities, 5 university colleges, 1 medical training college, 1 national polytechnic and several commercial private colleges. Kakamega County has

one fully fledged university- Masinde Muliro University and several universities campuses branches. Vihiga County has mobilized its resources to set up Kaimosi University of Science and Technology which opened in September 2014. Twin workshops in the county are under construction at Karandini and Kitulu Polytechnics and the county government will be collaborating with NINGBO Polytechnic in China. Siaya County has 1 technical institute, 1 medical college and 1 Constituent University (Bondo University College, a constituent of Maseno University) and a University campus (Odera Kang'o Campus of Moi University).

# 4.1.2: Key Education Challenges in the Lake Region Poor funding

The sector is subject to chronic underfunding that does not adequately support the physical and human resources required to ensure the quality of education delivered is high.

# Increased transition and completion rates

The transition rate into secondary and tertiary education has increased since the government enforced 100% transition policy from primary to secondary and opening of TVET. However, there has been sharp increase in teenage pregnancies since the outbreak of Covid-19 epidemic which led to closure of institutions for almost a year.

# Poor and declining education standards

Even for those who complete their education, they are not skilled and often unable to create or gain meaningful employment and improve their standards of living. This seems to be linked to poor teacher supervision and low expectations by teachers. This may be due to low levels of motivation on the part of teacher, high workloads and teacher absenteeism. In effect the low quality of education translates to gross amounts of multi-investment that fail to boost and improve the human capital of the region.

# Poor facilities and learning resources

The physical educational infrastructure is abysmal with many learning in dilapidated buildings with no electricity, adequate seating or learning materials. Further, the lack of learning resources such as text books, library books, wall maps and the exercise books impede performance as well as the learning and teaching environment.

#### Poor infrastructure

There is a poor network of road and transport infrastructure which can make it difficult for pupils and teachers to get to the schools.

#### 4.1.3: Opportunities for Investment in Education

The opportunities for investment in the education sector in the region include:

Flagship Project: Developing Centres of Excellence that link industry and research

- Public Private Partnerships (PPPs) in Early Childhood Education
- PPPs for the development and maintenance of educational infrastructure

Development of regional centres of excellence would require that some institutions such as Kisumu Polytechnic can be targeted as a hub for specific skills training relevant to key industries in the region.

- Development of regional centres of Technical training in key economic areas; doing so will avoid duplication at county levels
- Development of Research and Technology parks that create and incubate ideas for implementation and support by the County governments.
- A university that serves the region.

Table 14: Education Situation in LREB Counties

County	Current Education Situation	Opportunities
Bungoma	<ul> <li>80.5 percent of the population in the County aged 15 and above are literate</li> <li>The County has 651 public and 200 private primary schools. With eligible primary school age population of 376,032 (187,645 boys and 188,387 girls)</li> <li>The County has 229 public and 12 private secondary schools</li> </ul>	<ul> <li>Construction and rehabilitation of at least one boarding school per constituency</li> <li>Establish Secondary school centres of excellence</li> <li>Support and invest in Early Childhood Development and Education (ECDE).</li> <li>Invest in Adult and Continuing Education (ACE)</li> <li>Support and construction of youth polytechnics in each sub- county.</li> <li>Construction and provision of equipment of libraries, computer and science laboratories</li> <li>Establishment of a Bursary Fund</li> <li>Subsidized secondary education</li> </ul>
Homa Bay	<ul> <li>Homa Bay County has over 1,183 ECD centres. The teacher pupil ratio at this level stands at 1:40</li> <li>There are over 905 primary schools in the county catering for the educational needs of the over</li> <li>29,431 children with over 5,385 teachers</li> <li>The literacy rate in Homa Bay County stands at 64 per cent with males account for 66 percent and females at 54 percent</li> <li>There are over 180 secondary schools in the county catering for the secondary education needs of the 63,400</li> <li>Homa Bay has two public technical training</li> </ul>	<ul> <li>Improve School Infrastructure</li> <li>Increasing Subsidies to Youth Polytechnics</li> <li>Expansion of Centres of Excellence</li> <li>Construction of Model Workshops in Youth Polytechnics</li> <li>and upgrading of Youth Polytechnics</li> <li>Up-scaling of Constituency-Based Bursary Schemes</li> <li>Establish Early Childhood Development centres</li> <li>Develop School Inspection Improvement Programme.</li> </ul>

	institutions: Mawego and Wanyama and one public Teacher Training College at Asumbi
Kisii	<ul> <li>There are 904 Early Childhood Development centres in the County with 1,184 teachers</li> <li>There are 467 primary schools in the County with 6,278 teachers</li> <li>The literacy level among adults in the County is 71.5 percent against the national level at 79.2 percent</li> <li>There are 334 secondary schools both private and public in the County staffed with 3,940</li> <li>There is only one full-fledged university in the county and seven satellite campuses</li> <li>Construction of ECD centres in all public primary schools and recruit teachers</li> <li>Establish a feeding programme for ECD</li> <li>Construction of ECD centres in all public primary schools and upgrading public primary schools to boarding schools</li> <li>Establishment of a Bursary Fund in all subcounties</li> <li>Establish adult education centres in all public primary schools and recruit teachers</li> <li>Establish a feeding programme for ECD</li> <li>Construction of ECD centres in all public primary schools and recruit teachers</li> <li>Establish a feeding programme for ECD</li> <li>Establish a feeding programme</li></ul>
Kisumu	<ul> <li>The introduction of feeding programmes in needy institutions</li> <li>Issuance of sanitary towels among the adolescent school going girls</li> <li>Recruitment of additional teachers</li> <li>Establishment of centres of excellence.</li> <li>Rehabilitation of existing schools.</li> <li>Establishing ICT labs in identified institutions in all the sub-counties.</li> <li>Give incentives to potential investors in the private education sector</li> <li>Total enrolment in primary schools in the county is 236,334 with a teacher population of 6,081.</li> <li>Of the population above 15 years of age 90.8 percent can read while 83.4percent can write.</li> <li>Total enrolment in primary schools in the county is 113,314 with a teacher population of 1,647.</li> <li>The county has two universities Maseno and Great Lakes University.</li> </ul>
Siaya	<ul> <li>There are 636 primary schools, 179 secondary schools, six tertiary institutions, 12 special education schools, one public university and 13 special units in regular primary schools.</li> <li>Literacy rate stands at 80 percent.</li> <li>School enrolment is 57,592 pupils at preprimary level, 232,691 pupils at primary school level, 33,780 students at secondary school level, 2,759 at tertiary level, 1,847 in the university and 104 in the youth polytechnics.</li> <li>There are currently 636 primary schools and 2,759 tertiary institutions.</li> <li>Recruitment of more teachers in Primary and secondary and more instructors in Polytechnics.</li> <li>Establish ECD feeding program</li> <li>Subsidized youth polytechnic tuition (SYPT) scheme.</li> </ul>
Vihiga	<ul> <li>The County had 754 pre-primary schools.</li> <li>Establish a university in the county</li> <li>Improve and equip youth Polytechnics.</li> </ul>

	<ul> <li>Majority of the population 82.1 percent aged 15</li> <li>years and above can read or write while 15.2</li> <li>percent of the same category is unable to neither read nor write.</li> <li>The County had 114 secondary schools by 2012 and no fully fledged University.</li> </ul>	<ul> <li>Establish more special schools</li> <li>Establish more science laboratories and libraries</li> <li>Establish centres of excellence in all the constituencies</li> <li>Develop a school feeding programme for ECD.</li> <li>Develop a Bursary Fund</li> <li>Install electricity to all schools</li> <li>Establish Education Management Information System (EMIS)</li> </ul>
Busia	The county has 459 Early Childhood Development Centres, 450 Primary schools and 105 Secondary schools, 17 Youth Polytechnics and 3 University constituent colleges	Install electricity to all schools
Migori	<ul> <li>The County has more than 816 primary school, 217 secondary schools, 1 University College, 2 public university campuses, 1 public and 1 private teacher training college and 13 youth polytechnics</li> <li>The county has 1,149 ECD centres and 1,785 teachers</li> </ul>	<ul> <li>Construction of ECDE classroom in all wards, equipping</li> <li>them and recruit more teachers</li> <li>Establishment of a Bursary Fund</li> <li>Support for special needs teachers and provision of counsellors</li> <li>Construction of school libraries, laboratories and</li> <li>classrooms in primary and secondary level</li> <li>Provision of sanitary towels</li> <li>Upgrade Rongo University college to a University</li> </ul>
Nyamira	• The county has 553 ECD centres, 545 primary schools, 173 secondary schools, 2 public university campuses, 2 science and technology colleges, 15 youth polytechnics and 8 accredited private colleges.	<ul> <li>Construction of libraries, laboratories, classrooms, toilets, dining halls, administration blocks and dormitories in schools around the county.</li> <li>Install electricity and water supply to schools.</li> <li>Construction of workshops in youth polytechnics.</li> <li>Establish adult learning centre</li> <li>Establish special schools in Borabu and Manga.</li> </ul>

Kakamega	<ul> <li>Literacy rate of 83.1 percent</li> <li>The County has 1943 ECD centres, 2,463 primary schools with 24,362 teachers, 807 secondary schools with 7,444 teachers</li> <li>One public university, Masinde Muliro University of Science and Technology</li> <li>Satellite campuses of other universities such as Mt Kenya University, Jomo Kenyatta University of Science and Technology and the University of Nairobi</li> </ul>	The county has who can read and write.     Construction of computer labs in each school in the county.
Trans Nzoia	• High enrolment rate of 85 per cent, transition rate of 78.6% and completion 81.55% rate in primary schools and similar trends are recorded in secondary schools. However, the level of absorption to intermediate and tertiary schools is low due to inadequate training facilities. This calls for intensive investments in areas listed	<ul> <li>There are investment opportunities in primary and secondary schools</li> <li>Colleges and vocational institutions for training and skills development</li> <li>Modern science, technology and innovation laboratories</li> <li>Universities with capacity to conduct Research and Development</li> </ul>
Kericho	<ul> <li>Number of Institutions (2020)</li> <li>Primary (461), Secondary (106)</li> <li>Primary Enrolment (163,133)</li> <li>Tertiary over 15 (comprised of University Satellite Campus, Youth Polytechnics, Teacher Training Colleges, Medical Training College, Technical Colleges, And Several Commercial Colleges)</li> <li>Adult Literacy Classes Enrolment (data Not Available)</li> </ul>	<ul> <li>The county has many people who can read and write.</li> <li>Invest the construction of secondary schools to increase the uptake of students from primary schools,</li> <li>Install electricity and water supply to schools.</li> <li>Construction of workshops in youth polytechnics.</li> </ul>
• Nandi	<ul> <li>Primary Education 97.3 %</li> <li>Secondary Education 68 %</li> <li>Tertiary Education, University or Youth Polytechnic 30 %</li> </ul>	Construction of libraries, laboratories, classrooms, toilets, dining halls, administration
• Bomet	Has 70 per cent literacy rate	•

# 4.1.4: Education Interventions

This Blueprint looks to elucidate synergies that exist between the 14 counties to pool resources and efforts towards ending subpar performance in education. It seeks to answer questions such as: How can graduates of higher learning be attracted back to the counties? To what extent are training curricula aligned to the economic needs and opportunities in the region and, what are the supply and demand bottlenecks in the education sector in the region?

As mentioned, the county can directly intervene in the following segments of education: Pre-primary Education, Adult and Continuing Education (ACE) and Youth Polytechnics. But coordinated and

concerted efforts can also be directed at improving transition from primary to secondary school and raising the quality and relevance of these segments of education. The national target of a literacy rate of 80percent and enrolment rate of 95 percent set out in Vision 2030 should also be a regional target. Vision 2030 also seeks to increase the transition to technical institutions and universities from 3 to 8 percent.

Opportunities that align with Vision 2030 in which the Lake Region can participate are as follows:

- A national target to build 560 new secondary school
- Employ 28,000 teachers nationally
- Build one boarding primary school in each constituency
- Creation of Centres of Excellence

The following section looks at aligning educational goals with the productive sectors of agriculture and tourism as well as suggesting other sectors for consideration.

# Agriculture

Agriculture is the back-bone of the Lake Basin Region county governments should focus on investing in Agricultural Training Institutes geared towards training students in modern agricultural knowledge and the use of modern technology and equipment. Both the youth and farming population should be targeted. Emphasis should be placed on how to manage climate change. There should also be a focus on partnering with mechanical and electrical training institutes in order to ensure the repair and maintenance of agricultural equipment and machinery. In addition, specialist training in value chain management, value addition as well as the sales and marketing of agricultural produce can be included.

#### **Tourism**

The development of hospitality, tours and travel, catering and leisure management training institutes is crucial for the region if it is to become a tourist destination of note.

#### **Sports**

Kenya excels in sports such as athletics, rugby and soccer and a significant number of famous professionals of these sports in Kenya are from the Lake Region. Soccer players such as Dennis Oliech, Macdonald Mariga, Victor Mugubi Wanyama, Allan Wanga and Arnold Origi come from the region. In rugby, notables such as Humphrey Kayange, Collins Injera, Andrew Amonde, Lavin Asego are from the region as well. The county governments of the region can therefore consider establishing sports talent academies to identify and nurture talented youth who can then be introduced on the national, East African and global sports industry.

# 4.1.5: Socioeconomic Impact of Interventions in Education

#### Spotlight on setting up a university for the Lake Region

Establishing a new university or upgrading a polytechnic into a fully-fledged university is a multi-year process. The information below was obtained from an expert in the matter, Rev. Dr Anthony Mutuiri. The costs related to university establishment are as follows:

Administration: The applications to government agencies such as the Commission for University Education which costs approximately USD 60,000.

Infrastructure: Required in the first year and often includes administration buildings and lecture halls; can amount to USD 6 Million.

Curriculum: Courses and programmes to be taught must be developed, designed and specified by experts in academia. Programme architecture determines the number and types of degrees to be conferred and for which the institution needs to apply and pay. Once designed, programmes are reviewed by peers and the industry, and an inspection conducted by the Commission for University Education completed. These costs are several million USD.

Staffing: Hire anchor staff who establish the systems and processes of the institution. For example, they support the first students to settle in, find their way around the institution, and familiarise them with rules, code of conduct and course outlines.

Vice Chancellor: Ideally a person of repute in academic and scholarly circles. Vice Chancellors normally come with their own teams of professionals such as registrars all of whom must be remunerated in monthly salaries plus benefits. The Vice Chancellors' remuneration and allowances often add up to USD 24,000 per month. S/He is responsible for representing the institution at local and international events, all of which are catered for by the institution.

This process takes five years or more and costs approximately USD 15 million.

The impacts of a better education system are as follows:

- Early childhood education is associated with substantial effects for both cognitive and socioemotional outcomes. (Melhuish, 2014)
- Studies have associated attending a pre-school with increased qualifications, employment, and earnings up to age 33 (Melhuish, 2014)
- State-collected data in some countries reveal that pre-school helps children succeed in school and obtain higher wages in the labour market (Melhuish, 2014)
- Pre-school reduces socio-economic inequalities, as children from less advantaged backgrounds benefitted more than the more advantaged (Melhuish, 2014)
- Pre-school expansion is associated with improved inter-generational educational mobility (Melhuish, 2014)
- Formal schooling is one of several important contributors to the skills of an individual and to human capital (UNESCO, 2005)
- More schooling means higher lifetime incomes (UNESCO, 2005)

- A more educated society may translate into higher rates of innovation, higher overall
  productivity through firms' ability to introduce new and better production methods, and faster
  introduction of new technology (UNESCO, 2005)
- There is a strong impact of differences in school quality on economic growth: a difference of
  one standard deviation on test performance is related to a 1 percent difference in annual
  growth rates of GDP per capita.
- The quality of the labour force, a measured by mathematics and science scores, appears to be an important determinant of growth, and thus of the potential to alleviate poverty (UNESCO, 2005)
- Those with more years of schooling tend to have better health and well-being and healthier behaviours (Feinstein, 2005)
- Education is an important mechanism for enhancing the health and well-being of individuals because it reduces the need for health care, the associated costs of dependence, lost earnings and human suffering (Feinstein, 2005)
- Education helps promote and sustain healthy lifestyles and positive choices, supporting and nurturing human development, human relationships and personal, family and community well-being (Feinstein, 2005)
- Those with more education are also more likely to take advantage of health care provision (Feinstein, 2005)
- Education reduces the likelihood that individuals will work in the most hazardous jobs
- There is evidence of a causal relationship between education and civic participation (Feinstein, 2005)

#### 4.2: Health

The health sector plays a pivotal role in economic growth and poverty reduction is demonstrated in the fact that three of the eight Millennium Development Goals (MDGs) pertain to health. A healthy nation means a more productive nation. The health sector in Kenya operates within and is influenced by several policies and frameworks; Kenya Vision 2030 Sector Plan for Health, Kenya Health Policy 2012 – 2030 and global initiatives such as the Global Fund and the Millennium Development Goals (MDGs).

Kenya has made improvements in some of the health-related MDGs as per the latest reports: the infant mortality rate is 39 deaths per 1,000 live births, and under-5 mortality is 52 deaths per 1,000

live births<sup>23</sup>. However, maternal mortality in health facilities slight declined from 130 per 100,000 deliveries in 2012/13 to 118 in 2013/14, 103 in 2014/15 and 106 in 2015/16. This was close to the target of 100 per 100,000 deliveries. compared to the MDG target of 210 per 100,000 births in 2013, this suggested that the health facilities were able to keep up with the increased cases at different facilities.



Photo: 5: Hospital Facility in Kericho County

In 2021 in the Lake Basin Region counties

Kisumu had 252, Trans Nzoia 200, Bomet 170, Busia, 92, Siaya 156, Homa Bay 252, Kisii 153, Kakamega 189, Kericho 214, Vihiga 75, Migori 329, Bungoma 226 while Nyamira had 50 maternal mortality ratios per delivery<sup>24</sup>. These were presumably attributed to late referrals, poor access to functional health facilities in rural areas, high malaria prevalence, HIV/AIDs, and high cost of maternal health care.

#### Impact of Covid on the Health Sector

Covid-19 impacted positively as well as negatively in Kenya. A study by LREB in the 14 counties at the peak of Covid-19 pandemic in 2020, reveals that most counties lacked the preparedness to respond effectively to the surge of the pandemic, the counties had challenges in data reporting, lacked oxygen production, had challenges in processing patients for admission and the burden of pandemic strained resources at the facility level. The study also reveals that although the LREB has 2,450 hospitals, the ICU and HDU were only 135 across the 14 counties. However, apart from Kisii, Siaya and Kisumu, the remaining 11 counties had oxygen plants with broken down plants or overwhelmed compressors. Although some biomedical experts have suggested installations of reservoirs to keep oxygen flow when the plants are operating minimally, best practice recommends have both oxygen plants and liquid oxygen tanks for continuous high flow<sup>25</sup>. Other challenges include

1. **Testing Capacity:** All LREB counties have inadequate testing capacity. They need RDT kits to support quick decision making to isolate, treat, and manage Covid-19. At the sometime, they need more PCR testing to track prevalence of different variants.

<sup>&</sup>lt;sup>23</sup> National Bureau of Statistics-Kenya and ICF International. (2015). Kenya 2014 Demographic and Health Survey Key Findings. 6, 24. https://doi.org/10.5261/2013.GEN1.04

<sup>&</sup>lt;sup>24</sup> LREB Counties Covid-19 Preparedness Assessment Report: LREB Committee of Eminent Persons

<sup>&</sup>lt;sup>25</sup> LREB Counties Covid-19 preparedness assessment report

- 2. Adopt a School Initiative: The AASI has achieved a lot in keeping schools safe for learners and teachers. However, more support is needed to further reach to most vulnerable schools so that infections do not spread among learners, teachers, and parents. Schools need masks, running water, and more classroom spaces.
- 3. Border Surveillance: Busia, Malaba, and Sirare borders need increased surveillance through rapid testing to eliminate cross-border infections and reduce traffic backlog of tracks. Having track drivers waiting for days on end to get teste and results increases the spread of Covid-19 in these counties.
- 4. **Staffing:** All health facilities in the region are understaffed. There are fewer nurses and doctors involved in critical care who work for longer hours each day at various isolation centers in the region. These champions need adequate staffing, motivation, prompt salary payment. In additionally, they need psychosocial support.
- 5. **Weak Coordination:** The region experiences weak coordination and data sharing among counties, nationally, and among health and education implementing partners. This phenomenon curtails accelerated response and recovery.
- 6. Integrated Online Data System: Presently, the region is implementing an integrated online data system to support a well-coordinated approach to Covid-19 response and recovery. It is one area that equally needs support to overcome weaknesses identified above.

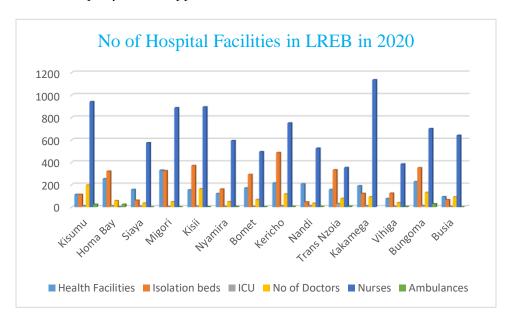


Table 15: Health Indicators in LREB Counties

Indicator	Bungoma	Busia	Homa Bay	Kakamega	Kisii	Kisumu	Migori	Nyamira	Siaya	Vihiga	Trans Nzoia	Bomet	Kericho	Nandi
TB cases in every 100,000 people (2015)	96	255	453	135	143	306	248	137	223	155	138	173	199	96
HIV Prevalence (percent, 2015)	5	7.7	20.7	4.5	4.4	16.3	13.3	4.2	21.0	5.4	4.3	5.8	2.9	2.0
Population per Nurse (2018/2022)	3,333	2,500	2,658	4,762	2,383	3,125	1,428	1,997	1,947.	1,210	2,829	2,326	2,120	
Population per doctor (2018/2022)	28,571	29,000	33,333	34,916	33,333	44,634	60,000	11,906	17,236	11,840	6,150	29,707	14,286	30,500
Health Facilities														
Total number of facilities	197	78	260	202	173	210	209	145	213	93	168	169	196	174
Hospitals		7	13	23	25	34	21		20	8	8	4	14	7
Health Centre	19	12	50	28	28	45	28	39	49	18	73	19	186	19
Dispensary	89	49	119	97	91	94	95	42	119	32	87	107	-	121
Medical clinic/ Stand- alone VCT	79	10	23	107	23	29	56	18	18	34	-	39	-	27
Maternity/ Nursing home	5	4	5	8	6	8	9	7	7	3	-	-	196	174
Health Financing														
Health budget allocations (approx.) (2017/2018)	29%	24%	30%	25.9%	34.68%	15.45%	12.3%	6%	20%	19.4%	29.6	14	46.2	24.1
National Health Insurance Fund (NHIF) coverage (2015)	16.8	31.0	27.0	30.2	44.4	32.0	19.3	35.6	28	24.2	19.7	21.1	28.9	25.0

# 4.2.1: The State of the Health Sector in the Lake Region

Health indicators in the Lake Region are a cause for concern and pose serious challenges to the region's development. Health challenges include high rates of infant and child mortality – ranging between 12 and 15 per cent in some counties; HIV/AIDS prevalence 2017 indicates that Siaya, Homa-Bay, Kisumu and Migori counties have the highest HIV prevalence rate in the region; high rate of HIV infections which contribute 54 percent of new HIV infections in the country and high under five mortality rates. However, the emergence of Covid-19 in Kenya has made a profound impact on healthcare systems (public and private hospitals and isolation centres). The increased healthcare system focus to Covid-19 response, has potential implication of jeopardizing access to health services such as maternal and antenatal care, nutrition services and routine check-ups. The Covid-19 pandemic has led to relaxation of immunization process over the fear of contracting the virus. It is observable that between the months of March to August 2020 fewer children under the age of two years were utilizing vaccinations services against highly transmissible ailments such as polio and measles. This could result in devastating outcomes for children in the coming months and in the long term<sup>26</sup>.

With regards to malaria, particularly around the Lake Victoria, is classified as an endemic zone with a malaria prevalence rate of 38 percent. In 2017 Kenya had 7,978 new HIV infections among children aged 0-14 years which was about 15% of all total new HIV infections. The new HIV infections prevalence among children in the Lake Region indicate that Homa Bay (700) 9%, Siaya (620) 8%, Kisumu (616) 8%, Kakamega (437) 5%, Migori (432) 5% and Busia (318) 4%<sup>27</sup>. In Bungoma, malaria alone accounts for 40 percent of morbidity. Additional diseases such as upper respiratory tract infections and diarrhoea account for 26 percent of the morbidity in the region; pneumonia and skin diseases account for about 20 percent of morbidity.

Health personnel challenges are also dire in the Region: Homa-Bay County has a doctor-population ratio of 1: 40,000 and nurse-population ratio of 1:1500; in Kakamega the doctor-population ratio is 1: 34,916 and a nurse-population ratio of 1: 2,658; in Kisumu the doctor-population ratio is 1: 44,634 and the nurse-population ratio is 1: 2,383.

Further, health facilities are inadequate and those that are available have poor infrastructure that are in urgent need of maintenance and upgrades. The limited capacity of these health facilities poses a greater challenge than the distribution of facilities.

<sup>&</sup>lt;sup>26</sup> Country Covid-19 Social Economic Re-Engineering Recovery Strategy 2020/2023

<sup>&</sup>lt;sup>27</sup> National AIDS and STI Control Programme. (2016). Kenya HIV Estimates 2015. 1–28.

Table 16: Health Statistics in the Lake Basin Region

Indicator	Bungoma <sup>28</sup>	Busia	Homa Bay <sup>29</sup>	Kakamega 30	Kisii	Kisumu <sup>31</sup>	Migori	Nyamira	Siaya	Vihiga	Trans Nzoia	Bomet	Kericho	Nandi
TB cases in every 100,000 people (2015) <sup>32</sup>	96	255	453	135	143	306	248	137	223	155	138	173	199	96
HIV Prevalence (percent, 2015) <sup>33</sup>	5	7.7	20.7	4.5	4.4	16.3	13.3	4.2	21.0	5.4	4.3	5.8	2.9	2.0
Population per Nurse (2018/2022) <sup>34</sup>	3,333	2,000	2,500	2,658	4,762	2,383	3,125	1,428	1,997	1,947.	1,210	2,829	2,326	2,120
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Health Facilities <sup>35</sup>														
Total number of facilities	197	78	260	202	173	210	209	145	213	93	168	169	196	174
Hospitals	10	7	13	23	25	34	21		20	8	8	4	14	7
Health Centre	19	12	50	28	28	45	28	39	49	18	73	19	186	19
Dispensary	89	49	119	97	91	94	95	42	119	32	87	107	-	121
Medical clinic/Stand-alone VCT	79	10	23	107	23	29	56	18	18	34	-	39	-	27
Maternity/ Nursing home	5	4	5	8	6	8	9	7	7	3	_	_	196	174

Health Financing

 $<sup>^{\</sup>rm 28}$  Secretary, T. C. (2018). County Government of Bungoma.

<sup>&</sup>lt;sup>29</sup> Homabay County Government Second County Integrated Development Plan 2018- 2022 (draft). (2022). 2022.

<sup>&</sup>lt;sup>30</sup> Government, C., & Kakamega, O. F. (2020). REPUBLIC OF KENYA.

<sup>&</sup>lt;sup>31</sup> County Government of Kisumu. (2018). Kisumu County Integrated Development Plan II, 2018-2022. 232.

<sup>&</sup>lt;sup>32</sup> Counties Government Health briefly. (2015). 2014, 2015.

<sup>&</sup>lt;sup>33</sup> National AIDS and STI Control Programme. (2016). Kenya HIV Estimates 2015. 1–28.

<sup>&</sup>lt;sup>34</sup> County Government second counties Integrated Development Plans 2018- 2022.

<sup>&</sup>lt;sup>35</sup> MOH, Kenya Service Availability and Readiness Assessment Mapping Report, 2013

# 4.2.1: Key Health Challenges Facing the Lake Region

#### Infrastructure

The number of physical health facilities available is limited. In the country, Bungoma has the lowest facility density of less than 1 facility per 8,333 persons; only Migori, Homa Bay and Kericho counties in the Lake Region have more than 2.0 a facilities density per 10,000 persons but fall short of the national target of 2.19 facility density per 10,000 persons<sup>36</sup>.

#### Medicine

There is a chronic lack of adequate levels of essential drugs particularly for mothers and children. The SARAM 2013 Report found that primary healthcare facilities (nationwide) have critically low availability of health commodities.

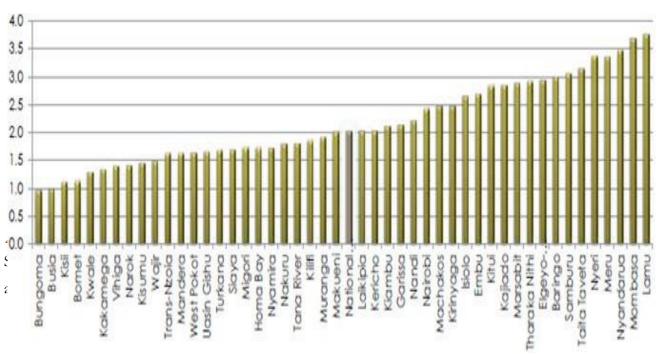
# High disease burden

HIV/AIDS prevalence is a challenge– Homa- Bay, Kisumu, Siaya and Migori counties have the highest HIV prevalence rate in the region. The counties contributed about 43% of the estimated total new infections in 2017<sup>37</sup>. Malaria prevalence in the is 4 times higher than national levels in 4 counties bordering Lake Victoria while TB cases were more concentrated in urban populations<sup>38</sup>.

# High mortality rates

High rates of infant and child mortality in the area range from 12 to 15per cent. 1 in 9 children born alive in the Lake Region area are at risk of dying before reaching the age of 5 years (see Error! Reference source not found.). Error! Reference source not found. summarizes the health sector situation in the Lake Basin region and opportunities for improving the health sector





<sup>&</sup>lt;sup>36</sup> Ministry of Health in collaboration with World Health Organization. (2018).

<sup>&</sup>lt;sup>37</sup> National AIDS and STI Control Programme. (2016). Kenya HIV Estimates 2015. 1–28.

<sup>&</sup>lt;sup>38</sup> Ministry of Health in collaboration with World Health Organization. (2018).

Flagship Project: Specialist Hospital in each county: Build, operate and transfer 10 specialist hospitals each serving a specific clinical area.

Establish a regional National Health Trust: This can be contracted by the regional governments to lead in cutting edge management and expansion of existing health facilities and services, including seeking ways of attracting and retaining health personnel in the region. There are examples from countries such as India and Tunisia that can be referred to in terms of how to develop and manage an effective and affordable health care system.

Partnership with Insurance organisations: Done in order ensure that every individual in the county has health insurance and access to health provision. The health insurance organisations will work across the region to enable the affordability at point of access/ use, but to also work towards providing incentives for providers of health services in the region. This might include setting up major health Centres at central points in the county, and leading in air ambulance provision for remote regions of the county.

Community Health: Set up community health dispensaries that are more cost-effective in terms of diagnosis and preventive measures. These community dispensaries will need to be equipped to develop health messages that can lead to prevention, as well as be an easy to reach source of health personnel in cases of emergence and everyday health care.

#### Infrastructure

- County governments to develop primary care infrastructure terminating at what are currently health centres. Former sub-district hospitals can act as filter and referral centres for specialized clinics.
- A complete emergency care system based on the University of Baltimore's emergency care service to be developed for the entire region with both land, sea and air capabilities.
- A robust communication system based on the regions ICT platform to be implemented

#### **Personnel**

- Staff performance management system to be centred within the specialist hospitals.
- Oversight to be provided by these hospitals which will also develop standard care packages that will be used by all
- Staff training to be centred around specialist hospitals. These are to provide continuous professional development to all staff in the region.

# Logistic systems

Automated procurement systems for medical supplies based on a shared ICT infrastructure.

 Reduction in number of players in the supply chain (get KEMSA to be efficient or outsource the services to a KEMSA look alike)

#### Strategic information

Medicine is evidence based thus a single system to manage all patient records, supplies and administration is required. This system should have clinician decision support capability as well as organizational oversight capacities.

#### Health Governance

- Move away from current top-heavy management structures.
- Lean leadership relying on ICT to provide data for decision support.
- Clinical leadership to be ceded to the Specialize hospitals
- Main function of county medical leadership would be supervision to monitor adherence to policies, standards, emergency response to outbreaks, financial management, logistics management
- Move away from specific disease focus to disease groups.

#### Clinical systems

These should be benchmarked to the best in the world as follows:

- Emergency services with Japan, state of Maryland, Israel
- Preventive care against japan
- Primary care against France
- Specialist services against India
- All aspects of clinical services to be accredited
- Community strategy should be linked to targeted services for citizenry

Table 17: Health Status in the Lake Region and Opportunities for Improvement<sup>39</sup>

County	Current Health Status and Activities	Opportunities
Bungoma	The County has 197 health facilities of which 10 are hospitals, 5 nursing Homes, 19 health centers, 89 dispensaries, 79 clinics and 134 community units. The top 5 diseases in the County include: Malaria, Anaemia, Pneumonia, diarrhoea and Peptic Ulcers (40 Immunization rates of 73 percent	The County should establish and equip a multifaceted referral hospital to handle complex medical cases.  Model level 4 Health Centre per constituency  20 Nurses per constituency recruited

<sup>-67-|</sup>Page

	· Ambulance services	
Homa Bay	<ul> <li>Homa Bay County has 260 health facilities including 185 public health facilities, 45 private and 30 faithbased facilities. These facilities are manned by 2,117 personnel mostly nurses with a doctor- population ratio still at 1: 40,000 and nurse-population ratio at 1: 1,500.</li> <li>The County has a bed capacity upwards of 2,190 in public facilities and 12 in mission facilities</li> <li>Malaria is the most common disease in the county</li> <li>Rehabilitation of R.</li> <li>Fast-tracking imple Strategy</li> <li>Construction and I.</li> <li>Construction of I.</li> <li>Construction of I.</li> <li>Construction of I.</li> <li>Pathologists and Strategy</li> </ul>	ural Health Facilities ementation of Community Health Equipping of Model Health facilities Vards. Minor Theatres, Maternity Wings inerators modern Mortuaries complete with taff Quarters. the HIV/ AIDS Management and entre
Kisii	<ul> <li>mission hospitals.</li> <li>The five most common diseases in the County in order of prevalence are malaria, diarrhoea, urinary tract infections, skin diseases, pneumonia and respiratory diseases.</li> <li>outpatient, inpati Incinerators, X-ray, bay, wards and Mo</li> <li>Electricity installation</li> <li>Recruitment of me</li> </ul>	maternity wards construction, ent, lab block, staff houses, Surgical theatre, Laboratories, waiting ortuary.  on dical staff Level 5 to a Teaching and Referral
Kisumu	public health centres, 94 dispensaries, 29 clinics and 8 nursing home / maternity homes. The facilities include public, faith based, NGOs and Private health facilities.  Malaria is the most leading cause of morbidity. Others include upper respiratory tract infection, diarrhoea, diseases of the skin and other diseases of the	rural health facilities rement of Childhood Illness county rees and promote intersectoral rehealth infrastructure (Buildings, atory equipment etc) county wide. reale and female wards at Ahero Sub-

Siaya	<ul> <li>The County has one referral hospital, 9 Sub County hospitals spread across the six sub counties. There are 34 health centers and 102 dispensaries. Diseases affecting the county are; malaria/fever (52 percent), respiratory diseases (23 percent), diarrhoea (8 percent), pneumonia (5.25 percent) and diseases of the skin including wounds (4 percent)</li> <li>24.7 per cent of the children in the county below 5 years are stunted against the national figure of 26 percent.</li> <li>Immunization coverage rate of 80 percent which is still below the national target of 95 percent.</li> <li>Contraceptives prevalence rate increase from 23 percent to 55 percent in 2017.</li> </ul>	<ul> <li>and comprehensive healthcare</li> <li>Construction/ rehabilitation of facilities at Bar Ndege, Jera, Ligega, Sega, Bar Achuth, Sifuyo, Nyang'u, Ukwala, and Ratuoro</li> </ul>
Vihiga	<ul> <li>1 public county referral facility, 3 sub-Sub-county level 4 facilities, 18 health centres, 32 dispensaries and 34 private and mission-based facilities. Most prevalent causes of morbidity and mortality are Malaria prevalence rate is 27%, diarrhoea 5.4%, respiratory diseases (upper and lower), and skin diseases 19.3%</li> <li>21 percent of the total population of children under the age of five are either underweight stunted or are wasted</li> <li>Immunization coverage rate of 80.2 percent.</li> <li>Contraceptive prevalence at 56.6 per cent</li> </ul>	<ul> <li>Establishment of a mental health unit in Mbale.</li> <li>Renovate &amp; expansion of Vihiga district Hospital in Mbale.</li> <li>Construction of dispensaries in Sabatia, Wamuluma and Maragoli.</li> <li>Expansion of dispensaries and hospitals in constituencies and increase staff capacity.</li> <li>Promote immunization programmes in the county to achieve 100per cent immunization.</li> <li>Equip hospitals with medical equipment (x-ray machines, aesthetic machines, suction machines etc)</li> </ul>
Busia	<ul> <li>The county has 1 referral hospital6 sub-county hospitals, 49 dispensaries, 10 medical clinics 1 private hospital, 12 health centres and 3 nursing homes. Malaria and Road, Traffic and Accidents (RTAs) are among the top causes of morbidity Immunization coverage rate of 69 percent</li> <li>46.5 per cent of the females aged 18 years have access to family planning services</li> </ul>	<ul> <li>Establish and equip a multi-faceted referral Hospital to handle complex medical cases.</li> <li>Upgrade Busia District Hospital to a teaching and referral Hospital</li> <li>Upgrade level 3 facilities to level 4 in Nambale, Funyula and Butula</li> <li>Purchase of ambulances</li> <li>School WASH programme through construction of latrines with running water in 5 schools</li> </ul>
Migori	<ul> <li>The county currently has no Referral Hospital, 21 Sub-county Hospitals, 28 health centres, 95</li> <li>dispensaries, 8 faith-based health facilities, 10 private run hospitals, 9 Nursing homes, and 56 private clinics. The county has Malaria at 53 percent prevalence, respiratory tract infections at 16 percent, diseases of the skin, diarrhoea at 7 percent, intestinal worms/typhoid at 3.2 percent, accidents/fractures and sexually transmitted infections</li> <li>17 percent of children under age five are moderately underweight, 3 percent are classified as severely</li> </ul>	<ul> <li>Scale up community health coverage</li> <li>Fast track construction/expansion of KMTC at Migori County Hospital</li> <li>Upgrade Migori district hospital to level five</li> <li>Open closed facilities</li> <li>Strengthen Health leadership at sub-county and facility with committees and hospital boards in all facilities</li> </ul>
	underweight	- <b>69</b> -   Page

	7	
	<ul> <li>Immunization coverage rate of 84.6 percent</li> <li>57 percent of the population do not use any family planning method, 36.1 percent use modern methods,</li> <li>6 percent use traditional methods</li> </ul>	
Nyamira	<ul> <li>There are 145 health facilities in the county; eight tier 3 public health facilities, 70 tier 2 (Health Centres and Dispensaries) and the rest either private or faith-based facilities or clinics. The top 5 morbidity cases in Nyamira are: Disease of Respiratory system, Malaria, diarrhoea arthritis and Pneumonia</li> <li>About 25.5per cent of children under five are stunted</li> <li>Immunization rate 80 percent</li> <li>The contraceptive prevalence rates are 65 percent.</li> </ul>	Rehabilitate existing health facilities     Construction of maternity wards, children's wards, OPD, theatre
Kakamega	<ul> <li>Kakamega County does not have a referral hospital but has Kakamega County General hospital, nine subcounty hospitals, 9 mission/NGO hospitals, 1 private hospital, 8 nursing homes and 27 public health centres, 27 public health centres, 66 public dispensaries, 31 private dispensaries and 107 private clinics.</li> <li>The most prevalent diseases in the county include malaria/Fever, diarrhoea, stomach ache, respiratory diseases and flu; malaria is most prevalent at 27 percent</li> <li>The nutrition status in the county is at 8.6 per cent of the under five children being underweight</li> <li>About 62 per cent of the children in the county get immunized.</li> <li>The contraceptive prevalence in the county is 49per cent</li> </ul>	<ul> <li>Staffing and equipping of all the levels in health referral system;</li> <li>Establishment of a medical training centre and start medical school in the county.</li> <li>Decentralization of health services and drugs.</li> <li>Inter sectoral collaboration</li> </ul>
Trans Nzoia	Trans Nzoia County has 8 tier-3 public hospitals. Has tier-2 and tier-1 public health facilities numbering 73 and 87 respectively.  •The county has a total of 43 registered private facilities distributed across the sub counties as follows: Kiminini (20), Cherang'any (6), Endebess (1), Kwanza (4) and Saboti (12). Based on tiers, there are 38 and 5 tier-2 and tier-3 private facilities respectively.	<ul> <li>Construction of new health facilities,</li> <li>Rehabilitation and expansion of existing health facilities</li> <li>Ensure sustainable supply of pharmaceuticals and health commodities</li> <li>There is a need for additional wards, beds and hospital equipment across all the county facilities.</li> </ul>
Kericho	<ul> <li>Currently the number of health facilities stand at 136.         More are yet to be opened over the next five years.         Surgical services are currently available in four hospitals, namely Kericho district hospital, Kapkatet sub-county hospital, Londiani sub-county hospital and Sigowet sub-county hospital with two more to be opened soon at Roret and Fort-Tenan hospitals.         There is a six bed HDU/ICU in Kericho County Referral Hospital and a CT scan at Kapkatet County Hospital. Dialysis is currently being offered at the County Referral Hospital. Imaging services are now available in five hospitals.     </li> </ul>	Improved health Infrastructure through establishment/renovation of health facilities countywide     Installed CCTVs in three facilities i.e. Kericho CRH, Kapkatet and Londiani hospital     Drilled boreholes in Londiani, Sigowet and Roret Hospitals.

Nandi	<ul> <li>The department has 7 consultants (medical specialist), 22 medical officers,4 Dentist, 490 nursing officers, 116 public health officers, 10 pharmacists among many other employees in different units.</li> <li>The county has one referral hospital, five sub county hospitals, 2 home nursing, 19 health centres</li> <li>137 dispensaries, 23 clinics and 4 mission hospitals</li> <li>The bed capacity is 670</li> <li>Malaria, diarrhoea and skin diseases are the main sicknesses</li> </ul>	<ul> <li>Acquisition of Health Management Information System</li> <li>To establish traditional medicine Botanical gardens to promote traditional health and nutrition,</li> <li>To improve drainage system in Nandi hills urban area</li> </ul>
Bomet	<ul> <li>1 County referral hospital</li> <li>Four tier hospital,</li> <li>3 sub-county hospitals,</li> <li>19 health centres,</li> <li>107 dispensaries and</li> <li>39 community units.</li> </ul>	<ul> <li>To increase number of staff</li> <li>Introduce mental health services</li> <li>To strengthen health information systems (Reporting tools and registers)</li> <li>Increase access to clean and safe water for health facility use</li> </ul>

The following are interventions that can be done in each county:

Table 18: Interventions to be implemented in all counties

Project	Description	Impact
Specialist	Specialist hospitals that are fully	Specialist Hospitals in the region providing superior medical
Hospitals	equipped and offer specialized care	attention to patients. Specialist hospitals in the region will lead to
	and treatment for specific diseases	lower incidence and prevalence of diseases in the region
m-Health Services	Provision of medical health services	The availability of technology-based solutions in the healthcare
	supported by mobile devices	will enable researchers to capture multiple sources of health data
		and create a landscape of a health care records management
		system that will increase quality of patient care, track outcomes
		and help in research and education.

# 4.2.3: Socioeconomic impact of the Health Sector

The positive impacts of improved health are as follows (UNAIDS, UNICEF, WHO et al 2011):

- Healthier individuals live longer lives
- Healthier individuals are more productive and contribute to national income, job creation, and economic development and growth.
- Healthier people have fewer and healthier children, invest more time and greater resources in their children's education, and thus secure the future for their societies.
- Healthier people reduce costs of ill health to society and companies and enable resources to be directed to economically productive activities.
- Improving the health of girls and women in particular is likely to have a significant effect on poverty reduction

- Healthier individuals are physically and mentally more energetic and robust which makes them more productive
- One study suggests that one extra year of life expectancy raises steady-state GDP per capita
   by around 4 percent
- One study estimates that reductions in adult mortality explain 10 percent to 15 percent of the economic growth that occurred from 1960 to 1990
- One study argues that wiping out malaria in Sub- Saharan Africa could increase that continent's per capita growth rate by as much as 2.6 percent a year
- Disease and illness cause the household to spend a great deal of resources on medical care
  which depletes its assets, and incurs substantial debt. Preventing such a depletion of assets
  through promoting better health and health care for individuals helps households avoid
  the poverty trap. It will enable them to use these assets for productive investments or
  raising additional capital for enterprises
- Healthier people are more employable, make enterprises more profitable which can then
  generate more taxes. National economies will be more attractive to both domestic and
  foreign investors.
- Healthier destinations (such as those with low levels of malaria incidence) are likely to be more attractive to tourists.
- Healthy individuals have a higher demand for goods and services, driving investment and production within the economy
- Better health increases people's personal earnings directly and reduces costs to companies from high employee turnover, repeated training costs, and provision of health care
- When communities are healthy, budgets can be shifted away from health to productive investment such as physical and social infrastructure
- An increase in both public and private health care expenditure significantly increase life expectancy at birth by about 1 and 0.5 years

#### 5. ENABLING SECTORS: FINANCIAL SERVICES, ICT AND INFRASTRUCTURE

#### 5.1 Financial Services

# 5.1.1 The State of Financial Services in the Lake Region

Kenya has 42 banking institutions (41 banks and one mortgage financing institution) – spread out four categories banks based on their asset base and customers' deposits and 9 representative offices of foreign banks, 14 Microfinance Banks (MFBs), 3 Credit Reference Bureaus (CRBs), 17 Money Remittance Providers (MRPs), 8 non-operating bank holding companies, 1 Mortgage Refinance Company and 66 foreign exchange (forex) bureaus with the Central Bank of Kenya as the regulatory authority. Most of these financial institutions have a presence in Western Kenya.

The banking sector provides access to capital and financial services in a bid to develop sustainable businesses. However, in March 2020 when the first Kenyan was diagnosed with Covid-19 case things changed. Due to the restrictions on movement through lockdowns and curfew to contain

the spread of the disease, the sector remained resilient. In order to remain relevant, the banks adopted the online/mobile platforms to offer banking services and



CBK ensured that the channels remained secure and available. During the period all the economic sectors registered growth in loans except the mining and quarrying sectors where a slight decline was noted.

According to CBK Supervision Report 2020, the financial, the banking sector, remained stable and agile in 2020 despite the Covid-19 pandemic. Despite the adverse impact of Covid-19 pandemic, the sector's gross loans and advances increased by 7.2 percent from KSh.2.7 trillion in December 2019 to KSh.2.9 trillion in December 2020<sup>40</sup>. However, whereas the Lake Region hosts major banks such as Kenya Commercial Bank, Barclays Bank, and Equity Bank, the extent to which the residents of the region have been able to mobilize their savings and acquire capital for their businesses is still very low. Statistics show that the accrued savings are so low that commercial banks are hesitant to extend financial services beyond the productive sectors and the larger

 $^{\rm 40}$  Central Bank Supervision Annual Report 2020

industrial concerns in the region. The distribution of banks nationally has also been skewed disproportionately in favour of the highly urbanized cities of Nairobi and Mombasa.

The above going concerns notwithstanding, there is need for establishing a Commercial Development Fund (bank) in Western Kenya {an equivalent of an LREB Investment Bank} to serve both the Member Counties and the wider citizenry within the Bloc. This shall provide turnkey financial support for local investors with interest of venturing into heavy commercial, manufacturing, real estate and service sector.

# Impact of Covid-19 on Infrastructure

The infrastructure sector in the region was badly affected directly by the measures taken in response to the Covid-19 threat. Here are some of the impact briefly.

The cessation of operations for long-distance PSV operators and reduction of daily operations and vehicle operations has resulted in lower revenues for the operators, necessitating an increase transport fare. Due to the pandemic, commuters have changed their travel habits to comply with the curfew. In all the LREB counties, people have resorted to walking, use of motorcycles. However, Matatu PSVs are the predominant modes of transport.

According to the Economic Survey 2020, about 59.2 percent of people surveyed revealed that their travel expenses had changed due to the pandemic. The results also showed that 14.4 percent changed their main mode of transport, 62.2 percent of them on foot, while 19.4 percent used *Boda Boda*. Counties were also affected by a decrease in PSV and *Boda Boda* Park revenue and license fees. Counties sharing borders with neighbouring EAC countries such as in Busia County, have faced unique challenges in controlling the spread of Covid-19 by cross-border traders and long-distance carriers,

The rail and air travel have also been stopped further affecting accessibility options for travellers. There is need to allow the county residents to improve road conditions to support economic and subsistence activities. The area that needs improvement include those that are predominantly rely on walking and PSVs provides the opportunity for counties re-engineer and retrofit urban streets towards sustainable transport options.<sup>41</sup>

Table 19: Number of Bank Branches in Kenya

Counties	No of branches
Nairobi	597
Mombasa	108
Kisumu	40
Kisii	21

<sup>&</sup>lt;sup>41</sup> County Economic Survey, 2020 and CoG

Kakamega	17
Kericho	17
Bungoma	16
Migori	14
Trans Nzoia	14
Nandi	12
Busia	10
Homa Bay	9
Bomet	9
Siaya	8
Vihiga	6
Nyamira	6

Source: Bank Supervision Annual Report 2020)

More recently, LREB is in the process of establishing a "Women only Sacco" a project that is actively engaging the First Ladies of LREB. This needs further attention as the bulk of women in Kenyan society, LREB notwithstanding, do not have access to financing nor collaterals. Previous process of setting up the once proposed Regional Bank is elaborated below.

Out of a total 1,502 bank branches across the country, 530 branches, which represent 48 percent are based in Nairobi and Mombasa. In comparison, Kisumu, the country in the region with the highest number of bank branches stands at 40 branches which is 3 per cent. Nyamira, Siaya and Vihiga have the lowest number of branches at 4 and 6 respectively. The total number of bank branches in the entire Lake Region is 147 branches or 11percent of the total number of bank branches in the country. Although the bank CEOs argue the spread of banks is informed by cash flow and economic activity in the counties, it's an indication that most devolved units still have low economic activities. CBK says that the decline or creation pf physical bank branches is attributed to the adoption of alternative delivery channels such as mobile phone banking, Internet banking and agency banking.

The heavy concentration of branches in Nairobi County indicates inequality in the country's economic development, which has partly been attributed to the previous centralized system of government which guided sharing of resources since independence (CBK, 2020). In March 2020, the Central Bank of Kenya reduced the Central Bank Rate (CBR) to 7.25 per cent, from 8.25 per cent in February 2020 and 9.00 per cent in December 2019. And in to support the economy, the CBK further lowered the CBR to 7.00 per cent in April 2020 and it remained at this level till the end of the year. During the review period, the CBK in consultation with commercial banks agreed

on emergency measures on extension and restructuring of loans to cushion borrowers from the adverse economic effects of the Covid-19 pandemic (KNBS, 2021).

In comparison, Kisumu, the county in the region with the highest number of bank branches stands at 40 branches 3 percent. Nyamira, Siaya and Vihiga have the lowest number of branches at 4 and 6 respectively. The total number of bank branches in the entire Lake Region is 147 branches or 11 percent of the total number of bank branches in the country. The state of the region's financial services sector is thus characterized by the following:

- Limited access to Capital there is minimal access to capital as indicated by the low number of financial service providers in the region.
- Limited access to Business Advisory Services limited access to appropriate business advisory services.
- Poor structure for capitalizing projects: The primary mode of financing large capitalintensive projects is structured financing. The dearth of financial service providers not only skews the financing in favour of established enterprises but it also restricts financing to mid to large scale businesses only.
- No provisions of financial support to start-up businesses, especially for the Youth and Women

# 5.1.2: Proposed Flagship Project: Creation of a Regional Bank

The key proposed financial services sector flagship project is a Regional Bank that focuses on the economic opportunities in the Lake Region with a focus on supporting the other key sectors of the blueprint, namely:

- Agriculture
- Tourism
- Heath
- Education
- Infrastructure
- ICT Sector

There are three options of establishing a Regional Bank:

- 1. **Option 1:** Establish a new bank: This option is subject to the regulations of establishing a new bank as legislated by the Central Bank of Kenya.
- 2. **Option 2:** Buy a Private Bank: This includes the option of buying an MFI and incrementally graduating it to a bank.

# 3. **Option 3:** Buy a Public Bank

The total costs required for setting up the Regional Bank can be outlined in the following three categories of costs: -

- Statutory minimum capital requirements of KSh1 billion
- Consultancy and Professional Fees to process the incorporation in consultation with the Central Bank of Kenya.
- Set up costs, covered under the statutory capital

Additionally, efforts can be made to establish more micro-finance institutions in the region to meet the needs of individuals in the region who cannot afford getting loans from banking institutions but require modest capital to jump start their business. These micro finance institutions can offer credit to small scale farmers and Jua Kali enterprise workers. The micro-finance institutions can also encourage savings of small amounts thus helping the poor become financially independent. Efforts should also be made to promote table banking. Table banking is a concept that has worked with rural community groups to set up income generation projects in various parts of Kenya. It enables community group members in the region to build their financial base and start small enterprises.

# **5.1.3:** Resource Mobilization Strategy for the proposed regional bank There are several ways through which the county government can own a regional bank as follows:

- **Direct Investment as Beneficiary**: This option allows the counties to aggregate their funds in a pool e.g. KSh200 million per county to meet the capital requirements of the CBK. These would be public funds thus being subject to county citizens' views. However, given the broad benefits of the regional bank, the probability of an affirmative county assembly vote for such funds is relatively high.
- Creation of Fund Trustees: The County can also nominate trustees who will represent the counties' interests on the bank board.
- Creation of an investment vehicle which will act as the shareholder in the Bank: As is
  common with large public-private partnerships, the county governments can establish a
  Special Purpose Vehicle (SPV) to steer the bank's establishment. As in the case of the
  trustees, the county's interests would be safeguarded through SPV agreements.
- Private Placement or Invitation of the Public to participate in owning the rights; the county governments can invite private placements from their citizenry i.e. 100 investors, each with an initial capital of 1million from each of the 10 counties. This would meet the basic capita requirement of CBK for establishing a bank.

- External funding from donors e.g. Bilateral and Multilateral donors.
- External funding from Private Sector e.g. Private Equity Financing.
- Private Placement or Invitation of the Public to participate in owning the rights; the county
  governments can invite private placements from their citizenry i.e. 100 investors, each with
  an initial capital of 1million from each of the 10 counties. This would meet the basic capita
  requirement of CBK for establishing a bank.
- External funding from donors e.g. Bilateral and Multilateral donors.
- External funding from Private Sector e.g. Private Equity Financing.

Consortia of foreign and local private investors with express intent to outsource or mobilize venture capital for Private Equity Investment into a Regional Investment Fund of which will be turned into a commercial Development Bank. Some international private financial organizations had shown interest of mobilizing funding to support the course of establish a platform for mobilize resources which would establish the Development Investment Bank. PPPs approach would make this proposal achievable only subject to a MoU? Between LREB with the team that mobilizes the resources for PPP to help build the Development Investment Fund (Bank). A funding to the tune of USD 260 million would suffice.

# 5.1.4: Socioeconomic Impact of Financial Services

Financial service is part of financial system that provides different types of finance through various credit instruments, financial products and services. The service plays an important role in economies by promoting investment, promoting, savings, minimizing risks, maximizing returns ensures greater yields among others. However, the current financial markets in Kenya do not meet the needs of the lower income earning bracket of the population.

# 5.1.5: Role of development bank in the region

Although the support for national and multilateral development banks have risen worldwide since the global financial crisis in 2008, the need for countries to have their own national development banks is equally vital to achieve more sustainable economic growth in the future. They are critical for countries to achieve the sustainable development goals which requires long term investments (World Economic Forum, 2019).

Development banks help to counteract the pro-cyclical nature of the private financial system, which lends too much in booms and rations credit during crises. The private sector also often fails to provide enough financing for small and innovative companies and infrastructure projects. Nor does it support enough of the investments in innovative activities, credit to small producers, and

environmental projects that are urgently needed to make economies more dynamic, inclusive, and sustainable.

Although governments provide their paid-in capital, development banks raise funds on national and international capital markets. Moreover, these banks' loans are typically co-financed by the private sector, which is especially helpful for governments facing budget constraints during and after economic crises. They are critical especially in the post-2015 era of the Sustainable Development Goals which include poverty eradication, education for all, inclusive economic growth, full employment reduced inequality, climate change mitigation and sustainable use of the world's ecosystems (UNCTAD, 2016).

Economic transformation requires long-term investment to support the expansion of productive capacities, as well as infrastructure development that underpins industrial activities and reduces bottlenecks. Rapid, transformative growth will also require, from the developing world, a more autonomous development strategy, considering the fragile world economic recovery and the uncertainty about developed country demand and capital as drivers of developing country growth (Ocampo J & Griffith-Jones J 2016).

The financing needs to support the Sustainable Development Goals are formidable. Investment in infrastructure development alone, which is a key bottleneck to economic transformation and thus sustainable growth, faces financing needs at the global level that amount to \$5 trillion—\$7 trillion per year (Intergovernmental Committee of Experts on Sustainable Development Financing, 2014). For developing countries alone, figures point to an infrastructure financing shortfall of \$1.0 trillion—\$1.4 trillion per year (Bhattacharya and Romani, 2013).

A Regional Bank set up by local county governments would be the preferred channel through which the Lake Regional Economic Bloc could channel funds by Kenyan Government, donor funds and development agencies in a manner that promotes the quality of life to the citizens of the member counties.

Establishment of a Regional Bank would result in the following positive impacts:

- Increase access to formal banking services among the economically active of those who
  require basic and small scale commercial financial services—for both credit and savings.
- Offer financial services to help among others, low income people through offering financing at favourable interest rates to enlarge and diversify their returns from economic activities.

- Credit access will enable individual to utilize the potential micro industries that are yet untapped in the region on all the sectors of the economy of the region.
- Availability of credit helps prevent borrowers in pursuit of funds from having to sell their produce at below market rates to middlemen thus increasing their incomes.
- Decrease the need for children to work to complement income earned by homesteads as lending would develop enterprise.
- Indirect benefits of promoting the quality of life will be of the citizens accessing the
  products offered by the bank. Increase in income results in improved nutrition, results in
  higher aspirations for their children's welfare and enhances ability to access better quality
  health care.

# 5.2: Information and Communication Technologies

The Information Technology sector has made a remarkable progress across the world in the last decade. The sector has transformed the world, facilitating innovation and productivity, connecting people and communities and improving standards of living and creating opportunities in many sectors and in countries. It has changed the way individuals live, interact and work. Besides the sector has proved to be a key pre-condition for enhanced competitiveness, economic and societal modernization, as well as an important instrument for bridging economic and social divides and reducing poverty.

In Kenya, the ICT has grown rapidly in the last few decades to be one of the most important sectors in the economy and an enabler of economic and social development. However, between 2019 and 2020, the use of ICT was pushed mainly by Covid-19 health containment measures which in turn increased the use of mobile phones to transact businesses as well as send and withdraw money. Use of ICT as a contributor to economy has pushed the sector be among the top 10 contributors to Kenya's Gross Domestic Product (GDP) in 2020. The Economic Survey 2021 report shows that the value of output from the ICT sector to Kenya's GDP increased by 2.5 per cent to Sh538.3 billion in 2020. ICT industry has more than doubled from Sh123 billion to Sh258 billion in 2019. However, the report noted that Kenya's revised GDP figures had undervalued ICT contribution to the economy in previous estimates due to shortcomings in the data measuring process (Economic Survey, 2021 & CAK, 2021)

One of the economic growth areas that has benefitted tremendously from the ICT sector includes mobile banking, particularly the mobile money transfer. According to the government, mobile and internet penetration Kenya increased by 132.2 percent and 64.4 percent, respectively from 1999 to 2020 (KIPPRA, 2020). Although the ICT sector has grown tremendously in the pag. Kenya's 2020

Economic Update published by the World Bank (2021) reveals that the growth of information and communication (ICT) was weakened by 3.2 percent. The ICT sector thus benefited from forced automation (with a switch to home-based working and schooling), the increased demand for internet data and more e-commerce.

Statistics from Communication Authority (2020-2021; FSDKenya 2021 and Economic Survey 2021) illustrates this rapid growth:

- The ICT sector grew at an average of nearly 24 percent per year from 2016-2020 (by contrast, Kenya's largest economic sector agriculture was slightly above the sector by 0.1 percentage point under the same period).
- Mobile penetration increased by 12.35 percentage points to 136.12 subscriptions in 2020 from 123.77 subscriptions in 2019.
- Internet users in Kenya increased by 16 per cent between 2019 and 2020 putting the Internet penetration rate at 43 percent.
- Person-to-person mobile money transactions at the end of 2020 were equivalent to 53 per cent of the country's GDP with two of every three Kenyan using mobile money services.
- Total mobile money transfers grew by 20.0 per cent in 2020, one of the largest increments recorded in the last 5 years to stand at KSh 5.2 trillion.

# 5.2.1: The State of the ICT Sector in the Lake Region

The ICT sector in the Lake Region was previously limited to a few Internet Services Providers and Telcos who give access at a fee. These are mainly Orange, Africa Online, Liquid Telecom, Swift Global, Safaricom and Airtel. With the laying of fibre optic cables, there is an increase in connectivity though most of which is concentrated in the CBD of the counties. Most of the habitants use WiMAX technology, ADSL and FTTX (Fibre to the Home/Office). A majority access internet services via their mobile handsets. There are mobile handsets in the market for approximately KSh2000 that can access internet data. Most areas that do not have 3G, at least have Edge. Bundles for internet access are affordable, though most interviewees complained that the costs should be reduced to allow for wider access by more people. Each of the 14 counties in the LBR has recognized the importance of ICT and has highlighted its role in their Country Integrated Development Plans.

While mobile phones are now wide spread in all the counties, connectivity to internet is still hampered by poor infrastructure, particularly electricity supply. Conversely, upgrades to 4G are rapidly expanding with the ultimate objective of reaching 5G to enable citizens of the block be at -81-|Page

par with the rest of the world. Critical areas where LREB should take lead into include:- (i) Revenue Automation platform for member Counties, (ii) Creating an ICT Center of Excellence where Kibabi University has been chosen to develop one, (iii) Telemedicine Referral Services linking all the 14 Countries level 5 hospitals, proposed to be located at Kisii Health Center of Excellence, and, (iv) the Vihiga/LREB Geospatial Technology System (GTS), that would support the Counties via satellite systems to enhance many aspects of service delivery e.g. mapping, remote sensing, human resource management, planning systems among others.

# 5.2.2: Economic Opportunities in the ICT Sector

Information, Communication and Technology (ICT) growth has continued to expand the economy presenting various opportunities in every sector in Kenya. The digital economy for instance represents a new ecosystem composed of sectors that use Internet and digital platforms to transact business and offer services. It allows businesses, individuals and government to interact seamlessly through government-to-citizen (G2C), business-to1customers (B2C) and business-to-business (B2B) interactions through the online connections.

#### Agriculture

E-agriculture, or the use of ICT in agriculture, as it is known, provides a wide range of answers to some of the agricultural challenges that are preventing countries from producing enough food. In Kenya, the use of ICT in agriculture has a lot of potential, but not all of it has been realised. A few NGOs, private organisations, and corporate groups in the country have taken use of the initiatives to some extent. Much remains to be used, particularly in counties that were formed to develop regions by utilizing local resources. Counties, as the backbone of the Lake Economic Region Bloc's economic activities, can use ICT to improve their productivity.

Subsistence farming dominates agricultural activity in the region. Farmers' access to markets, on the other hand, is constrained. As a result, most farmers are unable to obtain market prices or access, which limits their sales to nearby villages and markets, limiting their agricultural activities to a small scale. Some agricultural services, such as online services for information, education, and training, monitoring and consultation, diagnosis and monitoring, and transaction and processing, would be harnessed if an ICT platform were introduced; e-commerce for direct linkages between local producers, traders, retailers, and suppliers would be established; and the technology would in turn be harnessed if an ICT platform were introduced.

Others include the creation of databases with information on local villages' and villagers' resources, site-specific information systems, expert systems, early warning systems for disease/pest problems, information on rural development programmes and crop insurantes; post-g e

harvest technology, land record facilitation and online registration services, holding teleeducation conferences for farmers, and establishing websites for agricultural research. There is need to incorporate ICT in regard monitoring of pest, climate change and monitoring of wildlife inversion into farmlands.

#### Tourism

The growth in ICT has had a huge impact on the way tourism is carried out. It helps tourists by looking at the physiological, safety, love, esteem and self-actualization – first to places where they want to visit as contended in the Maslow's theory. This therefore links the use of ICT and the tourist's behaviour. ICT acts as a potential source of competitive advantage to tourism and hospitality businesses regardless of their sizes. Consumers today have shifted to the use of the Internet and other technology related services to access the required travel information on their own and at a convenient time. Tourists can visit different Web sites that interest whether commercial or non – commercial to research, plan and if necessary, purchase tourist products and services. Lake Economic Region Bloc has not been able realised this partly because it has not been marketed well and partly due to the lack of access that promotes tourism in the region. However, with the proper implementation of ICT platforms, tourist experiences can be promoted locally, regionally and internationally and can be linked to tour and travel groups. It is high time the infamous "Western Tourism Circuit" is fully developed as cogwheel in the tourism industry in LREB region. This needs to be packaged as a joint venture by the members Counties of the bloc.

#### Health

Information, Communication and Technology plays a big role towards achieving universal health coverage (UHC). Basing the foundation on Primary Healthcare to achieve universal health coverage, ICT plays an important role in supporting, enhancing and accelerating the education on primary health care. Though it's an effective means of developing workforce capacity. It helps to recruit and retain professionals and it is cost-saving. It facilitates social and collaborative learning which has great impact on patient outcomes, brings contextualized care to where it's needed and it improves the quality of care by facilitating access to evidence-based medicine and reflective learning. However, since most counties in Kenya that have health centres are not properly equipped i.e. they lack basic water and consistent electricity and often equipment is faulty especially in the main district health facilities, a few counties infrastructure and ICT can enable each of these centres to be linked to a regional data centre and allow for research and sharing of important health information where necessary.

Information and Communication Technologies (ICT) is important in all sectors, but has proved very special and crucial to the mother of all sectors – the education sector. Currently, ICT is being used in education to assist students to learn more effectively by providing teachers with access to a wide range of new pedagogy. The technology is also being used to enable teachers to do administrative tasks more to students efficiently. It enables students/pupils to show teachers how to improve teaching and in doing this, it enables students to have more informed and more profitable access to teachers' knowledge and skills. Until the emergence of the Covid-19, not many education institutions had embraced ICT at the primary school level.

But the Covid-19 changed this at all levels of learning in the country. ICT has helped increase the learner's knowledge. ICT incorporates electronic technologies and techniques used to manage information and knowledge, including information-handling tools used to produce, store, and process, distribute and exchange information. ICT increases access to and improve the quality and competitiveness of higher education programs such as library services. It can also contribute to achieving universal education worldwide, through the delivery of education and training of teachers, improved professional skills, better conditions for lifelong learning, and the potential to reach people that are outside the formal education process. The Lake Economic Region Bloc can also use ICT to drive growth in the education sector – from nursery, primary secondary, tertiary and university level - thereby playing a key role in manpower development in the member counties.

Table 20 Summary of ICT Sector in the Lake Region

County	Current ICT Activities	Opportunities
Bungoma	Key mobile phone operators in the county are Safaricom, Airtel, Orange, Telkom and Yu There are a few internet cafés in major towns within the county.	<ul> <li>The county needs to invest in constructing and equipping computer laboratories in all public schools to enhance access to quality ICT education for all learners.</li> <li>Establish e-management systems in each sector.</li> <li>Create a pool of ICT knowledge workers.</li> <li>Establish digital centres in each ward and sub- county.</li> <li>Establish a software academy as a revenue generating activity.</li> <li>Formulate appropriate PPP arrangements for strategic ICT hubs.</li> <li>Provide cheap ICT sites to enhance uptake and knowledge dissemination</li> </ul>
Homa Bay	The county has a mobile phone penetration of 62.7 percent  • There are internet cafes within various parts in the town.	<ul> <li>ICT can be used to provide quality, efficient and effective services, access market information and develop competitive advantages in the global market.</li> <li>Provision of funds for research and encouragement of Public-Private Partnerships in the provision of internet and web-related services.</li> <li>Sub-county Information and</li> </ul>
		Documentation Centres need to be digitalized

		and strengthened through access to reading materials and government publications for access by the general public.  • Laying of optic cable and communication boosters across the county.
Kisii	The County approximately 20 cyber cafes providing internet services. There are five mobile phone providers namely: Telkom, Orange, YU, Safaricom and Airtel	Set up a library in Kisii Town managed by Kenya National Library Services. Establishing, Information and Documentation Centres in Masimba and Nyamarambe
Kisumu	8,500 landlines Penetration of Safaricom, Airtel, Orange, and Yu networks are at about 90 per cent	Establishment of free ICT education in formal education and at community level. Promotion of software for people of who are visually impaired. Establishment of digital or internet kiosks in villages.
Siaya	1.2 per cent of the household's own computers. A few cyber cafes offer internet access, typesetting, printing and photocopying services	Develop digital villages in the Sub Counties to ensure appreciation of technology throughout the County Expand infrastructure that will improve on the County's economic and social development
Vihiga	The mobile telephone network coverage stands at 80 per cent.	Establish digital villages in each constituency. Connect internet cables to all urban centres in the county
Busia	The entire County is covered by cellular phone network provided by Safaricom, Airtel, Orange, Telkom, and Yu. There are over seventy licensed cyber cafes most of which are in urban centres.	Link all functional areas at County, Subcounty, and ward levels as well as the national departments and agencies through the establishment of an integrated central ICT delivery unit.
Migori	Penetration of the mobile telephone currently stands at approximately 75 percent	Integrate ICT in governance through provision of services the wards, sub counties and polytechnics. Establish a county radio station Digital kiosk.
Nyamira	There are 1,713 landline telephone connections in the county.	Increase network coverage by the telecommunication service providers. Integration of ICT in the day to day sector specific operations by Strengthen County and Sub-County Information systems
Kakamega	The mobile network provision is by Safaricom, Bharti Airtel, Orange, Yu are all within the county borders. 94 cyber cafes 1,713 telephone landlines	Integrate ICT into teaching and learning in educational institutions. Enhance education management information systems
Kericho	Has mobile network service of Safaricom, Bharti Airtel, Orange and Yu within its border.	Establish digital villages in each constituency. Connect internet cables to all urban centres in the county as the national departments and agencies through the establishment of an integrated central ICT delivery unit.

Trans Nzoia	Has mobile network service of Safaricom, Bharti Airtel, Orange and Yu within its border.	Link all functional areas at County, Sub- county, and ward levels as well as the national departments and agencies through the establishment of an integrated central ICT delivery unit.
Nandi	Has mobile network service of Safaricom, Bharti Airtel, Orange and Yu within its border.	The county needs to invest in constructing and equipping computer laboratories in all public schools to enhance access to quality ICT education for all learners. Establish e-management systems in each sector. Create a pool of ICT knowledge workers. Establish digital centres in each ward and sub- county. Establish a software academy as a revenue generating activity. Formulate appropriate PPP arrangements for strategic ICT hubs. Provide cheap ICT sites to enhance uptake and knowledge dissemination
Bomet	Has mobile network service of Safaricom, Bharti Airtel, Orange and Yu within its border.	Increase network coverage by the telecommunication service providers. Integration of ICT in the day to day sector specific operations by Strengthen County and Sub-County Information systems

# 5.2.3: Proposed Projects

Flagship Project: ICT Improving Service Delivery

# **Networking of County Headquarters**

The use of ICT for the improvement of service delivery among a few member Counties way back in 2014 is the central pillar upon which this Regional Bloc is anchored, and we must take note of that fact. ICT networking has become one of the most successful ways of sharing information, where all computers are wirelessly linked together by a common network. Now, businesses and organizations heavily rely on it to get messages and information across to essential channels. Not only has it benefited establishments, but also individuals, as they also need to share important information every day. Although the ICT networking is critical, it does have some drawbacks. Some of the advantages of ICT networking include enhancement of communication and availability of information, allows for more convenient resource sharing, makes file sharing easier, it is highly flexible, it is an inexpensive system and it increases cost efficiency. However, the disadvantages include: - since it's shared, it lacks independence, it poses security difficulties and lacks robustness.

A snapshot of what happens reveals that most of the county headquarters of the Lake Regional Economic Bloc have not been completely networked. As a driver of service delivery, ICT will enable the transformation of key objectives of the Lake Regional Economic Bloc and economic sectors to enhance productivity and national and global competitiveness and gr86vth. ICTg exists

only to support delivery of services to the customer. The Lake region embraces the use of technology for the value it brings in delivering outcomes to the citizens, rather than seeing it as an objective in and of itself. ICT is an enabler of change, assisting the streamlining of business processes to support continuous improvement and the resultant productivity and service benefits. Some counties have started the process, but most are only partially connected. The first step is to get county offices connected and the second step is creating connectivity of sub-County Offices to the County HQ. Once this has been completed, the region will have a base on which all activities can be supported by ICT.

Set up a minimum of 2 Data Centres in the region. The Data Centres will enable the region to provide hosting of data services for all the sectors identified. The Data Centres should also have a redundancy site for back up purposes. Currently, LREB anticipates setting up one (1) Data Repository Center as a one stop shop to serve the region, researchers, students and a host of other beneficiaries.

### Free Wi-Fi in Counties

Establish free Wi-Fi in the CBD of each of the counties in the Lake Region in order to provide internet access to communities during business hours. This will allow all sectors of the economy to embrace the use of ICT in their daily lives, for traders, education institutions, farmers, tourists and businesses. Currently, the only available Wi-Fi areas are in offices, hotels and very few educational institutions and businesses. A few Counties attempted to set up Wi-Fi facilities in main towns and these seem to have been abandoned altogether! They need to get back to this with serious investments as we cannot underscore its net value in the modern world.

## **Revenue Collection System**

This is a key project that each one of the counties has expressed interest in. Currently most counties have no digital revenue collection tool and rely on the old council systems to collect revenue. This means that the revenue leakages cannot be identified or eliminated. Establishing a revenue collection system will enable each county to collect more revenue. The system should be linked to the National Government IFMIS system to allow for revenue collection reporting and disbursements of county funds. Some counties have already initiated automation projects for revenue collection and it is proving to be useful. The Blueprint proposes an automated revenue collection system for the region so that the tax payer can pay their regional taxes directly to the collectors through mobile platforms like M-Pesa.

# **Computers in Schools**

If ICT should be the foundation for economic growth in the Lake Region, it is important that schools, colleges and learning institutions are equipped with computers. Currently a limited number of schools have computers; the few that have computers are through donations from private and donor institutions. This should be a priority area as it will ensure that the students in this region have equal access to education material as their counterparts in the Capital and other major cities in the country.

### Cloud data services

Setting up cloud computing in the region is critical especially given the plans to digitize the region's operations in the health, agriculture, tourism, education, and financial services. All this information needs to be secured and accessed easily.

# 5.2.4: Resource Mobilization Strategy

Engage with existing institutions and the county in identifying the gaps for implementation on the ongoing, partially-ongoing and proposed/planned flagship projects for each county and determine how scaling up would impact the region in terms of empowering the communities economically by providing employment and improved livelihoods.

Engage counties to determine whether budgets have been allocated for their ICT projects and the extent of support required from other financial partners.

- Engage with private sector by in resource mobilization creating a single financial pool in a form of Commercial Development Investment fund supporting projects in sectors of manufacturing services, transport and education respectively
- Engage with private sectors on a Private Public Partnership in integrating IoT in Learning
  Institutions and County governments which will lead to a collaborative educational and
  entrepreneurial experience for both students and teachers and business people.
- Innovative of IoT and IA solutions will enhance the efficiency of school management by providing more effective decision-making systems. E-learning is entering a new era and with the help of IoT, it can be more interactive and engaging by giving student progress monitoring, tailoring the curriculum to suit the skills of each learner, and having subjective grading criteria. LREB IoT & AI Challenge encouraging the sharing the innovative ideas towards tackling educational problems.

## 5.2.5: Socioeconomic Impact of the ICT sector

Interventions in ICT to strengthen the sector can have the following impact on the region:

• ICT will enable the Lake Region to leapfrog certain technology developments and catch up with the rest of the world (Wangwe, 2007)

- The use of mobile phones has resulted in increased turnover and greater efficiency in business. (Wangwe, 2007)
- The provision of basic social services like health and education is facilitated by ICT development (Wangwe, 2007)
- ICT is an important tool in citizen agency, used by citizens to monitor public authorities and resources (Dobra, 2012)
- ICT increases the coherence of information, since it enables citizens to cross-reference and link pieces of information, making it easier to understand patterns of governmental actions and policies (Dobra, 2012)
- ICT helps reduce the asymmetry of information between elected officials and the electorate, and between bureaucrats and elected officials (Dobra, 2012)
- Increased participation by citizens in web-based forms of interaction results over time in a corresponding growth in a culture of openness and increases transparency (Dobra, 2012)
- Cloud data services.

Setting up cloud computing in the region is key especially given the plans to digitize the region's operations in the health, agriculture, tourism, education, and financial services. All this information needs to be secured and accessed easily, and continuously updated.

### 5.3: Infrastructure

Infrastructure is important for faster economic growth and alleviation of poverty in the country. The adequate infrastructure in the form of energy, roads, railways, airports and their efficient working is also required for the integration of the economy with other economies of the world.

The following are the important constituents of infrastructure: power and the source of its



Photo: 7: Road Network in Kisumu Town

production such as coal and oil, roads and road transport, railways, communication, especially telecommunication, ports and airports and for the agriculture, there is need for irrigation.

The capacity of the sectors like agriculture, tourism, education, health, ICT and financial services rely on an efficient ICT in order to operate effectively. A well-networked and functioning infrastructure is essential for inter-county market integration, lowering unit costs of production and transactions, facilitating the flow of materials and information, reducing inequalities and poverty, and enhancing economic capacity of the region. Although nationally, the contribution of the infrastructure sector to GDP has been on the decline from 21.3 percent 2008 to in 19.1 percent in (2012) and subsequently thereafter till 2018. The transport and communications sub-sectors have made the highest contribution to GDP over the period compared to the other infrastructure subsectors. The electricity and water supply sub-sector marked the least contribution to GDP at 1.4 percent in 2012 (Kippra, 2020).

## **Electricity**

In Kenya, power distribution is held by only one institution, Kenya Power Lighting Company. Power generation is done by the Kenya Electricity Generating Company (KENGEN) which provides 90 percent of Installed Capacity. Independent Power Producers (IPPs) contribute 10 percent of Installed Capacity; these include Westmont, Iberafrica, OrPower4 (Kenya) subsidiary of Ormat Technologies, Tsavo Power Company (TPC), Aggreko and Africa Geothermal International (AGIL). The total installed electricity capacity increased slightly from 2,818.9 MW in 2019 to 2,836.7 MW in 2020. However, effective electricity generation capacity dropped by 1.1 per cent to 2,705.3 MW in 2020). The domestic demand for electricity increased by 8.0 percent and the number of connections under the Rural Electrification Programme (REP) rose by 18.5 percent to stand at 453.5 thousand customers. The ever-rising demand remains unfulfilled! Latest figures were not readily available (Economic Survey, 2021).

A sizeable percentage of the rural population are powered by solar where M-KOPA, d.Light among others have connected thousands of homes with solar panels, supplied families with TVs and smart phones and other lighting system on a hire purchase with repayment period stretching into 24-36 months, County of Siaya is where such services have greater penetrations and can be used as a model for other Counties where national grid is sparsely distributed.

## Petroleum

Kenya has one of the largest crude oil refineries in East Africa, the 90,000-barrels-per-day (bbl/d) Mombasa refinery. In 2011, Kenya imported about 33,000 bbl/d of crude oil from the United Arab Emirates alone and another 51,000 bbl/d of refined oil products from other countries

(KNBS). Kenya has a product pipeline system that transports petroleum products from Mombasa to inland areas, and which have since been expanded. Most of the imported and/or domestically refined products are sold in Kenya's major cities and the remainder is sent to neighbouring countries via trucks, and the Port of Kisumu which has since been refurbished and providing maritime cargo services. A fuel jetty is about to be commissioned once the corresponding jetty in Jinja, Uganda is completed in 2011, Kenya consumed around 81,000 bbl/d of oil products.

In mid-2012 oil was discovered in Kenya with a confirmation of around 300 million commercially viable barrels worth of reserves. Kenya's deposits may top 10 billion barrels and if the Kenya-Uganda pipeline were connected, 500,000 barrels of oil could be piped per day; Oil was to be ready for exportation to be ready by 2016, but incidentally, is still a long way to commence.

In mid-2012 oil was discovered in Kenya with confirmation of around 300 million commercially viable barrels worth of reserves. Kenya's deposits may top 10 billion barrels and if Kenya-Uganda pipeline were to be connected, 500,000 barrels of oil would be flowing per day through port Mombasa per day. Unfortunately, this turnkey regional oil pipeline never materialized due to non-harmonized geo political agenda. Kenya is still able to exploit the northern corridor oil pipeline development from Port of Lamu to Juba and Southern provinces of Ethiopia, respectively, as this would make Kenya to balance for the lost opportunity of Uganda Kenya oil pipeline.

Kenya is rapidly losing the once famers Kenya Uganda transport corridors to Uganda as Uganda and Tanzania are currently developing the Tanzania-Mwanza SGR, and connecting upwards through ferries to Ports in Uganda and onwards to DRC, Rwanda, Burundi and South Sudan! (KNBS, 2021).

The tables below show the summary of electricity generation and consumption between year 2016 and 2020.

Table 21: Summary of electricity generation by source 2016 - 2020(Million GWH)

Year	2016	2017	2018	2019	2020
Energy	3,959.9	2,776.8	3,986.4	3,205.3	4,232.7
Hydro	1,470.9	2,534.1	1,545.8	1,313.3	754.5
Thermal oil	4,484.2	4,756.3	5,127.8	5,234.7	5,059.8
Geo thermal	0.1	1.9	2.5	0.3	0.2
Wind	56.4	61.3	375.6	1,562.7	1,331.4
Imports	86.3	229.6	130.3	212.0	136.7 <b>1</b> -   Page

(Source: Population Census)

Table 22: Summary of electricity consumption, 2016 - 2020(Million KWH)

Year	2016	2017	2018	2019	2020
Domestic and Small commercial	3,315.7	3,528.3	3,665.9	3,780.1	3,829.1
Large & Medium (Commercial and Industrial)	4,146.3	4,199.0	4,336.5	4,441.0	4,281.0

Source: Population Census 2019

## **Transportation**

Kenya has an extensive network of paved and unpaved roads. The railway system links the nation's ports and major cities and connects with neighbouring Uganda. According to the Kenya Roads Board, Kenya has 161,451.5 kilometres (99,970 mi) of roads with 11,189 kilometres (6,953 mi) unpaved. Two routes in the Trans-African Highway network pass through Kenya- Nairobi: the Lagos-Mombasa Highway and the Trans-African Highway which links East Africa and West Africa. However, it is only complete between the Ugandan–DR Congo border and Mombasa.

The total paved roads were 22.6 thousand kilometres by June 2020, an increase of 6.1 per cent from 21.3 thousand kilometres in June 2019. The volume of cargo transported through the MGR dropped by 5.8 per to 628 thousand tonnes in 2020. However, revenue earned from MGR cargo stream rose by 15.7 per cent to KSh. 1, 114 million in 2020. The number of passengers transported through MGR dropped by more than half to 1.9 million passengers in 2020. Consequently, revenue from MGR passenger stream declined by half to KSh82 million in 2020. The volume of freight transported through Standard Gauge Railway (SGR) went up by 4.8 per cent to 4.4 million tonnes, however, revenue earned declined by 19.2 per cent to KSh10.5 billion in 2020. The number of passengers handled via SGR declined by almost half to 0.8 million while revenue from passenger transport stream dropped by 47.1 per cent to KSh0.9 billion in 2020.

The Maritime transport in Lake Victoria has since been revived with the refurbishment of the Port of Kisumu completed in 2019. The cargo haulage has since increased from a paltry 3,500Mt/Month to 350,000Mt/Month, and is still expanding. This trade is currently limited to Uganda ports and Islands in Uganda. Passenger transport is yet to resume. The revamping of the Port of Kisumu is one such successful LREB Flagship Project, under Infrastructure Pillar called "Maritime Transport and Associated Services in Lake Victoria, Kenya" - 92 - | Page

Table 23: Summary of Transport and Storage 2016 – 2020

Consumption source	2016	2017	2018	2019	2020
Air passengers handled	183,118	169,626	202,000	216,376	111,010
Pipeline throughout	2. 4,403	26,828	30,019	31,879	26,667
Freight handled by Kenya Railways	.4,927	4,601	11,497	14,828	12,552
Road Transport	1,044,334	1,194,999	1,377,138	1,531,990	1,546,794

(Source: Economic Survey 2021)

# 5.3.1 State of Infrastructure in the Lake Region

Currently, less than 50 percent of roads in the Lake Regional Economic Bloc are paved. The region generates about 124 Kilowatt hours per capita per year, this is dismal in comparison to the large population in the region that requires power. The region is surrounded by the second largest fresh water lake in the world yet water transport is still underdeveloped. Sanitation coverage in the region is abysmal, 40 percent of the population lack access to safe portable water and 60 percent of the population lack basic sanitation facilities. The table below shows the summary of access to infrastructure per county:

Table 24: Summary of access to infrastructure by County

	Improved water (& households 2019)	Improved sanitation (% households 2019	Electricity (% households 2019)	Paved roads (as % of total roads)	Good/fair roads (as % of total roads)
Migori	47.8	66.8	5.3	4.7	55.0
Homa Bay	38.6	61.4	3.3	4.8	42.9
Kisumu	60.1	87.4	18.3	14.2	38.0
Siaya	46.7	82.7	4.3	6.4	50.5
Kisii	67.9	99.2	7.8	5.2	48.6
Nyamira	68.6	99.4	6.1	6.9	64.9
Vihiga	76.4	99.1	7.0	16.6	60.4
Kakamega	76.1	122.1	5.6	4.9	54.1
Bungoma	88.9	96.6	4.5	6.0	46.7
Busia	82.9	92.0	6.0	4.9	58.6
Kericho	65	90	5.6	4.3	46
Nandi	70	96	6.3	4.8	53
Trans Nzoia	78	94	6.1	5.9	74
Bomet	58	90	7.6	4.9	58

(Source: Population Census, 2019)

Table 25: Summary of the percentage distribution of household by lighting fuel source

	Electricity	Paraffin	Gas (LPG)	Biogas	Firewood	Charcoal	Solar	Not Stated
Migori	0.6	1.3	6.8	0.5	71.3	19.2	0.3	0.0
Homa Bay	0.4	1.4	6.2	0.4	74.3	17.0	0.3	0.0
Kisumu	0.9	7.8	18.7	0.6	49.6	22.2	0.2	0.0
Siaya	0.3	2.0	6.0	0.3	72.4	18.8	0.2	0.0
Kisii	0.8	2.2	13.5	0.5	77.8	5.1	0.2	0.0
Nyamira	1.2	1.9	8.6	0.3	84.3	3.5	0.1	0.0
Vihiga	0.4	2.4	7.1	0.3	83.8	5.9	0.1	0.0
Kakamega	0.5	2.4	7.4	0.3	80.8	8.2	0.3	0.0
Bungoma	0.4	2.6	7.2	0.4	78.3	11.0	0.2	0.0
Busia	0.5	1.5	6.0	0.4	73.4	18.0	0.2	0.0
Kericho	0.7	1.4	9.5	0.3	79.0	8.9	0.1	
Nandi	0.5	1.0	5.8	0.3	84.7	7.6	0.2	0.0
Trans Nzoia	0.6	3.0	8.7	0.4	69.8	17.3	0.2	0.0
Bomet	0.3	0.8	5.9	0.2	88.4	4.1	0.2	0.0

(Source: Population Census 2019)

## 5.3.2 Challenges in infrastructure in the Lake Region

The challenges to infrastructure in the region are:

- Lack of resources to undertake infrastructure development.
- Lack of reliable data to determine finance and manpower requirements of projects.
- Lack of infrastructure development framework that adequately delineate stage-by-stage project requirements in many Counties of the Region.
- Inadequate planning, mismatch of projects with society needs, and requirements.
- Inadequate supporting institutions at County level
- Competing political interests

# 5.3.3: Summary of Infrastructure Sector Investment Opportunities per Region

The table provides a summary of infrastructure sector investment opportunities per region:

Table 26: Investment Opportunities in the Infrastructure Sector per County

County	Current Infrastructure Situation/ Activities	Opportunities
Bungoma	Bungoma County has 67 km of class A roads and 154	Construction of bridges in Sanga'lo, Chebukaka-
	km of class C roads.	Terem
	The County has two underutilized airstrips in Webuye	Set up a Hydro Power Station in Teremi and
	and Bungoma Towns.	Nabuyole.
	Electricity connectivity stands at a 1.5 percent.	Improve market link roads and construct by
	The average distance to the nearest water source is 1.5	passes and Expansion and re-designing of key
	km in rural areas while in urban areas it is 0.5 km.	County roads.
	The water resources in the County include rivers,	Economic Stimulus mobile bus ICT project for
	streams, dams, pans, wells, springs, roof catchment	schools.
	and scattered boreholes.	
I		

Busia	County has a total of 1,441.30KM of roads, of these, 58.6 km are of bitumen, and 377.5 km are gravel surface while earth surface roads cover 1,005.2 km most of which are unclassified.  The county has only 11 km of railway and served by one railway station at Malaba border.  The County has one airstrip located at Busia Town There are two ports at the Lake Victoria shores, the Sio-Port in Funyula Sub-county and Port Victoria in Budalang'i Sub-county which mainly serve as fish landing ports.  Busia County has a total of 23 post offices and over ten licensed private couriers among them G4S, Wells Fargo, and several public service vehicle couriers such as Easy Couch and Crown Bus.  The major water sources in the county include Lake Victoria, over ten rivers, shallow wells and unprotected	Introduction of other sources of energy like solar and biogas Rural electrification programme Establishment of a dry port depot establishment within the county in Matayos and Teso North Sub counties towns. Rehabilitation and upgrading of the airstrip. Improve Water transport connectivity in the region (Budalang'i and Funyula Sub counties)
	springs used for domestic and other purposes.	
Homa Bay	Homa Bay County has one class A1 (Kisii-Kisumu) road which covers about 30 km; one class C20 (Homa Bay – Rongo) road covering about 30 Km; two class C19 (Homa Bay – Mbita and Homa Bay – Kendu Bay) roads covering about 71 Km and one class C18 (Rodi Kopany – Sori) road covering about 32 Km. The county has five airstrips, namely: Kabunde, Mfangano, Rusinga, Otange and Otaro Water is a favourable means of transport between Suba, Mbita, Homa Bay Town and Karachuonyo subcounties of Homa Bay County.	Develop low cost alternative sources of energy (solar packs, wind energy, geothermal power; solid waste energy etc.) Increase rural access to electricity; improve access to electricity connection to households, trading centres and islands (Mfangano, Rusinga, Remba, Ringiti and Takawiri) Expand the road network all class C and D roads to be bituminized. Installation of Radio Networks on the Islands Opening of Otange, Otaro and Kabunde airstrips. Improve water transport.
Kisii	The County has a network of 1,133 km of classified roads and 435km of rural access roads. About 171 kms of the roads are tarmacked.  The County has one airstrip at Suneka in Kisii South sub-County  The electricity coverage in the County is estimated at 45 percent  There are numerous water supply schemes in Kisii County from rivers, protected springs and wells/boreholes.	Construction and upgrading of roads in Bobasi, Nyaribari Chache, Kitutu – Chache, Nyaribari- Masaba, Bonchari, South Mugirango and Bomachoge. Promote use of other forms of energy i.e. solar, fireless, cookers, and biogas. Rural Electrification Programme. Establish ICT centres in all sub-counties. Rehabilitation and expansion of the Air strip. Establish of hydroelectric power station(s) at River Gucha
Kisumu	The total length of tarmac road is 286km with the rest of the link roads being either gravel surface (725.6km) or earth surface (956.6km).	A Railway network to connect with Kisumu International Airport. Rehabilitation and expansion of Kisumu
	The county has Kisumu International Airport.	International Airport.  - 95 -   P a g e

	The main source of energy for cooking in Kisumu County is firewood which accounts for 60 percent of all energy sources.  For lighting, paraffin is the most used source of energy in the county accounting for 79.3 percent of all energy sources followed by electricity at 18.3 percent.  The water sources in the county are; Lake Victoria, shallow wells, unprotected springs, water pans, dam, boreholes and roof catchment systems.	Construction and expansion of roads to facilitate transportation of farm produce. Rural Electrification Programme implemented in markets and schools. Improve County fire services Street lighting Improve waste disposal and treatment
Siaya	The County has 332 Km of bitumen road, 708 Km of gravel and 1,130 Km of earth roads The County has a total of 28 Post Offices and 22 subpost offices spread across the region. Three courier services operate in the region they include G4S, Wells Fargo and EMS. The main sources of lighting in the County include: tin lamps, lantern, electricity, pressure lamps, gas lamps, wood fuel and solar. The main sources of cooking fuel used in the households include firewood constituting 82.5 percent, charcoal at 13.6 percent while 1.3 percent of the households use paraffin. Water supply facilities provide water coverage of 42per cent serving about 396,000 people in the County 5.9 percent of the households have access to piped water.	Construction and expansion of roads.  Expand and extend water distribution.  Construction of wells and bore holes.  Rural electrification Programme.
Vihiga	The county's total road network in length is 1,058.2 Km. Paved roads make up 16.6 percent of the total road network. Bitumen surface covers a length of 201.5 Km, gravel surface 373.7 Km and earth surface 483 Km.  Urban household access to electricity is 10.8 percent whereas the rural household access to electricity is 5.3 percent.  The main source of cooking fuel is firewood which accounts for 84.8 percent of total cooking fuel whereas the main source of lighting fuel is paraffin accounting for 88.7 percent of total population.  The county has no working airstrip and relies on the neighbouring counties for flight services.  Vihiga County is served with 23 post/sub-post offices and four private couriers.	Revive railway transport. Revive the airstrip in Kaimosi and construction of an air strip at Hamisi and Mufwendete. Expansion and construction of roads and foot bridges. Rural electrification programme and promote other forms of energy use like solar like the construction of Bio gas and solar power stations at Izava, South Maragoli, Emuhaya. Establishment of a community radio. Establishment of a Hydro power gen-eration plant at Egalogoli and Kaimosi Construction of bus Parks. in Mbale, Majengo and Chavakali

Kakamega	The county has a total of 3500 km road network of which 260 km is of bituminous standard while gravel surface covers 1,701.7 km and the earth surface cover 1389.3 km and 149km of the rest The four major private couriers are Group 4 Security services, G4S, Easy coach parcel services and Wells Fargo courier services.  Mobile telephone in the county has 85 percent coverage. The main sources of water are the major rivers flowing through the county such as Nzoia, Sasala, Wiratsi, Isiukhu, Yala, Kipkaren and Lusumu Rivers.  Western Water Services Company is the main water company in the county.	Expansion and rehabilitation of roads to ensure roads are passable and improve rural accessibility.  Construction and rehabilitation of bridges and river crossings in Khwisero, Ikolomani, Butere, Malava, Mumias, Likuyani, Shinyalu, Navakolo, Lurambi and Matungu.  Water points rehabilitation and supply adequate portable water.  Rural electrification programme.  Rehabilitation and construction of sewerage and treatment works.  Hydroelectric power generation on R. Yala, Nzoia and Lusumu.
Migori	Migori has 104.6 km of tarmacked road including Road A1 that links Kenya with Tanzania through Isebania.  The county has three airstrips, namely: Migori at Lichota, Macalder and Kehancha.  The number of post offices in the county are 5.77.4 percent of the households in the county use firewood as the main source of energy for cooking followed by charcoal at 18.8 percent and paraffin at 2.8 percent while 94.4 percent of the households use paraffin as the main source of energy for lighting. The major water resources in the county is Lake Victoria, rivers, boreholes, shallow wells, springs. The major rivers include Kuja, Migori, Sare, Oyani, Riana, Tebesi and Misadhi.  Less than 3,000 households have access to portable water.	The county has the capacity to produce its own hydro-electric energy based on the available water supply from its rivers as is the case in the Gogo waterfalls.  Expansion, rehabilitation and construction of roads to promote movement of goods and services.  Rural electrification programme.  Promote use of other forms of energy i.e. biogas, solar, energy saving stoves,  Rehabilitation of Airstrips at Kehancha, Migori and Macalder.  Construction of water supply schemes and establish waste water treatment plant.
Nyamira	A total of 298 km of all roads within the county is earth surface; 200 km are gravel surface, 100km is mixed surface, 80 km are bitumen surface.  The county has 5 post offices (Nyamira, Ikonge, Keroka, Nyansiongo and Kebirigo) and 15 sub post offices.  Firewood is the main source of energy in the county with 50 percent of the population using it.  Lantern and tin lamp are a common source of lighting in the rural areas at 39 percent and 55 percent of the rural households respectively  The county has 1,945 shallow wells, 2,521 protected springs, 694 dams as well as over 3,301 unprotected	Connection of electricity especially to institutions, youth polytechnics and market centres.  Rehabilitation and construction of more roads Construction of foot bridges at Bitundugusi, Nyageita and Rianyamesa.
	springs and 7 permanent rivers.	- 97 -   P a g e

Kericho	Poor road networks in Kericho hinder market access. Out of its 1,673 km of road, only 183 km are paved (County Government of Nandi, 2013). The unpaved roads are in bad condition especially during the rainy seasons. Mosop and Tinderet Sub-Counties are most limited by the poor road networks, despite their high agricultural productivity. Farmers in these areas incur high costs while transporting their produce to markets.	
Nandi	Poor road networks in Nandi County hinder market access. Out of its 1,673 km of road, only 183 km are paved (County Government of Nandi, 2013). The unpaved roads are in bad condition especially during the rainy seasons. Mosop and Tinderet Sub-Counties are most limited by the poor road networks, despite their high agricultural productivity. Farmers in these areas incur high costs while transporting their produce to markets.  Inadequate infrastructure; water, electricity, solid and liquid waste management, education, ICT, health facilities, sporting facilities.	Encourage modal split by provision of infrastructure for NMT Widening of encroached roads Regulate road sizes during subdivision of land Encourage PPP in road improvement Integrate land use planning with transport planning
Trans Nzoia	Trans Nzoia County has a total of 4421.7 kilometres of road network out of which bitumen surface is 163.3 Kilometres, gravel surface is 2165.4 Kilometres and earth surface roads is 2093 Kilometres.  Mobile telephone coverage 80 percent of the households is the most preferred means of communication. The county is fairly covered by mobile telephone network with the three major market players namely Safaricom, Airtel and Telkom enjoying a wide coverage.	Installation and maintenance of 443m Culverts and 4 box culvert bridges.
Bomet	Improved access by construction and maintenance of roads across all the sub-counties-approximately 400 km constructed and maintained.  Improved access by completion of 7 twin culverts across the county.  Improved access by completion 1box culvert in Kapletundo ward.  Purchase of a County Dozer to open new roads in the county, reducing cost of maintenance of roads.  Installation of Fleet management system that has helped track the county fleet.  This will monitor the use of vehicle, the fuel consumption and ensuring they are well maintained.	Mapping out and digitization of roads within Bomet County that will help in planning for road maintenance.  Construction of 4 No. Bridges ongoing these are Muriasi, Chepkositonik, Siomo Targambei and Quarry Bridges.  Construction of 3 No. Foot bridges ongoing, these are Kirwa, Kintore and Chemerian Foot bridges.  Open new roads using the county dozer (6Km per ward) is ongoing with three wards completed.
	Total and oncoming they are wen manitalited.	- 98 - I P a g e

Development of a transport policy to improve transport service delivery.

# 5.3.4: Key Interventions

# Flagship Project: Creation of a Lake Region Ring Road

The development rate of the infrastructure sector in the Lake region will greatly inform the rate of development of the other sectors. Bridges need to be constructed across rivers in Bungoma, Siaya, Budalang'i to facilitate human movement; roads across the region have to be constructed or rehabilitated; electricity to be connected to households, markets, and health and education institutions, and water points need to be rehabilitated and portable water supplied to homes. Airport and Airstrips Expansion Kisumu International Airport is in the process of expansion to meet international standards and accommodate larger air crafts and cargo. Other airstrips in the region need to be rehabilitated, reopened and/ or constructed especially in Busia County which is an established trading centre. Operational airstrips in the region are important facilitators of imports and exports for local businesses as well as making the region accessible to other parts of the country. Lake Basin Region Railway and Dry Ports Opening up the non-operational railway system of the region will create access to larger markets in East Africa. A functioning railway system will ease pressure on road transportation of cargo and human public transport. Additionally, building dry ports in counties bordering the Lake Victoria i.e. Siaya, Kisumu, Homa Bay and Migori and connecting the dry port termini with the rail system will benefit the economy of the region as it will attract international cargo export and import.

An international investor, Inspirafarms in collaborative partnership with Agri Pro Exporters Limited has shown interest in establishing a four-million-dollar worth of investment in Air logistics and Cold Chain infrastructure and massive net returns on a two acre plot close to Kisumu International Airport, this will offer value addition to fresh horticultural produce for direct export through Kisumu international Airport and reduce wastage from 25 percent to 1 percent and increasing returns against the recovered produce would have gone into waste. This would also provide a complete turn round of the horticultural activity hither to confine if Central and Eastern provinces of Kenya and to enable LREB become a net foreign exchange earner in the Country.

### 6.0: CRITICAL ISSUES THAT ALSO MATTERS

There are four cross cutting themes aimed at integrating marginalized groups and issues into the Lake Region Economic Blueprint. These are: Women and Girls, Youth, Persons with Disabilities, and the Environment.

#### 6.1: Women and Girls

## 6.1.1: Women in Agriculture

In Kenya, women command domestic duties as well as most of the agricultural cultivation. In this region, agriculture accounts for 70 percent of the labour force, where women make up 75 percent of that work force (Freidenberg, 2013). However, although women are given ownership of the crops they cultivate, they are not given the title of land owners (Freidenberg, 2013). Without laws to protect the equal rights of women to housing and property, including during marriage and at its dissolution, both at divorce and death of a spouse, women will continue to unreasonably shoulder the burden of poverty in Kenya (FIDA, 2008). Further, women are often prevented from interacting directly with men other than close relatives which limits their participation in agricultural or financial training and their ability to benefit from working with extension agents and veterinarians, most of whom are male and primarily address other men (Fletschner, 2011). It has been estimated that if women farmers had access to the same resources as men, they would be able to increase overall agricultural productivity by as much as 30 percent (Doss, 2012).

An important gender issue particularly pertinent to the Lake Region is the fish for sex issue. According to research done in 2012, in the region, particularly in the area around Lake Victoria, women fishmongers form relationships with fishermen as part of the jaboya system where women who wish to sell fish in the market secure the rights to purchase the fish caught by the fishermen by having sex with them (Kwena et al, 2012). Due to the nature and context of the sexual intercourse, sex typically occurs in a hurried manner, often without preparation or protection. As a result, women in these fishing communities are at increased risk of HIV. According to IRIN HIV prevalence among fishing communities stands at 30 percent, while an estimated 25 percent of all new infections in Nyanza are attributed to this group. An estimated 27,000 women are involved in the fish trade in Nyanza either directly or indirectly, according to the Ministry of Fisheries (IRIN, 2011). The continued poverty of women means they

### 6.1.2: Women and Girls in Tourism

According to a report by the World Bank (2007) tourism is an important sector of the Kenyan economy and a large source of formal and informal employment for women. Most jobs held by females are in the sale of handicrafts such as weaving and wooden carvings (Ikiara 2001). The

seasonal nature of tourism results in employment instability that reduces the sector's employment benefits for women.

An insidious aspect of tourism that affects women and girls is sex tourism. It has been documented that girls under the age of 18 are prostitutes for older male tourists. Apparently male tourists prefer young girls between the age of 15-20 who they pay as little as USD60 for sex. Other girls are subjected to group sex with several adult male tourists. Because of abject levels of poverty in many areas of tourism, families willingly allow or even encourage their young daughters to become child prostitutes to earn money for the household. Although this specific issue is not yet present in the Lake Region, it is important that steps be taken early to prevent a culture of child sex tourism emerging in the region.

## 6.1.3: Education Status of Women and Girls

In terms of ECDE, enrolment of boys and girls is growing towards a direction where they are at par. However, at primary level, enrolment rates begin to drop for girl partly due to poverty, limited finances, and a preference for educating boys rather than girls in some cultures, the use of girls in domestic child labour, and negative attitudes associated with girls' education (Norrag, 2003). According to UNESCO, secondary education remains low for girls (48%). Even when girls are enrolled in secondary schools, many do not complete the cycle due to gender insensitive teaching practices, sexual abuse and impregnation by male teachers and head masters, as well as shortage of female teachers as role models. (UNESCO, 2012)

These imbalances serve to limit the extent to which girl's potential can be fully developed as they also cumulatively affect the levels and nature of their participation in the labour market, politics and managerial positions. Thus, the Blueprint must have a focus on boosting girl child education.

## 6.1.4: Health Status of Women and Girls

Women and girls in the country are disproportionately affected by HIV, widowed and divorced women (with 17-21 percent HIV infection rate) and those in polygamous unions (11 percent compared to the overall rate of 7 percent). The Kenya government has not directly addressed their needs and the root causes for their plight (FIDA, 2008). In addition, the fish for sex culture in the Lake Region makes women and girls particularly vulnerable to HIV infection.

In terms of maternal health, some leaders remind us that 7,700 women die each year in Kenya from pregnancy related complications (Odinga, 2013). While life expectancy for women is higher than men in most countries, many health and social factors contribute to a lower quality of life for women (Odinga, 2013). Women hardly receive medical services due to lack of funds, transport and lack of awareness of their own rights. Girls are subjected to regressive practices such as female genital mutilation that have direct negative impacts on their health. Therefore, the health strategy of the Blueprint will have components specifically targeting women and girls. - 101 - | P a g e

## 6.1.5: Women's Access to Financial Services

Women constitute approximately half of the rural labour force, the Lake Region included, and are economically active in each subsector of the rural economy; yet rural women are more likely to be credit constrained than men of equivalent socio-economic conditions (Fletschner, 2011). Legal regulations and customary rules often restrict women's access to and control over assets that can be accepted as collateral such as land or livestock. Women are much less likely to have land titled under their name and less likely than men to have control over land, even when they do formally own it. Biased inheritance rights often bestow land to male relatives, leaving both widows and daughters at a disadvantage (Fletschner, 2011).

Further, rural women's access to financial resources is also limited by biased lending practices that emerge when financial institutions that consider them smaller, less experienced and therefore less attractive clients (Fletschner, 2011). In Kenya, even though women entrepreneurs make up nearly half of all micro, small and medium enterprise owners and 40 percent of smallholder farm managers, they have less than 10 percent of the available credit and less than 1 percent of agricultural credit (Ellis 2007). And, it is typically the case that loans to women are smaller than those granted to men for similar activities (Fletschner, 2011). Therefore, the Lake Region strategy will detail interventions in the Financial Services sector that specifically target and priorities women.

### 6.1.6: Women, Girls and ICT

There is need to promote technology career opportunities for girls and women in the world's fastest growing ICT sector. This will empower women and girls to choose a career in ICT – which is not just good for girls and their families, but can also be a major accelerator their socio-economic development.

Studies indicate that there is a substantial divide between women and men and between girls and boys in Internet access and use today. In 2019, the proportion of women using the Internet globally was 48 per cent compared to 58 per cent of men. Indeed, when women and girls have access to the Internet, they have the opportunity to start new businesses, sell products to new markets, find better-paid jobs and access education as well as health vital information and financial services. In Kenya and the Lake Region, the data speak the same thing. In rural areas, cultural structures still marginalize women to domesticity which limits their mobility and exposure to ICT (Wamala, 2012). Gender discrimination is seen in the fact that women and girls suffer more from a lack of confidence, language barrier, low literacy, lack of time and money, restricted mobility due to cultural factors or safety.

This blueprint will list interventions that will address these constraints and ensure women and girls benefit from the ICT and other pillars of the Blueprint.

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# 6.1.7: Interventions Targeting Women and Girls

There's a big gap between women and men and girls and boys when it comes to ICT. This gap also leads to socio-economic problems. The following are interventions designed to ensure women and girls benefit from activities detailed in the blueprint.

#### Sensitization

- Need to address the gender divide and reduce inequalities related to use of ICT and to identify ways to use ICT proactively and effectively to promote gender equality and the empowerment of women.
- Identify and promote good practices and lessons learned on the ways women and girls are using ICT;
- Capacity-building towards gender equality in education and employment;
- Enhance democracy and women's participation through electronic connectivity; and
- Develop research and policies on health and environmental hazards of ICT industries

## Agriculture

- Train women on value-added processing and introduce technologies to scale up value-added processing activities in order to attract higher prices
- Train women on marketing and business skills
- Provide incentives for women entrepreneurs in the sector by developing financial packages
  tailored to the diverse production and marketing conditions and risk factors. The Regional
  Bank should develop a variety of guarantee schemes that can underwrite the risks involved
  in such packages.

## Target men:

As men may pose roadblocks to women earning and controlling higher incomes, projects ought to incorporate men in order to mitigate tensions between men and women as well as produce more sustainable results for women. Projects such as ACDI/VOCA's Kenyan Maize Development Project and TechnoServe's East Africa Coffee Initiative can be referred to. Each incorporated the male partners of female project beneficiaries, educating men on subjects such as the importance of allowing women to attend training sessions and of including women in farm planning.

- On the Fish for Sex issue:
- Provide women fishmongers with boats they own either through grants or loans
- Develop behaviour change communications targeting men so that they look at the women as business partners and not sex partners

### Intervention on Health Status of Women and Girls issues

• Sensitise women and girls about their reproductive and human rights

- Seek to reduce inequalities between men and women to achieve desired outcomes
- How do you promote good adolescent reproductive health?
- Counties continue to advocate for the minimisation and eradication of sexual violence and harmful traditional practices using community conversations and dialogues
- Create referral linkages between schools and health facilities and outreach services, organise youth in school and out of school. Work place etc
- Invest in women's civil society to support stronger societies and advance gender equality
- Support coordinated women-led leadership and intersectional movement-building
- Amplify and integrate feminist leadership to ensure bold, transformative results
- Need for counties to mobilize for action

## **Tourism**

The following interventions should be done to improve the status and benefits women accrue in the tourism sector:

- At national and regional level allocate 40 percent of all tourism spending in Kenya and the Lake Region to benefit disadvantaged groups, particularly women as is done in South Africa.
- Aim for at least 1/3rd representation of women in all levels of position in Community Based Tourism programmes
- Develop Women's Business Association which has a Tourism department that can regularly interact with key stakeholders.

### Education

- Continue to promote girl child education initiatives from primary school to tertiary education by working with government, development partners and NGOs
- Implement gender- sensitive training for teachers and school principals especially covering issues of encouraging girls in sciences, mathematics and technology
- Empower school principals, with a focus on females, to assume leadership roles in addressing female teachers' needs and creating linkages with decision-makers and the community
- Empower science, mathematics and technology teachers to attract and ensure effective participation of girls in science, mathematics and technology

# Health (WHO)

immunization

 Girl Child interventions: Education; nutrition; protection against harmful traditional practices; protection against gender-based violence, child abuse, trafficking and slavery;

- Adolescent girl: Primary and secondary school education; protection against early marriage, exploitation, abuse, sexual violence; establishment of youth centres for girls; adolescentfriendly health care services; encouragement of healthy lifestyles; life-skills and sex education; livelihood skills training; and, if affordable, HPV immunization
- Adult woman in reproductive year: Family planning services; comprehensive abortion care
  services; pregnancy care including in the reproductive antenatal, delivery and postpartum
  care, and care for the new-born; screening and treatment years for STIs including HIV;
  maternity leave protection; protection against domestic violence; female empowerment
  programmes; cancer screening
- Elder women: Healthy nutrition; cancer prevention services (e.g. cervical and breast cancers); protection against gender-related violence; screening for chronic non-communicable diseases; mental health support.

# **Financial Services**

Within the Regional Bank, develop a gender portfolio that delivers financing mechanisms with women and girls in mind. These are (Fletschner, 2011):

- Loans to women to purchase land or houses that require they be registered in women's names
- Loans offered to parents to buy assets for their girls.
- Special loans for businesses that employ women, or for businesses that offer services such as childcare that benefit women
- Allow female clients to choose loan sizes and repayment schedules according to their capacity and requirements
- Offer health insurance to female borrowers including pregnancy and birth-related expenses
- Provide weather insurance to women's agricultural groups
- Improve the availability of information targeted to rural women by supporting efforts to create affordable sources of information and media (a successful example is the Grameen Bank's Village Phone initiative).
- There is need to study and re-package the village Table Banking Systems which currently in predominantly held in rural areas women conduct economic activities. Table banking is a group-based funding strategy in which members form groups where they can save and borrow money immediately during meeting times. The objective of the strategy is to help the poor, particularly women, fight poverty and stay financially sound.

- Identify female role models and leaders in ICT: With a focus of women from the region, the ICT strategy should make a point to profile these women particularly to girls in educational settings
- Engage men and boys: Work with males to make them understand their female relatives
  and friends. When fathers and male peers are aware, engaged and supportive of girls'
  development and their rights, they play a very strong role in changing broader norms and
  perceptions.
- Integrate ICT into education with a focus on girls: Ensure that girls have access to laptops
  in the class room as well as ICT to build media and digital literacy skills. Special care needs
  to be taken to ensure that girls have equal access to equipment.

### 6.2: Youth

## 6.2.1: Youth and Agriculture

Insights in this section are taken from a report done by VSO (2013). Agriculture has largely remained unattractive to young people, men and women, for a variety of reasons:

- Low returns on time and input investment
- Seasonality of incomes
- Lack of education/knowledge on modern farming and marketing approaches.
- Risks due to unpredictable weather and other natural factors such as pests
- Lack of innovations leading to reliance on traditional labour-based production techniques
- Concentration on a narrow range of agricultural commodities mainly staple crops
- Limited access to land among the youth

Further, school curricula have generally tended to alienate the youth from careers in agriculture, and as a result the negative effects of the youth study-to-work transition have been more pronounced in the agricultural sector than in any other sector. Further to many youths, agriculture is an undertaking of the last resort. Most youth consider agricultural work to be for 'those who have not gone to school'. Moreover, many youths who grew up in the villages have an experience of the long hours that go into traditional agriculture without a commensurate return. They may therefore believe their future lies with a different career that is financially more rewarding and can be found in the urban area. As a result, there is paltry involvement of youth in agriculture. This Blueprint will suggest mechanisms that can be used to change this.

## 6.2.2: Youth and Tourism

The main interface youth have with tourism in the country is sex tourism. Boys and girls even are often preyed upon by older foreign tourists. As a result, these young people end up being sexually assaulted numerously. It is imperative that the Lake Region does the following:

• Make it impossible for sex tourism to arise as a product that attract sex talks P a g e

Actively integrate youth into the tourism strategy of the region

## 6.2.3: Youth and Education

FSD International points out that while Kenya implemented the Universal Primary Education, the additional costs such as uniforms and books prevent many children from attending school. Families who can pay for these costs (and forgo the opportunity cost of not having their children work) often cannot afford to pay fees for their children in secondary school. Secondary school, which equips children academically for the next level, is extremely expensive. The root cause of the problem is a drastic decline in education funding and social services by the Kenyan government and international donors.

What is evident is that many Kenyan youths only have a basic level of education, little usable skills, and minimal employment opportunities. The perceived poor education system and subsequent idleness of these adolescents create a combination that frequently leads to drug abuse, early pregnancy, crime and other at-risk behaviour. Like education, a decline in spending on social services has led to minimal care available to children who have been orphaned, leaving them highly vulnerable to exploitation and disease.

It is therefore crucial that the youth lens be applied to all interventions detailed in this Blueprint.

## 6.2.4: Youth and Health

Kenya Demographic and Health Survey (KDHS, 2014) and the Population Census 2019 report show that Kenya has a broad based (pyramid shaped) population structure with 60 percent of the population below 25 years. Similarly, 38 percent of the population is aged between 10-24 years; also, 41 percent of women and 43 percent of men of reproductive age (15-49) are below 25 years of age. Because of their widespread poverty, youths in Kenya have low access to health care. Many youths hardly get the opportunity to acquire life skills. They subsequently get involve in risky behaviours that expose them to conditions that adversely expose them. Sexually active youths are at risk of adverse reproductive health outcomes that subsequently affect their life goals and optimum contribution to national development. Many youths initiate sexual intercourse early, have multiple partners and often do not use protection during sex. General, they are unlikely to seek health services and when they do, they are likely to get inadequate services. The health system has been slow to evolve to accommodate the needs of this age group both from program and service delivery perspectives. Further, low budget allocation in the Ministry of Health budget, limited resources for better programming, inadequate physical infrastructure for provision of services, and inadequate reproductive health (RH) information for youth all affect youth health.

This therefore demonstrates clearly that there is a need for a youth-focused health strategy for the Lake Region.

## 6.2.5: Youth and Financial Services

Currently in Kenya, there is no youth focus in financial services which encourages those under the age of 18 to have bank accounts. Kenya does not appear to promote financial literacy and education among youth. The only financial inclusion they have is with the Mpesa.

However, a report by AudienceScapes (2010) reveals that youth in Kenya between the ages of 24 and 29 are likely to be the sole financial decision makers in their household. Although respondents 15-19 may have less responsibility over financial decision making, their need for information regarding financial services is no less diminished. Educating this age group before they become the head of household is crucial to the well-being of their future dependents and to the empowerment of a new generation of entrepreneurs. Among the youth, word-of-mouth on sources of finance tend to be friends and family members rather than financial experts, such as bankers or financial advisors. This raises the question of whether the word-of- mouth information received by most people is accurate and reliable. According to the study on youth and financial services, the greatest challenge for expanding access to financial services is prejudice of bank staff against the youth as young people are still considered a high-risk market (Storm, 2010). This is despite the fact youth are already economically active. Most youth contribute to household income through work in the informal sector, in household-based enterprises, or in family-based farming, fishing and petty trading activities (Storm 2010).

Therefore, inclusive financial services and financial literacy among the youth can play a critical role in assisting their transition from childhood to adulthood. It will also equip them with the resources and support needed to become productive and economically in their households and communities.

### 6.2.6: Youth and ICT

According to the UN, access to ICTs such as computers, mobile phones and the Internet, especially broadband, remains a challenge for youth in the developing world. In addition, the cost of ICT access (mobile phones and Internet) is much higher as a proportion of per capita income in these particularly disadvantaged countries (UN). For young people, access to information means better access to capital, markets and training needed to pursue a career or studies; increased participation in political processes, and recognition of youth as responsible citizens today. Youth entrepreneurship, which is facilitated by access to technology, the internet and information, is fast being positioned as a solution for youth employment. While the good news is that they are using ICT, the challenge is to inspire them to use it to change their world in a positive way. The Lake Region can help by recognizing and encouraging the accelerated use of information and communication technologies by youth for employment enhancement and in development strategies and frameworks for the future.

There is need to establish Youth Information and Empowerment Centres (YIEC) for Information, Research, Proposals preparation for funding to access enterprise funds and to facilitate and enhance Job searches for the youth.

# 6.2.7: Interventions Targeting the Youth Agriculture

- **Re-brand agriculture**: There is a need to address the deep-seated belief that agriculture and rural areas are for those who cannot make a livelihood anywhere else. Agriculture needs to be rebranded as the new unexplored frontier for growth in business opportunities.
- Develop innovative financial packages: There is need to incentivize entrepreneurs in agriculture by developing financial packages and guarantee schemes that would underwrite the risks involved in such packages. The funds should also be enough for the enterprises of choice
- Encourage youth to use modern technologies both in production and management of agriculture as a business.
- Short Term Training on agriculture for youth
- Affordable loans for youth in agriculture from government
- Provide youth with subsidies on inputs
- Promote enterprises that bring quick money
- Establish more agricultural factories to employ the youth Establish Agricultural demo farms and Agricultural Parks.

### **Tourism**

- Aim for at least 1/3rd representation of youth in all levels of position in Community Based
   Tourism programmes
- Develop a robust anti-sex tourism policy

#### Education

- The county should work with NGOs and others to get support to teach core subjects to
  primary and secondary school students. Subjects include mathematics, business education,
  biology, chemistry, physics, English, music, art and design, history and civics, HIV/AIDS
  education, and geography.
- Provide resources for a care centre for orphaned children (3-4 years of age) that provide nutrition, care, and recreational activities.
- Organize recreational activities for students, such as soccer, netball, basketball, volleyball, music, dance, drama, choir, boy/girl scouts, field trips (to local forests, prisons, and hospitals), farming activities (e.g. gathering crops), and/or horticulture.

- Provide counselling, tutoring, and recreational activities to primary school children who have been orphaned and are at severe risk of dropping out of school.
- Support community youth centre initiatives aimed at providing families with the
  information and tools they need to avoid and remove themselves from common poverty
  traps. Initiatives include educational theatre productions, group discussions with peer
  educators, counselling, and training toward income-generating activities.
- Teach a variety of vocational subjects to children and adolescents, such as carpentry, masonry, tailoring, and basic construction techniques appropriate to the region.
- The National Youth Policy makes the following recommendations that can be applied by County governments (Ministry of Youth Affairs, 2006):
- Advocate affordable and accessible quality primary, secondary and university education
- Identify, support and partner efforts of communities, groups, non-profit organizations, places of worship, especially in technical education;
- Promote exchange of information, knowledge and human resources between the public and private institutions;
- Increase bursary provision for needy students;
- Improve existing training facilities for the youth;
- Establish enough special schools and rehabilitation centres to cater for the youth in special circumstances.
- Promote non-formal education and in-service learning.
- Promote and encourage skills development of the youth through vocational training and imparting life skills;
- Enforce the re-admission policy for girls who drop out of school due to pregnancy;
- Strengthen civic education in schools
- Develop links between training institutions and the employment market to ensure such institutions offer relevant skills
- Protect informal sector innovations by patenting them
- Involve the youth in formulating and reviewing of the education and training policy
- Scrutinize the private training institutions to ensure they meet the required academic and technical standards
- Strengthen family life education in schools
- Create linkages between educational institutions and the private sector through research,
   internship opportunities and financing
- Encourage the private sector to get involved in technical education.

### Health

- Develop Health programs directed at youth
- Foster Parental Involvement
- Increase Adolescent/Youth Access to Services
- In Schools: Curriculum-based interventions especially on sexual and reproductive health, led by adults
- Health services: Interventions with service providers that include making changes either
  to the structure or functioning of the facilities themselves and are linked to interventions
  in the community to promote the health services to young people.
- Mass media: Interventions with messages delivered through radio and other media (e.g. print media); interventions with messages delivered through radio and television and other media (e.g. print media)
- Geographically defined: communities Interventions targeting youths using existing youthservice organizations
- Facility based programs that also have outreach and provide information and services

### **Financial Services**

- Involve youth in market research and product development
- Develop products and services that reflect the diversity of youth
- Ensure that youth have safe and supportive spaces
- Link youth to complementary non-financial services

## ICT

- Regional public service content should be available online
- The Lake Region should create an investment climate that allows private companies to serve the growing demand for ICT services
- Integrate ICT into education and training
- Provide Wi-Fi access in CBDs of all the major towns in each county
- Make it easier to access the internet: This will increase youth access as well as youth setting
  up internet cafés
- Teach young people to be safe and responsible users of this new technology, protecting them from some of the risks of unfettered access,
- Catalyse the economic empowerment and job creation for youth through ICT: Youth work
  in business process outsourcing (BPO) as customer care agents, data entry clerks,
  transcribers and online researcher; or as cybercafé attendants and mobile phone and
  computer technicians.

## 6.3: Persons with Disability (PWDS)

Persons living with a disability constitute about 2.2 percent of the Kenyan population (Kenya Population Census, 2019), 80 percent of who live under very poor conditions in rural areas, in slums and informal settlements at the edge of towns (Grut, 2006). Disability can be defined as a physical, sensory, mental or other impairment, including any visual, hearing, learning, or physical incapability, which impacts adversely on social, economic or environmental participation of an individual (Ouku). People with disabilities have been denied justice through lack of interpreters in courts of law, access to social amenities (wheelchairs, specially designed bathrooms, hearing aids etc.) buildings, transportation, job and educational opportunities (Chomba, 2014). They have little or no access to education health, employment, and rehabilitation. In addition, this segment of society has been marginalized during distribution of resources because they are more of a liability than asset (Chomba, 2014).

# 6.3.1: Persons with Disability and Agriculture

According to the Leonard Cheshire Foundation, people with disabilities in Kenya face several challenges when it comes to agriculture:

- Lack of knowledge: Persons with disabilities may have received little or no instruction or support in agricultural activities.
- Environmental barriers: Without adaptations, some impairments may limit ability to
  undertake some agricultural techniques; however, adaptations can cost time, energy or
  money that individuals with disabilities or members of their household are unwilling or
  unable to provide.
- Access to land: Growing space, land tenure and money to cover initial project costs such
  as tools and seeds, may be limited, and agriculture extension activities or microcredit
  schemes may be reluctant to include persons with disabilities.
- Social and cultural stigma: Prejudice against persons with disabilities may limit their ability to sell produce or food.

There is a clear need for the Lake Region to consciously incorporate PWDs into the agriculture strategy.

## 6.3.2: Persons with Disability and Tourism

No information could be found on the status of PWDs in tourism in Kenya.

## 6.3.3: Persons with Disability and Education

Children with disabilities are less likely to go to school than able bodied children. Grut, (2007) points out that the lack of education for a PWDs is not only a question of being able to afford, it also looks at accessibility and suitability of the school itself (Grut, 2007). Most schools have not - 112 - | P a g e

attempted to make the classrooms accessible for children with physical impairments or on wheelchairs. The transport to and from by public buses or simply by walking along the road is prohibitive. Often children do not go to school because the child is not able to walk that far and there is no possibility for transport. Ordinary schools have huge classes and the teachers are rarely qualified to deal with the special needs of a disabled child. Supplies of adapted teaching materials or equipment in the ordinary schools are also lacking. If a disabled child needs assistance during the day in a normal school, fellow students help him or her to tackle the issue, if they refuse, the child is left on its stranded. Further, in the school setting, students with disability are picked on by non-disabled students. Lack of education for poor families and their children with disabilities lead to reduced self-confidence and gives less knowledge of where to go for help. Children with disabilities have no money to buy a radio to listen to informative programmes and fewer opportunities to utilize the help that is offered in places such as special schools and special classes.

# 6.3.4: Persons with Disability and Health

The study further reveals disability is caused through many factors. These factors include genetics, congenital, complications in pregnancy or during birth, illness later in life, accidents or environmental conditions (Grut, 2007).

In terms of access to health services, PWDs have limited access to health care often due to issues such as the lack of money. Furthermore, if they manage to get to the hospital, they are not guaranteed to see a doctor as they often must-see specialists who are few and far between. Health care facilities often lack enough personnel to address the needs of PWDs and children with treatable conditions are not treated because of lack of both knowledge and equipment. Health services for PWDs in the rural areas depend entirely on foreign medical personnel who visit on an irregular basis. Further, there is lack of assistive devices, particularly in individually adapted devices (Grut, 2007). Families with mentally disabled children do not receive counselling on how to deal with the child's behaviour constructively. For women with disabilities, sexual abuse and harassment is a serious concern as they are easy targets.

It is crucial that the Lake Region ensure there are health services and facilities that speak to the needs of PWDs.

## 6.3.5: Persons with Disability and Financial Services

Handicap International makes the point that with regards to PWDs and financial services there are two main types of barriers (HI, 2006):

 Internal barriers: Such as lack of business skills, lack of formal education, or lack of selfconfidence  External barriers: Such as inadequate financial product design or attitudinal barriers (stigmas and prejudices). In Kenya micro-finance PWD applicants are told that disabled applicants cannot loans because they are not thought to be unable to pay back.

It is important the Regional Bank has financial products that specifically cater to PWDs.

## 6.3.6: Persons with Disability and ICT

The Communications Council of Kenya lists the following as challenges related to PWDs and ICT (CCK, 2012):

- Lack of awareness about various disabilities and their special requirements
- Low levels of literacy (Education)
- High Costs of adaptive ICT hardware and software coupled with financial constraints by PWD's
- Lack of ICT training specific to PWD.
- Inadequate research data and information
- Lack of Awareness of Adaptive ICTs among ICT Service Providers and PWD's
- Absence of clear intervention strategies at all levels (Government, Stakeholders)
- Lack of access of ICT infrastructure in rural areas
- Lack of awareness and use of accessibility standards in the design of ICT products, services
  and information dissemination tools e.g. Websites and other communication products and
  services.
- Many PWD learners have a linguistic challenge in the use of available adaptive software.

The Lake Region ICT strategy must have interventions in ICT targeted at PWDs.

# 6.3.7: Interventions Targeting People with Disabilities Agriculture

The following should be implemented in all counties of the Lake Region:

- The inclusion of disabilities in general agricultural policies
- Awareness raising around persons with disabilities' capacity to participate in agricultural activities
- Knowledge of agriculture: Persons with disabilities must be included in programmes available to the general community that provide knowledge and experience of both growing plants and rearing animals, and repairing garden produce for consumption or for the market
- Disability specific adaptations: Low- cost adaptations such as waist high sack gardens and keyhole gardens, often allow persons with disabilities to be more prophytive a g e

 Access to resources: Provide access to a range of often low-cost resources including information, seeds and young animals, tools and land. Also, of importance is access to micro-credit and business development opportunities

### **Tourism**

- Aim for representation of PWDs in all levels of position in Community Based Tourism programmes
- Make Tourist Sites accessible to PWDs

### Education

The following is recommended for the Lake Region with regards to enhanced access to PWDs (Kanyingi, 2012):

- Learning institutions should consider the special needs of persons with disabilities with respect to the entry requirements, pass marks, curriculum, examinations, auxiliary services, use of school facilities, class schedules, physical education requirements and other similar considerations.
- More special schools and institutions, especially for the deaf, the blind and the mentally retarded, should be established to cater for formal education, skills development and selfreliance.
- Make educational institutions accessible to PWDs, with the provision of transport to and from schools.
- Counties should work together to create an integrated system of special and non-formal
  education for persons with all forms of disabilities and the establishment where possible
  of Braille and recorded libraries for persons with visual disabilities.

### Health

The Lake Region can learn from work done in South Africa by CBM and implement the following to improve PWD access to health services (CBM):

### **Awareness**

- Identify the number of people with a disability within the community. This information can be gathered, for example, through meeting local people with a disability, census data, household surveys and facilities for inclusive education.
- Provide information regarding disability to health professionals to ensure there is up-todate knowledge on prevalence and impact of disability.
- Use people with a disability in awareness-raising activities.
- Highlight the role played by the health sector in preventing impairment.

- Encourage awareness-raising efforts by disability service providers and Disabled Peoples Organisations (DPOs) with their local health providers.
- Advocate for the inclusion of disability within broader health policies, strategies, programs and monitoring mechanisms.
- Ensure billboards, posters or other health promotion information depicts people with a disability as part of the general population.

# **Participation**

- Build relationships with people with a disability and DPOs to gain their active participation
  within the program.
- Ensure direct consultation with people with a disability for identification of their healthrelated barriers.
- Allocate a budget to cover travel and participation expenses along with attendance time for people with a disability and DPOs to actively be involved in consultations.
- Employ someone with a disability within the health service to ensure active participation and representation within the program.
- Promote people with a disability as health care workers to demonstrate their skills and capacity along with improving representation of service recipients.
- Develop strong linkages between health and disability stakeholders. Improve physical access to health services including hospitals, community health services and outreach clinics.
- Build capacity of health care workers in communicating with people with a disability.
- Build capacity of health services in order to meet the basic health requirements of early identification and diagnosis of impairment, with appropriate referrals to specialist medical and disability services.
- Address financial barriers to health services for people with a disability, embedding disability related funding strategies within policies.
- Pay attention to women and girls with a disability as they are often severely marginalized, experiencing numerous challenges, including sexual and physical violence.
- Sexual reproductive health programs should be particularly aware and inclusive of the requirements of women with a disability.
- National health plans and strategies, or vertical health programs, may not have considered
  the specific needs of vulnerable groups. Work towards greater inclusion of a disability
  perspective in all future.

- Address attitudes to improve participation of people with a disability.
- Use people with a disability and engage DPOs for capacity development activities around attitude, access and rights.

Table 27: Employ a Twin Track Strategy

Mainstream	Disability specific
Promote disability inclusion in health programs. Support initiatives that strengthen disability and specialist medical services. Facilitate access to all disability and specialist medical services including the cost of assistive devices or medication.	Work closely with local disability organisations to promote health services through their networks.  Promote the active engagement of people with a disability and DPOs in advocacy efforts with their local health service providers.
Ensure all data collected during programs can be disaggregated by disability, age and gender.	
Adopt universal design principles for all health services. Ensure health facilities are built with accessible features, including ramps, widened doorways, accessible toilets, appropriate signage and adjustable height beds which will be useful for a range of purposes.	
Advocate for the inclusion of disability within broader health policy, programs and monitoring mechanisms.	Map all specialist medical and disability services, including referral processes, and disseminate widely in varied formats.
Support initiatives that build disability inclusion into the health training curricula. Engage people with a disability in training efforts.	Promote the early identification of disability in childhood and establish appropriate referrals to disability services.
Depict people with a disability as members of the general population in health education and health promotion messages.	Support development and dissemination of clinical guidelines for commonly occurring impairment types.

# **Financial Services**

In terms of increasing access to Financial Services to

PWDs, Handicap International suggests:

- Inclusion in the Regional Bank through a variety of schemes, including raising awareness
  among microfinance staff, establishing partnerships for cooperation, adapting
  methodologies, or simply by supporting people with disabilities to submit their loan
  applications.
- Provision of financial services by organisations of/ for people with disabilities themselves.
  However, this approach requires strong capacity building to enable organisations of/for
  people with disabilities to manage complex financial programmes. It also requires longterm donor commitment, since low or non-existent interest fees do not cover operational
  and financial costs.

### **ICT**

The CCK has a robust programme for strengthening PWD's access to ICTs. The Lake Region should work with CCK to implement the following in each county and enhance PWD access to:

- Communication Services (Mobile and Fixed Line, Internet)
- Information (libraries and tele-care centres)
- Broadcasting services and Equipment
- Postal and Courier Services
- Websites
- ICT education,
- Financial information and services and;
- Role and Importance of research and accessibility standards

## 6.4: The Environment

# 6.4.1: The Environment and Agriculture

FSD International points out that environmental sustainability is an increasingly important issue in development, as those living below the poverty line directly rely on the water and land resources surrounding their communities. With only 8 percent of arable land and 75 percent of Kenya's workforce engaged in agriculture, Kenyan farmers face growing problems of soil erosion, deforestation, water pollution, and desertification. The drought in 2006—the most severe in independent Kenya's history—devastated the country, leaving 3.5 million people with barely enough food to survive (FSD 2012).

While global warming may be responsible for Kenya's severe droughts, current farming practices are also leading to the growth of environmental problems. Rampant pesticide use contaminates water resources while food production has declined due to soil erosion. Weaning farmers off unsustainable methods is a difficult task in any circumstance, much less during times of economic desperation. Farming and daily life are also complicated by sharing the land with abundant wildlife.

Wildlife is integral to the ecosystem and securing the conservation of native flora and fauna is critical to the region's future on a few levels (FSD 2012).

### 6.4.2: The Environment and Tourism

The tourism products in the Lake Region are predominantly nature-based. Counties therefore need to consider what impact tourism can have on the environment if unmanaged, as has been the case in other tourist sites in Kenya. A study by KIPPRA indicates that environmental degradation and deterioration has negatively affected the quality of tourism products in Kenya (Ikiara, 2002). Whilst there is growing recognition that tourism does have some negative impacts on the environment, there is little empirical evidence on the subject. The researchers found that (Ikiara, 2002):

- Despite the country's policy advocating spatial distribution of tourists in the country, tourism marketing has continued to focus on the traditional attractions, thereby perpetuating concentration
- Impacts are most severe in crowded attractions beaches have been polluted, coral reefs
  destroyed, marine species adversely affected and vegetation degraded
- Environmental regulations are either ignored or not effectively implemented
- Mitigation efforts are constrained by weak institutions, corruption, mismanagement, inadequate political and administrative capacity

These issues can easily be repeated in the Lake Region is there is no strategy to ensure the natural resources on which tourism is based are use sustainably.

### 6.4.3: The Environment and Education

This pertains to educational activities that pertain to the environment. Speaking during participatory engagement, a fellow by the name Otieno points out that in Kenya, Environmental Education (EE) in its traditional forms is limited in meeting the immense challenges posed by unsustainable patterns of development and unsustainable life-styles. New educational approaches are required to motivate people to act upon awareness to achieve the necessary changes of life-styles. The Kenyan population needs to be sensitized on the importance of using available natural resources sustainably to cater to present and future generations. EE requires policies, legislation and regulations to be enforced to ensure economic production processes based on respect for natural and cultural capital resources.

## 6.4.4: The Environment and Health

Another participant known as Mbogoh said poor environment undermines the internal capacity of the human body to fight off disease and harbours communicable disease agents and vectors (Mbogoh,). Pollution may directly compromise human health through poisoning or tainting the food chain. Poor environmental management on the other hand exacerbates negative health impacts such as disease outbreaks and pollution while natural disasters such as floods and droughts - 119 - | P a g e

and significantly multiply the cost of healthcare. Degraded environments place heavy strains on the environment's ability to meet medicine, food, safe water, clean air and energy needs which are central to good health. The risks resulting from natural factors such as floods include pollution of drinking water which leads to proliferation of disease vectors and disease outbreaks such as cholera.

Drought causes extreme water scarcity for both rural and urban households with devastating health impacts. Poor human waste disposal is another factor that contaminates the environment and breeds diseases. Further, anthropogenic activities such as outdoor and indoor air pollution, chemical pollution, environmental degradation and marine pollution affect both rural and urban settings.

High population growth and fertility rates, coupled with the fact that the country is rapidly urbanizing exert enormous pressure on natural resources and the urban infrastructure in terms of health services, housing, sanitation, education, water services, transport, and waste management. Consequently, serious collateral environmental damage in terms of over-exploitation of resources, pollution, unsustainable consumption and production patterns are led to waste accumulation and ecosystem degradation.

The Lake Region is affected by environmental-related disease and it is important that interventions are stipulated to address this issue.

# 6.4.5: Interventions focused on the Environment Agriculture

The Kenya Government has developed guidelines to integrate environmental concerns into agriculture development projects in relation to management of rangelands, forests, water quality, wildlife and conservation of genetic resource. These are recommendations that the Lake Region should integrate in agricultural policies:

- Establishment of early warning system to monitor the weather conditions and advice farmers appropriately
- Inspection and quality control of farm inputs
- Improved agricultural technology development and transfer system through participatory extension, private sector participation and farmer training
- Ensuring a functional early warning system in all drought prone districts and monitoring to include NGOs and local communities
- Inspection and quality control of farm inputs through improved legislation and empowerment of farmers' associations
- Control of crop and livestock pests and diseases

Sustainable tourism should be enshrined in the Tourism strategy of the region through the following interventions:

- Providing incentives to encourage industry initiatives aimed at protecting the environment
- Setting up a framework for information exchange and for environmental awareness creation of all stakeholders in the tourism industry
- Marketing of 'green' tourism products
- Promoting activities that create awareness of the need to conserve biodiversity
- Enhancing tourism enterprises that promote sustainable use of biodiversity resources
- Supporting interventions that reduce conflicts between people and biodiversity conservation

#### Education

The following is an outline of the type of interventions that can be taken by all counties in the Lake Region on Environmental Education (Otieno):

- Raise the level of environmental awareness
- Promote the co-ordination of EE activities
- Recognize the special relationships that local communities have with the environment and ensure that their perspectives are represented in EE initiatives.
- Enhance and support the integration of EE into all learning programmes, projects and initiatives.
- Develop partnerships between stakeholders, including the private sector, to promote and increase the level and quality of EE
- Promote technical cooperation, networking and information sharing
- Provide Lake Region citizens with a framework within which to develop effective EE programmes.

### Health

The World Health Organisation (WHO) recommends the following be done to reduce environment-related disease burden (WHO, 2005):

- Conduct a baseline survey on environmental health issues, health status and knowledge of personal and environmental hygiene
- Promote personal and environmental hygiene in schools and communities.
- Promote safe drinking water in homes and schools.
- Support environmental health improvements in targeted schools and communities

### 7.0: KEY RISKS AND MITIGATION STRATEGIES

There are key risks that must be addressed for coordinated regional development to occur.

## Unstable Political Leadership

There's a chance that counties and their leadership structures won't share a vision for regional vision, causing the endeavour to devolve into a competition. Furthermore, even within a single county, political actors may not be on the same page, have competing objectives, or want to sow failure in Blueprint participation for political gain. This is especially true in the case of the eight county governors of Busia, Kakamega, Siaya, Kisii, Homa Bay, Migori, Kericho, and Trans Nzoia, who are serving their second mandates and will leave office in 2022. Because the next general election will be essential to LREB's future, it will be necessary to create agreement within and between counties beginning in 2022 in order to carry the reorganisation forward.

There appears to be inherent undercurrents that LREB is in competition with her own member Counties, when in actual sense, LREB is a net provider of a platform for development interventions in virtually all sectors of the economy nor does she audits the members Counties. It provides a one stop shop for potential investors in the region.

### **Tension with Devolution**

While some of the sectors targeted for investment in this Economic Blueprint are largely devolved, some are not. Health has been devolved, but has faced serious challenges due to resource constraints as well as governance issues. The constant threat of strikes by health workers and Covid-19 epidemic have impacted negatively on the sector. Agriculture and infrastructure have not been fully devolved and therefore their development will depend on the national framework. So, while their great potential for development unleashed by devolution, there is a risk of County and National Development Plan creating conflicting priorities and creating a culture of confusion and unclear visions. It is therefore important that the counties liaise with structure such as the Lake Basin Development Authority. There is a need to either use the LBDA or LREB Secretariat to coordinate the synchronizing various county CIDPs to identify cross county projects for developing PPP projects of significant economic investments.

## Poor Financial Management

A core component of making the Blueprint work is the pooling of financial resources by the various counties while implementing the Blueprint within a legal and institutional framework. The creation of a Regional Bank is the institution through which the finances will pass and it is therefore crucial that the management of the Bank is competent, corruption-free and transpagement. If there is

a feeling that certain Counties are hogging the management and direction of the bank this will sour the unity of the Region and the capacity to implement the Blueprint. It is therefore imperative that a clear leadership structure of the Regional Bank be agreed upon by all counties.

#### **Tribal Tensions**

Ethnic conflict and tribal tensions are on-going features of the Kenyan socio-political landscape. This initiative brings together different tribal groups, and they do not necessarily have a shared political vision. If a perception of tribal favouritism arises it will render the initiative divisive and impotent. The boundary issues between Kisumu and Vihiga on Maseno has been simmering same as Nandi County and Kisumu. Therefore, there is an urgent need for the constant awareness of regional and tribal dynamics and the management of the same in a manner that is equitable and fair

#### 8.0: REVIEW OF LREB FLAG SHIP PROJECTS

#### Overview

The Lake Region Economic Bloc (LREB) comprising the County governments of Bomet, Bungoma, Busia, Homa Bay, Kakamega, Kericho, Kisii, Kisumu, Migori, Nandi, Nyamira, Siaya, Trans Nzoia and Vihiga, was established in 2015 as an economic bloc and brought into inception on 26<sup>th</sup> March 2018 to enable the Counties leverage on economies of scale, and facilitate the development, management and utilization of cross boundary economic resources and infrastructure.

The Lake Region Economic Bloc blue print and strategic plan identify four thematic areas which entails infrastructure development; wealth creation; social services; and institutional capacity building. The thematic areas inform the creation of 10 key pillars.

Productive sectors: Agriculture, Tourism, Trade and Industrialization

Social Sectors: Education, Health, Water, Environment & Climate Change, Gender, People living with Disabilities, Youth and the Minorities.

**Enablers:** Information and Communication Technologies, Financial Services, Infrastructure.

### Agriculture Pillar

The Agriculture Pillar is fully operationalized under the leadership of **Busia and Nyamira Counties** and has identified the development and promotion of the Cotton, Dairy, Sugar, Fish, Coffee Avocado and Bananas value chains as key to helping her unlock the region's agricultural potential and meeting its strategic objectives.

The value chains list is as per the table hereunder. The bolded county name is the lead county for the corresponding value chain.

S/N	VALUE CHAINS	COUNTIES		
1.	Cotton	Homabay, Bungoma, Busia, Kisumu, Migori, Siaya.		
2.	Dairy	Vihiga, Nyamira, Bungoma, Kisii, Nandi, Bomet, Trans Nzoia, Kericho,		
3.	Sugar Cane	Kakamega, Kisumu, Bungoma, Homabay, Bomet, Migori		
4.	Fish	Kisumu, Siaya, Kisii, Busia, Vihiga, Homabay, Nyamira		
5.	Coffee	Bungoma, Kakamega, Trans Nzoia, Nyamira, Kisii, Kericho		
6.	Avocado	Busia, Siaya, Kisii, Nyamira, Vihiga, Trans Nzoia		
7.	Banana	Kisii, Nyamira, Busia, Vihiga, Trans Nzoia		
8.	Poultry	Bungoma, Bomet, Busia, Homabay, Kakamega, Kath, Kisii, Kisumu, Migori, Nandi, Nyamira, Siaya, Trans Nzoia, Vihiga		
9.	African Leafy Vegetables	Nyamira, Kisii, Bungoma, Kisumu, Vihiga		
10.	Sorghum	Siaya Homabay, Bungoma, Busia, Kisumu, Migori.		
11.	Sweet Potatoes	Homabay, Migori, Bungoma, Siaya, Kakamega, Busia, Nyamira, Kisumu, Kericho.		

Table 28: Prospective Value Chains under Agriculture Pillar

In 2019, The Chinese Government expressed great interest in working with the Lake RegionEconomic Bloc (LREB). The Government through their embassy paid LREB secretariat offices two visits. From the consultative meetings thereof, the Embassy agreed to partner with the bloc in two main areas in the Agriculture Pillar:

# Human Resource Development

The Peoples' Republic of China offered several short course training opportunities in the year under review to LREB Counties' Staff Members. A good number of redeployed employees of **member counties** have undergone the trainings at the Republic of China and also throughthe online platform. This process was halted by Covid-19 pandemic.

## Agricultural Development

The embassy expressed interest to immediately start off with four projects for the Agriculture Pillar in LREB counties.

- i. Modern Agricultural Park
- ii. Model Farm Demonstration
- iii. Tea Demonstration Centre
- iv. Green Tea Processing Factory

## Flagship Projects

From the blue print, the pillar has identified the following flagship projects:

- 1. Cotton, textile and apparels revival BT Cotton Launch at Alupe in Busia in 2020
- 2. Sugar industry revival Join Ministerial and LREB review report presented to H.E. The President on 24<sup>th</sup> Feb 2020 now awaiting implementation.
- 3. Creation of a Commodities Exchange
- 4. Skills development and training on improved farm management
- 5. High Value Crop Farming: Particularly soya beans, sorghum, floriculture and horticulture
- 6. Fish farming
- 7. Large Scale Irrigation-Counties with high potential for large-scale irrigation schemes are areas with underutilized yield of high value crops, including Siaya, Migori, Busia, and Bungoma.
- 8. Agro Processing and Value Addition

### Water, Environment and Climate Change Pillar

The Water, Environment and Climate Change Pillar (WECC) is fully operationalized under the leadership of **Bomet** and **Nyamira** Counties

# Progress Report on the Lake Region Climate Change Governance Project for the Six LREB Counties

This is a flagship project for the Water, Environment and Climate Change Pillar. The projectwhich felt under the *Building effective, accountable mechanism for climate resilience in Kenya* and was implemented by the Ada Consortium came to an end in September, 2020.

The project involved putting in place the following mechanisms:

- i. County climate change fund
- ii. Climate change planning committees

- iii. Climate information services and participatory planning committees
- iv. Monitoring and Evaluation of resilience building.

Because of limited resources, the project chose to pilot with following six counties; (Bomet, Kakamega, Kisii, Kisumu, Nandi, Vihiga). Migori, Trans Nzoia and Siaya counties are being supported by other development partners. Other partners are being approached to also help the remaining counties (Bungoma, Homa Bay, Busia, Kericho and Nyamira) in putting in place the mechanisms.

Select members from **Nyamira** County's Environment department have undergone training in Climate Change Governance

# **Education Pillar Status Report**

The Education Pillar is fully operationalized under the leadership of **Siaya and Bomet** Counties.

The pillar identifies its flagship projects as:

- a) Establishing LREB-University partnership
- b) 'Adopt A school Initiative' to curb the rapid spread of corona virus in the community
- c) Up-scaling the Smart Start Siaya Model of nurturing care in the Early ChildhoodDevelopment Centres across the 13 counties.
- d) Setting up a Data statistical unit in partnership with Maseno University

### LREB University Partnership

### Deliverables for the LREB-University Partnership Project

- a) Enhanced technical capacities of LREB Counties and development partners to sustain regular production and service delivery in priority set of areas of need
- b) An established consultancy agency where possible to LREB Counties with regard to the LREB Counties pillars with the expertise drawn from the partnering universities and development partners.
- c) Improved institutional and regulatory frameworks that foster sustainable research and innovation for economic and social development in the county.

It is important to note that only **Nyamira** and Trans Nzoia counties lack universities or university colleges. These counties can however partner with the research centers that align with their interests.

NO.	PILLAR	RESEARCH CENTRE	COUNTY	INSTITUTION
1.	Healthcare	Public Health	Kisumu	Maseno University
2.	Healthcare	Community Health	Nandi	UniversityE <b>xt</b> n Baraton ofAfrica,
3.	Healthcare	Medical Laboratory	Busia	Alupe University
4.	Healthcare	Disaster Management in Public Health		Uzima University
5.	ICT	ICT and Engineering	Bungoma	Kibabii University
6.	ICT	GIS and Sensing Remote	Vihiga	Kaimosi Friends University College
7.	Agriculture	Agriculture Security and Food	Migori	Rongo University
8.	Financial Services	Finance and Economics	Kisii	Kisii University
9.	Water, Environment and Climate Change	Water, Environment and Climate Change	Kericho	University of Kabianga
10.	Infrastructure and Maritime Transport	Infrastructure and Maritime Transport	Kakamega	Masinde Muliro University of Science and Technology
11.	Trade and Industrialization	Trade and Industrialization	Bungoma	Kibabii University
12.	Gender, DAPs and Youth	Gender, DAPs and Youth	Siaya	Jaramogi Oginga Odinga University of Science and Technology
13.	Education	Education	Siaya	Jaramogi Oginga Odinga University of Science and Technology

Table 29: LREB University Partnership

# Adopt A School Initiative

Adopt a school is one of the innovative initiatives aimed at curbing the spread of Covid-19 through our schools in the Lake Region Economic Bloc

# The Milestones for Adopt a school

- i. Launching an Advisory Committee
- ii. Establishing a subcommittee for Adopt a School

- iii. Mapping of schools in the lake region
- iv. Establishing a need analysis toolkit for the schools to be adopted
- v. Creation of an information development management system to easecommunication within the region for adopters
- vi. Launching of Adopt a school initiative
- vii. Identifying and registration of adopters

An exemplary approach has been adopted by Siaya **County by** establishing a committee to 'adopt a school' initiative. **Nyamira County** has held a meeting with representatives of the Siaya Government for experience sharing and recommendations were made on the way forward.

# Health Pillar Progress Report

The Health Pillar is fully operationalized under the leadership of **Kisii** and **Kericho** Counties. The Pillar is currently running programs related to the management of Covid-19.

# The LREB Committee of Eminent Persons Covid 19 Advisory, Prevention, Control and Socio-Economic Recovery

The committee is currently running two projects:

## Adopt A School Initiative

The main objective of this initiative is to stop the spread and mitigate the negative effects of Covid-19 in schools through behavioral change advocacy to adjust to the "new normal" in the society. So far, the uptake of these initiatives by volunteers in the various counties has been positive and the LREB counties embraced this idea.

This initiative is multi-sectoral and long-term projects that will help the lake region recoverfrom the effects of COVID 19.

# Assessment of Level of Preparedness in Management of COVID-19

The committee commissioned the assessment of the 14 Member counties. The detailed report will be shared with the Governors and the line organizations and institutions in a week's time.

#### ICT Pillar

The ICT Pillar is fully operationalized under the leadership of **Vihiga** and **Homa Bay** Counties with the following objectives;

- i. Overall capital deepening and helping to increase labour productivity.
- ii. Faster multifactor productivity growth in the ICT driven business.
- iii. Greater use of ICT by bloc members to increase efficiency in services.

The pillar is currently working with Maseno University to develop a regional data center.

#### Tourism Pillar

The Tourism Pillar is fully operationalized under the leadership of **Kisumu and HomaBay** Counties with the following proposed activities;

- i. Development of the LREB Tourism Circuit.
- ii. Diaspora Harvest Festival.

The pillar is engaging with Kenya Tourism Board and Regional Hoteliers and Tour Operators towards progressing the identified activities.

A Memorandum of Understanding between LREB Tourism Pillar and Lake Victoria Tourism Association (LVTA) Kenya has been signed. Lake Victoria Tourism Association Kenya (LVTA-K) is a membership organization filled with hospitality businesses, and are interested in societal issues in both domestic and international tourism/hospitalityas well as social and economic policies. It is important to note that Nyamira Countyis not represented.

#### Finance Pillar

#### County Status on Submission of the First Quarter 2020

There is need for the counties of LREB to submit money to the LREB kitty to enable the operationalization of the LREB secretariat activities. Nyamira County is among the counties yet to financially support the Secretariat as agreed in the Council and Summit meetings.

#### Gender, PWDs, Youth and Minorities Pillar

The Gender Pillar is fully operationalized under the leadership of Kericho and Nandi Counties with the main objective of mainstreaming gender, youth and people living with disabilities across all pillars.

Currently the pillar is looking at forming the LREB Women SACCO and has

brought on board all the first ladies and CECMs in charge of Gender to the process.

#### Trade and Industrialization

The Trade Pillar is fully operationalized under the leadership of Nandi and Kisii Counties and is currently working on actualizing its proposed activities.

#### Infrastructure

The infrastructure Pillar is fully operationalized under the leadership of Bungoma and Migori Counties

The priority flagship project in the LREB Infrastructure Pillar was the revival of maritime transport and associated services in Lake Victoria that were once vibrant, with Kenyan activities anchored at the Port of Kisumu. The project "Maritime Transport and Associated Services in Lake Victoria, Kenya", was developed by LREB and later elicited immense interest from many stakeholders, and was finally taken up and implementation commenced in earnest with some project components already completed.

The Bloc is currently working on accelerating the establishment of the cargo division and cold chain logistics at the Kisumu International Airport. This will open doors of opportunities to farmers of the region looking at exporting their products to international markets.

#### 9.0: CONCLUSION

This Economic Blueprint presents a strategy that can be used to meet the objective of the creation of a regional bloc and leverage economies of scale in the region, including shared resources, in order to improve the livelihoods of the people in the 14 counties of the Lake Region. The Productive Sectors provide a solid foundation on which the economy of the region can be strengthened while the Social Sectors ensure that the human capital of the region is invested in through Education and Health interventions. Including the Enabling Sectors of ICT, Financial Services and Infrastructure identify catalysts for the development of the Region in a specified manner to ensure the focused application of capital and human resources to the development of the region. The Cross-Cutting Themes—give voice to traditionally marginalized demographic groups and concerns in a manner that guarantees that their inclusion in the implementation of the Blueprint to ensure the improvement in the quality of life for all.

As mentioned, the Lake Region Economic Blueprint aligns with the national development plans of Vision 2030, the Medium-Term Plan II for 2013-2017 and the Third Term Medium Plan 2018-2023, as well as the County Integrated Development Plans for each county. The Economic Blueprint will be implemented through ministerial committees led by the counties with a specified county chairing the implementation of a given sector. The counties will also each have committees implementing activities of each of the sectors in their county.

The Lake Region and Kenya is endowed with requisite human resource expertise who will be used to support the Lake Region Economic Blueprint Project through support from development partners and assistance for experts in the various sectors to the ministerial committees.

Going forward, the clearance of the bottlenecks surrounding the process of legal framework to finally anchor the formation of Regional Blocs in the Republic of Kenya remains the key to all Regional Blocs, including LREB succeeding, notwithstanding, the provision of table leaderships.

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