



Machakos County



Makueni County Spatial Plan

2019 - 2029

Kitui Co

EMALI

KIBWEZI

MASONGALENI

KAMBU

MTITO ANDEI

Kitanguni
Tsavo West National park

Taveta Co



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A blueprint for, "optimal and sustainable utilization of Makueni County Land and Territorial Space to achieve a gigh quality of life for every household"

GOVERNMENT OF MAKUENI COUNTY

MAKUENI COUNTY SPATIAL PLAN
(2019-2029)

2019, Government of Makueni County

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Certifications & Approvals

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This plan is prepared with my professional guidance as a Registered Physical Planner under commission from the Government of Makueni County, and as provided for in the Physical Planning Act and the Physical Planning (Development Plans) Regulations, 1998, and having met the requirement of Section 21 of the Physical Planners Registration Act.

Plan. Dr. Lawrence Esho (RPP.0056)
Registered Physical Planner and Lead Consultant

Date

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I certify that this plan has been prepared in accordance with procedural and substantive provisions of the relevant planning statutes and in observance of all requisite procedures and standards.

Plan. Bii Kenneth Ngeny (RPP.0160)
(Registered Physical Planner and County Director of Physical Planning)

Date

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This plan is developed by the County Executive Committee pursuant to Section 110(3) of the County Governments Act and is hereby adopted and recommended for approval by the County Assembly of Makueni.

Hon. Julius Kaloi (CECM! Mining, Hosing Physical Planning & Urban Development)

Minute Number Date

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Pursuant to the legislative authority granted in Article 185(4) of the Constitution of Kenya and function designated in Section 8(1)e of the County Governments Act, the Makueni County Assembly hereby approves of this plan.

Clerk to County Assembly of Makueni

Hansard Number: Date

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The County endorses this plan, as approved, and commits its effort and resources towards the realization of envisaged outcomes, and for the benefit of the People of Makueni County.

H.E. Prof. Kivutha Kibwana (Governor, Makueni County)

Date

There is an impression out there that portrays Makueni as a resource-poor County, placed in the arid and semi-arid category, alongside other neighbouring eastern-Kenya counties. It is true that the County is situated in a region which, relative to Kenya's other regions, is not favoured with the most ideal of climates. This notwithstanding, Makueni County is well endowed with natural, structural and human assets which, if delineated and valorized, are more than adequate to propel the County and its peoples to new heights. Since being established under the Kenya Constitution 2010, my government has dedicated itself to several initiatives aimed at doing just that.

The preparation of the Makueni County Spatial Plan is part of a concerted undertaking by my government to evaluate the County's physical, infrastructural and human resources. The aim is to establish their asset values and potentials and consider inherent weaknesses that may limit possibilities for their exploitation in aid of ongoing development pursuits. The plan also examines the County's territorial positioning and connectivity within and beyond Kenya and considers how these serve to enhance or inhibit the County's competitiveness. The analysis is geared towards informing a subsequent discussion that seeks to enlist the County's resources in an ongoing quest for a progressive and uplifting development.

The results of this assessment serve to demonstrate that Makueni is indeed well-endowed with natural resources. The County's unique territorial space, with its varied landforms, the associated geological profile and climate regime, make it possible for the County's peoples to engage in a great diversity of activities. The complementarities created by differentiated sub-regions builds resilience into Makueni's resource-dependent and driven pursuit for development. The County's mineral-rich sub-stratum and fertile soil overlay are the foundation of thriving and lucrative mining and agricultural sectors.

My government seeks to valorize these same assets of place, the possibilities they portend, coupled with the ingenuity and doggedness of Makueni's peoples as embodied in the characterization of trader, craftsman and bench-maker, and deploy these in a dedicated and unified pursuit of a sustainable and beneficial development. It is incumbent upon my government to provide the necessary environment to further facilitate Makueni people's pursuits, in such a way as to transcend the present preoccupation with day-to-day survival, and instead journey them to a durable and progressive society. The County Spatial Plan is a necessary input in this regard. The plan provides a suitable spatial template to effectively anchor the County's development agenda and guide the socio-economic pursuits of Makueni's people.

The County Spatial Plan goes a long way in enabling the County achieve aspirations of the Kenya Vision 2030 and the Makueni Vision 2025. The Plan's spatial vision "to make every acre count" complements the sectorial vision to guarantee "opportunity for every household" and supports the implementation of the county programmes and projects. Consequently, my government will prioritize the plan's implementation.

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Acknowledgements

The County Government of Makueni, in fulfilment of its county planning mandate granted under the Fourth Schedule of the Constitution of Kenya, commenced the preparation of a County Spatial Plan (CSP), in March 2017. This plan is a culmination of that process. The successful completion of the Makueni County Spatial Plan would however not have been possible without the efforts of several individuals and groups, to whom the County wishes to express gratitude.

The planning process was initiated by the County Executive Committee (CEC), and subsequently taken up by the County Executive Committee Member (CECM) responsible for Lands, Mining, Housing, Physical Planning and Urban Development. An inclusive, multi-sectoral team comprising of the County's key sector departments was formed with a view to ease access to data necessary for plan preparation, and share information regarding sector policies, ongoing programmes and projects. The planning process was undertaken under the effective guidance of the County Director of Physical Planning, and his dedicated team of planners, Geo-spatial experts and technicians. To this in-house team, I express gratitude for their tireless effort.

The planning process incorporated an elaborate stakeholder engagement, whose aims were to get Makueni's people's appreciation of key territorial issues and challenges, and their perspectives on what ought to constitute suitable responses. The plan bears the specific imprint of their contributions, and to which the County owes them much gratitude.

The County wishes to appreciate the contribution of the United Nations Development Programme (UNDP), which, through the Council of Governors, provided the financial resources necessary to retain consultants for purposes of facilitating and guiding the tail-end of the process towards a successful close. The team is responsible for finalizing the plan and its associated process outputs. In this regard, we wish to thank our two partners, as well as the three spatial planning consultants, for a job well done.

Finally, we acknowledge the contribution of the many other actors in the planning process, including interns from the Technical University of Kenya, and the University of Nairobi, who burned the midnight oil to prepare a digital geo-database, thus fulfilling the requirement for a Digital GIS-based County Spatial Plan. To them I say, thank you.

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Spatial planning is concerned with the agency of territorial spaces as integrating and facilitative frames for all developmental initiatives. As a type plan, the County Spatial Plan (CSP) represents an attempt to structure the jurisdictional territorial space of a County, in such a way as to enhance its instrumentality relative to the County people's collective vision and its associated sectoral programme of actions. In addition, therefore, to influencing the distribution of people and activities across the County territory, the plan seeks to achieve distributional justice with respect to the county's shared resources and enhance the derivative gain of human activities in space, and the efficacy of infrastructural endowments thereof, and all the while guaranteeing the sustainability of outcomes.

The Makueni planning process began with an elaborate undertaking to assess the existing situation with respect to the County's physical resources, the people's territorial practices, and their interaction and attendant consequences. The process, which was also highly consultative, involved participants from diverse backgrounds including; the community, sectoral departments of the County government, national government agencies, professionals, non-state actors and civil society. The aim of the consultation was to assess Makueni people's appreciation of issues and challenges that confront their daily existence, especially as they emanate from or are linked to territorial factors and the operative spatial development policy. Most importantly, it sought to access their perspectives on suitable responses.

The completion of the situational analysis ushered in a plan formulation process where acquired understandings regarding existing assets of place, opportunities of context, strengths of the existing territorial structure, as well as the good in the people's spatial practices, served as a lens to inform the formulation of an overarching template to guide initiatives to realize Makueni's development vision. The template primarily serves as a blueprint that will facilitate the efficient, productive and sustainable utilization of land and landed resources within which the County and deliver on existing opportunities while confidently addressing identified challenges. The plan is by design a flexible and dynamic framework capable of responding to changing circumstances and evolving aspirations of Makueni's peoples.

The final plan is a synthesis of six strategies targeting key areas of concern including; natural resources and environment, agriculture, human settlements, transportation, infrastructure and services, and economic development. These strategies are geared towards responding to principles of overarching frameworks such as the *Constitution of Kenya, the Kenya Vision 2030, the National Land use Policy, and the National Spatial Development Perspective*. Furtherance, the Plan supports the County's development agenda as communicated in the *Makueni Vision 2025* and elaborated in the various sector plans. Lastly, it provides a spatial template to anchor priority programmes as summarized in the County Integrated Development Plan. Although defined as a ten-year GIS-based plan, the CSP has a long-term perspective, with a short- and medium-term implementation purview.

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Executive Summary

The Makueni County Spatial Plan (CSP) is a blueprint to guide development activities in Makueni. The Plan gives a detailed spatial depiction of Makueni County's territorial space, and highlights strengths and deficiencies in its existing spatial structure. Consequently, the Plan suggests a strategy of intervention by which the various components of the existing spatial structure are integrated into a wholesome and overarching framework to achieve long-term sustainable development within Makueni County.

The Makueni CSP has been prepared as per provisions of the County Governments Act, which defines the type plan and delineates its substantive scope. The planning process followed the roadmap given in the Physical Planning Act, and in respect to the preparation of Regional Physical Development Plans, as the CSP is variously referred to. The Plan is informed by principles of the Constitution of Kenya, the National Land-use Policy, and the National Spatial Plan, as well as national policies on land, land use, urban development, transportation, agriculture among others. It domesticates aspirations of the Kenya Vision 2030 and translates Makueni's own Vision 2025 in spatial terms.

The plan is structured into three broad sections. It begins with an elaborate analysis of the existing situation in Makueni County, both in terms of opportunities and challenges presented by the existing spatial structure, and the performance of key development sectors. Subsequently, the plan proposes a suitable programme of remediation, with space serving as an integrating frame. The spatial framework is complemented by a detailed programme of sector-based strategies and flagships, complete with a Capital Investments Plan (CIP) that links programmes and projects to budgets and resource frameworks.

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Makueni County covers an area of 8,034.7 square kilometers within the former Eastern Province of Kenya, one of three predominantly inhabited by the Akamba peoples of Kenya. The County capital, Wote, is 130km east of Kenya's capital, Nairobi. The County lies between 259m and 2138m above sea level in four distinct forms: the undulating and very steep uplands of Kilungu, Kilome and Mbooni to the northwest, vast open gently-inclined plains stretching south-east from Kilome's foothills, the bottomlands of Kibwezi and enclosed by the Chyulu Hills mountain range at the southwest and the Yatta linear plateau to the northeast. The contoured undulated uplands host a dense rivulet network of tributaries that flow downstream, successively merging into larger rivers, including, Thwake, Kaiti, Kikuu, Muooni, Kiboko, Kambu, Tsavo, Mtito Andei, Kambu and Kiboko. The latter eventually channel their waters into the giant Indian Ocean-bound Athi River, which meanders southwards across the County's bottomlands.

An estimated 63% of all county land is considered arable, with an ability to support meaningful crop production. Forests account for 17% of the total land cover in Makueni, bushlands cover 48% of the county, grasslands 5%, croplands 6%, barren lands 16% and 8% is under intensive settlement. While majority of residents are land owners (of an average of 1.58 Ha), land adjudication remains incomplete with only 35% of people having title deeds. The land sector faces challenges of uncontrolled land fragmentation, landlessness and the existence of squatters.

Makueni County has a high potential for solar power generation with an average County-wide insolation of 4.2-4.4kwh/kwp. Wind energy equally remains unexploited despite the existence of wind speeds of up to 15.4kmph on the hills. While there are currently no hydropower plants in the county, completion of the Thwake multi-purpose dam is anticipated to generate 17.6 megawatts of hydro power per day.

Makueni County is spatially structured by both geo-physical and man-made components. The geo-physical elements that have structured the county's territorial space include the landforms, the county drainage and ecological systems. A variety of activities associated with the peopling and habituation of this landscape by humans that have also structured Makueni spatially include transport, settlement, land use and spatial practices.

The current population of Makueni County is estimated to be 1,002,979 people (in 2018), growing at a rate of 1.4% annually. 51% of the population is women while an estimated 7% are vulnerable persons aged above 75 years or living with disability. The population pyramid of the County is bottom-heavy, with 44% of all persons being children below 15 years of age. 34% of the County residents are categorized as absolutely poor.

Agriculture is the predominant economic activity in the County contributing 78% of the total county Gross Domestic Product. Dairy farming and the production of coffee, avocados, passion, horticulture, maize and vegetables is predominant in the uplands. The production of green grams, pigeon peas, cow peas, mangoes, citrus fruits, paw paws, melons, cotton and sisal is predominant in the plains in the middle zone of the County. Poultry production, bee keeping, pasture development, fruit farming (mangoes, water melons, paw paw), green grams, sorghum, millet, pigeon peas, cow peas, cassava, sweet potatoes among others is practiced in the lowlands. Value-addition however remains inadequate in the agricultural sector, although facilities such as the Makueni Fruit Processing plant in Kalamba and the Kikima Milk processing plant have revitalized their specific sectors.

Trade and commerce are a vibrant occupation in Makueni County, with the informal sector growing at an annual rate of 3%. The mining sector mainly involves the extraction of sand, soil, granite, stone and ballast. While there are deposits of Kaolin, limestone, volcanic rocks, marble, salt, granite (green and red), quartz, gypsum, vermiculite, mica, copper, dolomite, iron ore, basalts, gemstones in Kibwezi West Sub County, their commercial viability has not been established. The County shares part of the famous Tsavo National park with Taita Taveta and Kitui Counties. However, the potential this sector holds has largely been under-tapped in Makueni County such as from the Standard Gauge railway line and stations, gazette forests and scenic views in the uplands.

Makueni County is strategically anchored within and connected to its context through an elaborate and hierarchical network of international rail and road trunks, national and regional highways. This includes the 140 kilometers of the Standard Gauge railway line, the A109 highway, Makindu airstrip, a national pipeline and other highways connecting the County to Moshi, Kitui, Machakos, Voi and Mwatate. Numerous other feeder roads further penetrate the County's interior. Of the 3,203.5 km² of the County's road coverage, 69% are earth roads and only 14% are tarmacked.

The main source of water in Makueni County is rivers with water service companies supplying this commodity to only 24% of the population. The County over 159 dams and water pans including some privately-owned ones, a situation expected to change with the completion of the Thwake Dam. An estimated 56% of residents in Makueni County have access to improved sanitation. Firewood is the predominant source of energy for cooking, used by 78% of the population, while only 17% of the population uses electricity for lighting.

Makueni County has a lower rate of illiteracy (22%) compared to the national average (29%). There is a 60% transition rate to secondary school, while the teacher-student ratio is highest at the primary school level where there is an average of one teacher for 36 students. Makueni County has a total of 314 health facilities, constrained by high doctor-patient ratio (1:15,060) and a nurse-population ratio of 1:1441.

Makueni County has an urbanization rate of 11.8%, with an urban population estimated at 8% of the total County population, accommodated in over 600 settlement clusters, predominant of which are Wote, Emali, Kibwezi, Mito Andei and Makindu towns. However, urban development has however been largely unregulated with only 6 land use plans currently having been prepared.

Climate change has been a major challenge in Makueni County, with 12 climatic disasters having been recorded in the County since 1980. The result has been erratic rainfall, frequent droughts and shortage of water to sustain agricultural development. This has also further constrained water sources replenishment and thus the frequent drying up of perennial rivers and water pans. Environmental challenges in the County are mainly depletion of water catchment areas, destruction of forests, and invasion of wet areas, unabated sand harvesting and poor agricultural practices such as cultivation along riverbanks.

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The Makueni CSP Plan adopts the catchphrase “Every Acre Counts” in parallel to Makueni Vision 2025’s “Kila Nyumba O’kalila” which underscores the need to guarantee “opportunity for every household” to enlist both the participation of its resources and its peoples in the pursuit of “a prosperous, value-based county with high quality of life”. Consequently, the overarching vision for the County Spatial Plan is; “Optimal and sustainable utilization of Makueni County land to achieve a high quality of life for every household”.

The CSP proposes a re-engineering of Makueni’s territorial space and its embedded resources for purposes of reversing the damage inflicted, and to make it fit for the purposes towards achieving the pronounced aspirations of Makueni’s peoples through four concepts: (a) the Protector Concept of Sacred Nature-scapes, (b) the Activator Concept of Productive Culture-scapes, (c) the Framing Concept of Connector Spines and Ribs, and (d) the Enabler Concept of Networked Hubs and Spokes.

The concept of Sacred Nature-Scapes identifies sacrosanct spaces needing protection to stem the encroachment, and where possible, restore these areas to their original state such as steep slopes, denuded land, water towers and wildlife sanctuaries. The concept of Productive Culture-Scapes proposes the maximization of county productivity by activating specialized production areas including agriculture, conservation and tourism, mining, settlement and commerce. The concept of Connector Spines and Ribs seeks to frame the

regional infrastructure that traverses Makueni County toward enhancing Makueni's competitiveness in the region. Finally, the concept of Networked Hubs and Spokes seeks to deploy four elements, namely; means of territorial access and hinterland penetration, expansion of infrastructure distribution grids, settlements structuring through thoughtful siting, classification of and allocation of requisite functions, and provision of infrastructure and services to support manufacturing and commerce.

Development in Makueni can take three distinct paths of growth: agro-industrial growth, tourism and conservation-led growth, or urbanization and trade-led growth based on its natural and man-made assets. This CSP however adopts a hybrid model that seeks to revitalize the rural areas through agro-industrialization, awaken the marginal zones through conservation-led growth and jump-start the economy through a system of planned, specialized, urbanized trade and commerce hubs. Through six broad sectoral strategies are proposed within the CSP through a variety of achievable sector-specific programmes and projects localized in specific areas. These six strategies that combined form the county spatial development framework are: (a) Environment and natural resource strategy, (b) Agricultural development strategy, (c) Economic development strategy, (d) Settlement development strategy, (e) Transportation development strategy and (f) Infrastructure and services development strategy.

The Environment and Natural Resource Strategy proposes afforestation, agro-forestry, terracing, gabions, protection of springs and wetlands in the uplands, and sustainable crop cultivation practices in the midlands. Irrigation, controlled water abstraction, water pan construction, rainwater harvesting, pasture development, afforestation, and industrialization are proposed for the lowlands. The backdrop of the Yatta Plateau is proposed for use for tourism promotion. Afforestation, tourism promotion, wildlife conservation is proposed along the Chyulu Hills. Riparian buffering, afforestation, and water abstraction control is proposed along the county streams and small rivers. Along the large rivers, proposals include riparian buffering, afforestation, damming, strategic water abstraction, sustainable sand harvesting. Springs and wetlands have been zoned off for protection. Proposals for forests include fencing of all gazetted forests, introduction of wildlife, introduction of forest tourism, planting of indigenous trees and development of forest management plans. Afforestation, biofuel production and planting of drought resistant woodlots are proposed for the bushland area while the grasslands have been proposed as zones for commercial pasture development and ranching. It is proposed that the barren lands be designated as wildlife conservancies.

The Agricultural development strategy proposes promotion of intensive commercialized crop farming particularly of grains (such as maize and other legumes), vegetables and cash crops (such as coffee, sorghum and millet) within the uplands, as well as dairy farming. Intensive horticulture (of fruits such as mango and oranges) should be promoted within the middle zone, as well as enhancement of cotton and sisal farming supported by the introduction of sericulture. Within the lowlands, large-scale livestock ranching within the lowlands and commercial bee farming should be promoted. Along the major rivers proposals include irrigated farming as well as the introduction of small-scale fishing. The agricultural value-chain will be strengthened through sufficient extension and research services, provision of farm inputs, climate smart agriculture and the establishment of collection centers, storage facilities and industries.

The Economic Development Strategy has proposals for revitalization of tourism, trade and commerce and industry. Proposals for tourism promotion include the establishment of conservancies, creation of a conservation area around Chyulu hills, expansion of existing conservancies, promotion of investment in tourism facilities, establishment of sanctuaries for crocodiles and hippos, establishment of snake parks, a museum of Akamba history, cataloging of heritage sites and construction of cultural centers. The establishment of specialized trade centers, grain markets, and markets for jua-kali products is proposed to rejuvenate trade and commerce in Makueni County. Development of agro-industrial plants, handicraft centers, a ceramic industry as well as designation of areas for jua-kali industry are proposals for industrialization of the County. Kibwezi Town has been selected as a flagship agro-processing zone with processing plants for meat, leather, grain, fruit, sisal and honey.

The Settlement Development Strategy proposes the classification of urban areas in Makueni County into a hierarchy of four tiers: city, municipality, town and urban center as envisioned in the Urban Areas and Cities Act. The urban areas have been assigned unique functions based on their potential specialization. It is proposed that physical development plans be prepared for all urban areas within the plan period although the urban areas within Tiers 1 and 2, as well as those along the A109 and B6 highway have been highlighted as priority areas for planning. Additional proposals include development control, upgrade services and land banking.

The Transportation Development Strategy proposes the improvement of intermodal connectivity between the Railroad Corridors, the airstrip and the regional connector highways. For improved transportation efficiency, the development of a logistics termini, reduction of stop overs through regularized settlement intervals, establishment of disaster management centers and the upgrading of major interchanges have been proposed. Crucial road links such as the Emali-Kalamba-Ukia and the Wote-Katangini-Kalawa roads have been prioritized for tarmacking to elevate them to the level of regional connectors. All County arterials have been proposed for improvement to bitumen standards while county feeder roads have been proposed for gravelling to all-weather status. The rehabilitation of the Makindu airstrip has been proposed as a mode of awakening air transport in the County.

The Infrastructure and Services Development Strategy includes provisions for the expansion of services (communication and ICT, energy, water supply, sanitation) provision in all urban centers. Expanded access to social services (education, health, security, and administrative services), construction of sewer treatment plants and stadia in large towns are additional proposals. The sector flagship project is the finalization of Thwake Dam that is expected to generate 17.6 megawatts of hydropower, support irrigation and catalyze educational tourism. Climate change adaptation and mitigation solutions have been mainstreamed across the six sectors such as by proposals for increasing carbon sinks, promotion of the use and generation of renewable energy, climate smart agriculture, community training and widespread mobile-based dissemination of relevant climate information. Reduced marginalization of vulnerable persons has been mainstreamed through proposals for establishment of special facilities (such as mental health units, elderly care centers, homes for orphans and a school for the visually, hearing or speech impaired children in the County, and the mandatory participation of such persons in County decision-making. Automation of County services and the strengthening of urban governance are proposals for people-centered governance.

Implementation of the Makueni CSP is proposed to follow a two-tier system combining both county-level and national level stakeholders and supported by a feedback system based on reporting. The proposals within this Plan have been estimated to cost 36.5 billion Kenya shillings, 55% of which will be required in the first phase of plan implementation. A monitoring and evaluation frameworks have been proposed in this CSP for establishing implementation status of projects, establishing key hinderances or facilitators of success, as well as identifying correctional actions for effective implementation. It is anticipated that implementation of this CSP will transform Makueni County and enhance the quality of life for all households over and beyond the plan period.

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1.1. Background to the Plan

1.1.1. H Y'BYX'lc 'D'Ub'

The promulgation of the Constitution of Kenya, 2010 (CoK) ushered a fundamental paradigm shift in governance in Kenya and raised expectations of the Kenyan people. It introduced a new framework of devolved governance, which saw the creation of the 47 counties vested substantial power and authority to govern newly County regions. In addition, the constitution distributed the planning function between two levels of government, i.e. national and county. While the former charged with issuance of general principles and the coordination of planning by Counties, the latter was allocated the function of county planning and development. The framework is intended to enhance the participation of local people in determination of their destiny, and by putting County Governments directly in charge of development, enhance the productive and sustainable management of land resources. This in turn is to be achieved through the preparation of plans that are geared towards the spatial organization of the County territory and sub-territories, as well as the various thematic sectors that frame the County's development agenda. The County Spatial Plan is one such plan.

Spatial planning refers to the methods and approaches used by the public sector to influence the distribution of people and activities in spaces of various scales. It can also be defined as the coordination of practices and policies affecting spatial organization of a given territorial dominion. County Spatial Plans are ten-year GIS-based plans that are intended to serve as a spatial template to anchor and guide local developmental initiatives. It also serves as a framework for sustainable development within the county. They do so by structurally positioning a county for growth and competitiveness within its broader territorial setting, the CSP proposes measures to assist the County realize optimal use of the County's land resource for the benefit of County residents.

The preparation of the Makueni County Spatial Plan (MCSP - 2019–2029) is one of Makueni County Government's initiatives to implement its constitutional mandate as enshrined in the Fourth Schedule of the constitution Part 2 (8), and further outlined in Section 104 of the County Governments Act with respect to overall County Planning. The process of formulating the plan commenced in March 2017. The Makueni CSP is a culmination of contributions of various stakeholders within the County, including county government departments, relevant National Agencies, local investors and interest groups.

1.1.2. D'Ub'Di fdcgY'UbX'CV'Wjj Yg'

The Makueni CSP responds to key pillars and objects of County planning as outlined in section 102 and 103 of the County Government's Act, and to the extent that they are relevant to Makueni's context, are adapted as follows;

1. To facilitate the development of a well-balanced system of settlements, and develop urban and rural areas as integrated areas of economic and social activity,
2. To ensure productive use of scarce land, water and other resources for economic, social, ecological and other functions across Makueni County,

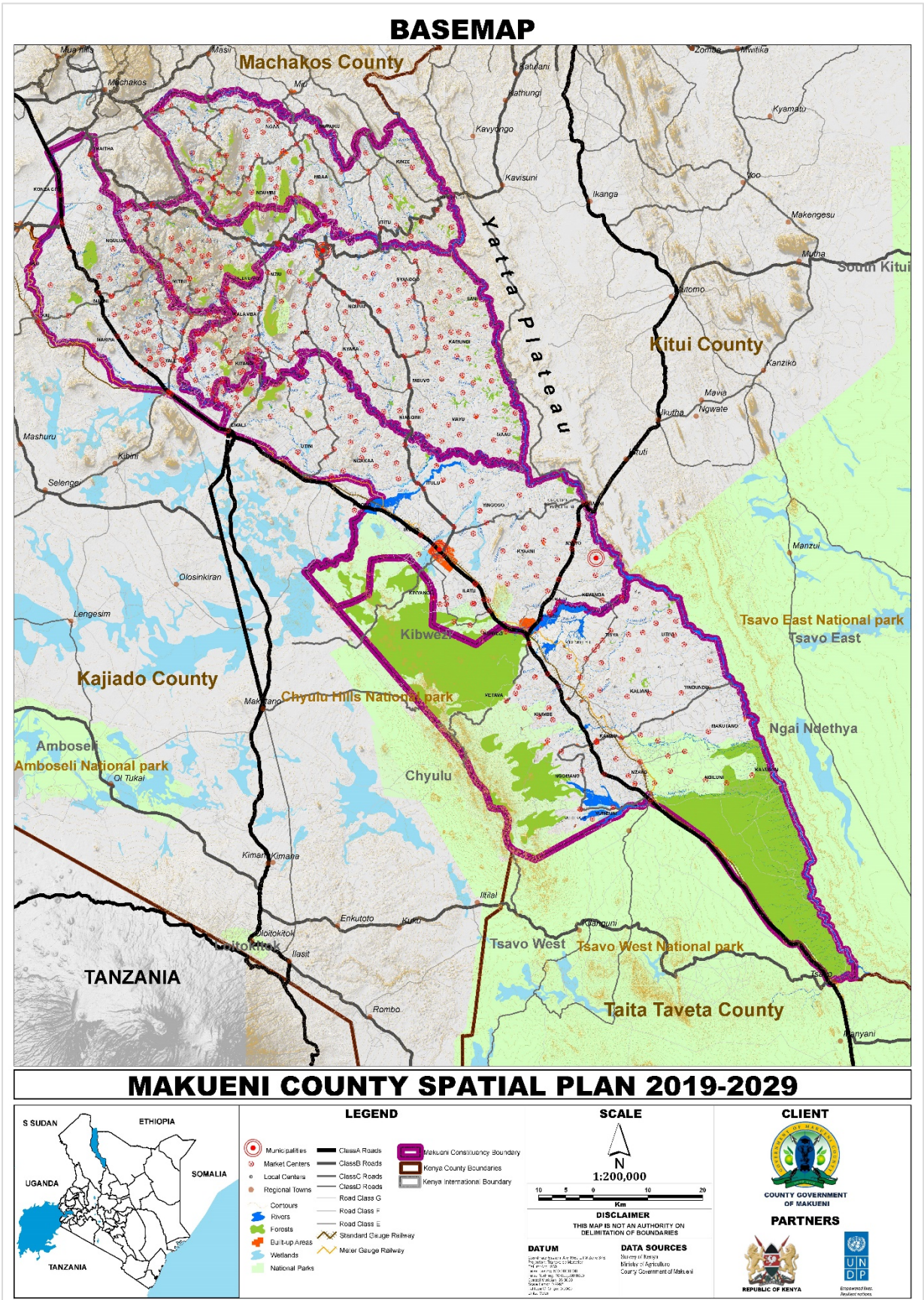
3. To maintain a viable system of green and open spaces for a functioning eco-system,
4. To harmonize the development of county communication system, infrastructure and related services,
5. To provide the preconditions for integrating under-developed and marginalized areas to bring them to the level generally enjoyed by the rest of the county;
6. To protect the historical and cultural heritage, artefacts and sites within the county; and
7. To make reservations for public security and other critical national infrastructure and other utilities and services;
8. To work towards the achievement and maintenance of a tree cover of at least ten per cent of the land area of Kenya as provided in Article 69 of the Constitution

In addition, the spatial plan has the following strategic objectives;

1. To anchor strategic and programmatic initiatives of Makueni County within the broader regional and spatial development frameworks, and ensure harmony between initiatives at different spatial scales,
2. To spatially anchor, within Makueni territorial space, the County's development programme as articulated in its County Integrated Development Plan and elaborated in Sector plans;
3. To indicate desired patterns of land use and provide strategic guidance in respect of the location and nature of development within Makueni county;
4. To indicate a targeted programme of conservation and protection in line with anticipated sustainable development outcomes;
5. To identify programs and projects for land development and infrastructure investment within Makueni county and set out a capital investment framework to indicate areas where priority spending is required;
6. To provide a GIS platform that will assist the management and regulation of the use of land and to guide day to day planning decisions
7. To develop the human resource capacity of the county through institutional strengthening and capacity building
8. To promote a democratic culture by developing and supporting community participation in planning processes and promoting access to governance and sustainable management of County resources.

1.1.3. **GW&dY'cZH Y'D`Ub`**

The Makueni CSP is prepared to cover the entire area of Makueni County measuring approximately 8,034.7 Km². The Plan is a medium-term spatial planning framework and regional development strategy with a planning horizon of ten (10) years from 2018-2028 and shall be subject to five (5) year reviews. The Plan highlights key spatial-structural and sectoral constraints that inhibit socio-economic development and environmental sustainability within the County. The Plan proposes robust spatial restructuring strategies and measures targeted towards key development sectors with a view to solve the identified constraints.



1.2.1. 8UJ7c`Yf`7cbgi`hUjcb`

The Plan proposals are aligned to intentions, objectives and strategies of broader frameworks including; the National Land use Policy, National Urban Development Policy, National Spatial Plan (NSP), and takes cognizance of plans of neighbouring Counties. It also complements the programmes identified in the Makueni County Integrated Development Plan 2017-2022, and

the plans of various sector departments. It shall also seek to mainstream global concerns of climate change adaptation, disaster risk reduction, utilisation of green renewable energy and gender parity.

1.2.2. 8UJ7c`Yf`7cbgi`hUjcb`

The preparation of the Makueni CSP deployed a highly interactive and consensual-vision-building approach. The process, which was open to participation by all County residents, brought together key County stakeholder groups. The consultations were conducted at the sub-county level. Targeted consultations were also held with specific groups in order to access in-depth views on key thematic areas. Consultations were held at critical milestones throughout the planning process, including the visioning and initial strategy formulation stage, and presentation of draft plan and final plan. Stakeholder engagement took the form of workshops, seminars, focus group discussions, electronic and print media.

1.2.3. 7ci bhmDfcZ]b[`UbX`G]hi UjcbU`5 bUng]g`

At the conceptualization stage, the team undertook a benchmarking exercise to counties where similar planning processes were underway, including Nakuru, Kiambu and Lamu Counties. The aim was to appreciate key aspects of the plan formulation process and identify best practices based on the practical experience of other counties. Subsequently, the team embarked on an elaborate fieldwork exercise with a view to assemble the data necessary for plan preparation. This entailed compiling detailed background information on Makueni County and its regional environs. Secondary data was collected and used to analyse the challenges and opportunities of the county.

1.2.4. D`Ub`: cfa i `Ujcb`

The data collection process culminated in the assessment of the current situation in Makueni County. The analysis was conducted in two dimension namely; a critical analysis of the Existing Spatial Structure, which focused on key spatial-structural elements that define Makueni's territory, and a detailed Sectorial Analysis which sought to assess the performance of key development sectors. Key areas of focus included; physical and natural resources, economic base, social, cultural and demographic profile, transport and infrastructure, environmental protection, and human settlements. The analysis ended with a synthesis of the existing situation, in which the County's assets and potentials were determined against key issues and challenges were identified.

The conclusion of the situational analysis paved way for the formulation of spatial and sectoral development strategies that covered the scope of the entire county, as well as perspectives

on key development sectors. Plan formulation involved scenario building on possible futures and desired outcomes over the next 10 to 20 years. Four key areas are as focal points for the spatial intervention strategy, the natural environment, access and connectivity, land productivity, regional positioning and competitiveness. Likewise, the sectorial intervention strategy targets seven thematic areas, environment and natural resources, agriculture, land use, human settlements, transportation, infrastructure and services, economic development. Measures to improve these sectors are proposed in line with adopted strategies for each sector.

1.3. Principles Guiding the Plan

The formulation of proposals for the CSP is guided by the following key principles;

1. Integration of national values in all the processes and concepts
2. Protecting and integrating the rights and interests of the minorities and marginalized groups in the society.
3. Protecting and developing natural resources in a manner that aligns with national and county policies
4. Equity in resource allocation within the county
5. Engagement and participation of the citizens, other stakeholders and interest groups.
6. Sustainable development catering for the current and future generations
7. Promotion of green and sustainable energy

Part One: The Situation

Chapter 2: The Existing Spatial Structure

2.1 County Profile

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International Context

Makueni County lies between Latitude 1° 35' and 30° 00' South and Longitude 37°10' and 38° 30' East. The County lies south of the equator, west of Kenya's Indian Ocean Coastline, north of Mt Kilimanjaro and along the Eastern edge of the Great Rift Valley. The County is anchored upon the Trans-African railroad corridor consisting of the A109 Highway and Railway that connects Central Africa to the Indian Ocean port of Mombasa. The corridor, which runs along the County, bounds it to the south. Makueni County is also connected to Tanzania through the Emali-Loitokitok Road (C102).

National Context

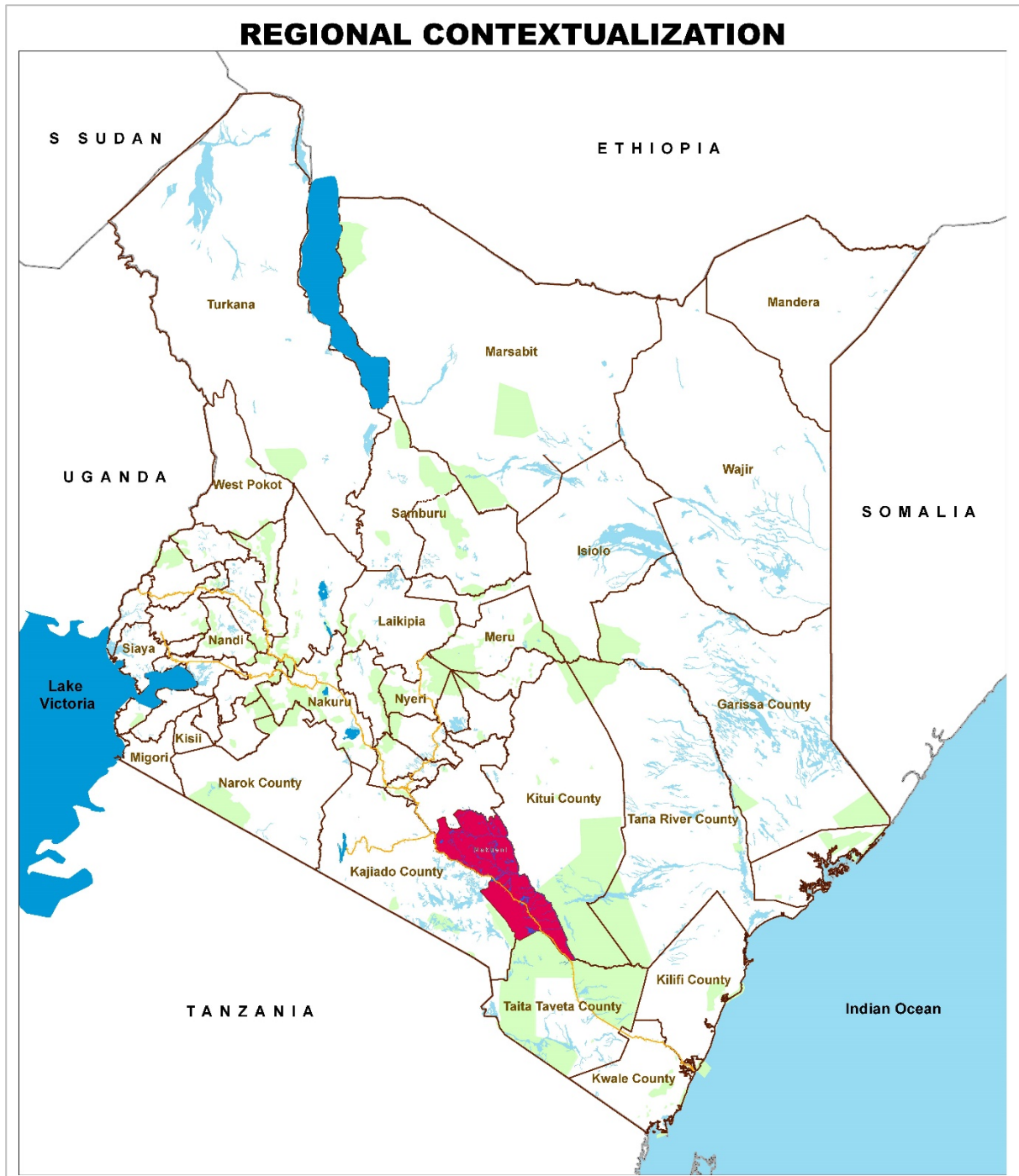
Makueni County is one of the 5 counties that constitute the former Eastern Province and one of 3 predominantly inhabited by the Akamba peoples of Kenya. The County forms the western edge of a vast arid expanse once christened Kenya's Northern Frontier District. The County capital, Wote, is 130km east of Kenya's capital, Nairobi, and 90km from the proposed Konza Technology City.

Regional Context

Makueni County is bordered by Machakos County to the northwest, Kajiado County to the southwest, Kitui County to the northeast and Taita Taveta to the east. The County is connected to Machakos County via Itangini-Mbooni-Tawa-Masii, Wote-Kola-Machakos and Itangini-Mbumbuni-Mbaikini Roads, Kitui via the Kibwezi-Kalembwa Road, Kajiado County via the Sultan Hamud-Mashuru, Emali-Loitokitok Roads and Taita Taveta via the Tsavo-Kilanguni-Masongaleni loop. The County capital, Wote, is 73km east of Machakos town, 170km south of Kitui town and 188km east of Kajiado town and 229km northwest of Voi town. The Tsavo National Park constitutes part of the County territory to the southeast.

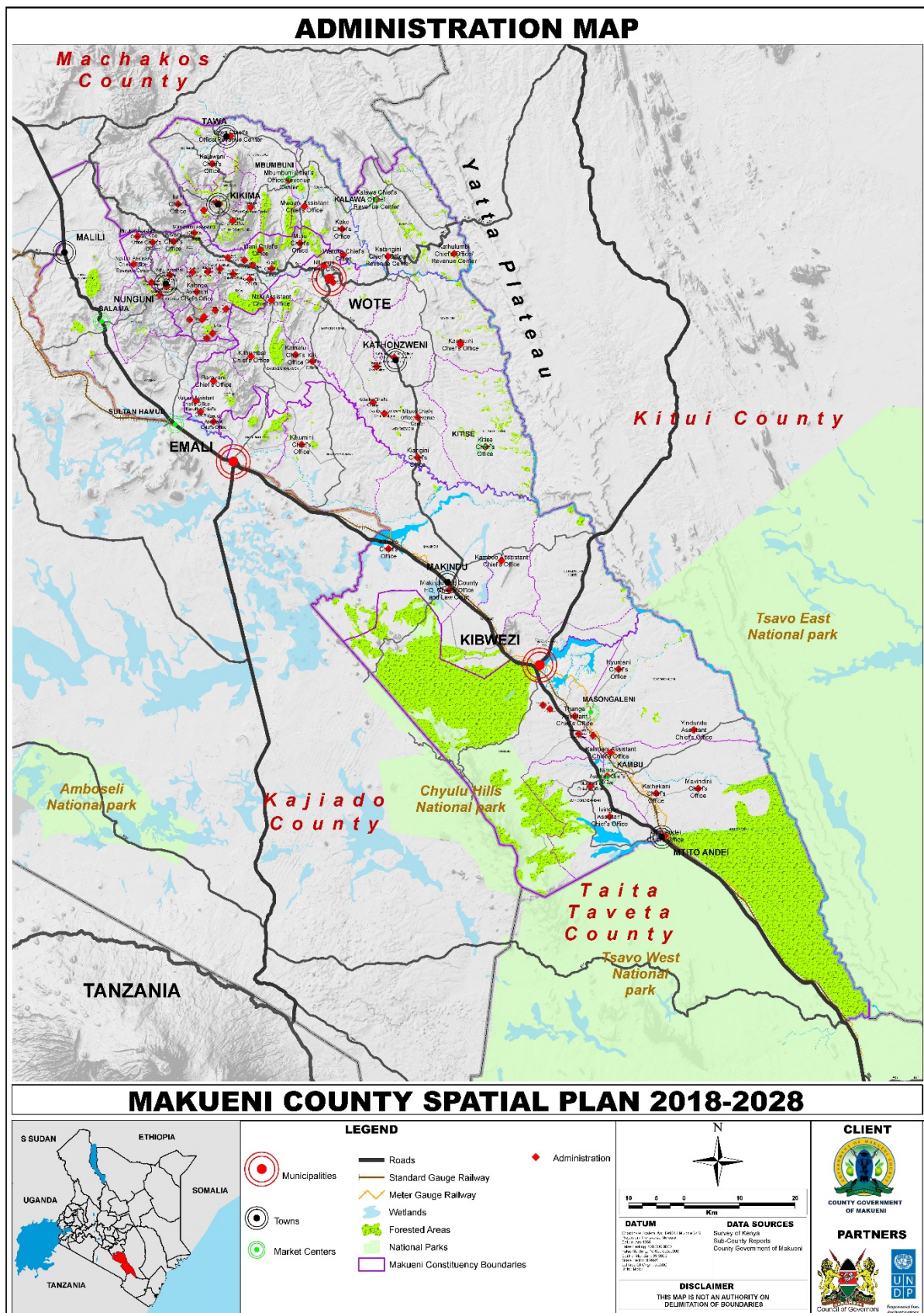
Local Context

Makueni County covers an area of 8,034.7 square kilometres. The County is edged by the Mbooni/ Nunguni/ Nzau Hills to the northwest, Chyulu Hills to the southwest and the giant Athi River and parallel Yatta Plateau to the northeast.



MAKUENI COUNTY SPATIAL PLAN 2018-2028

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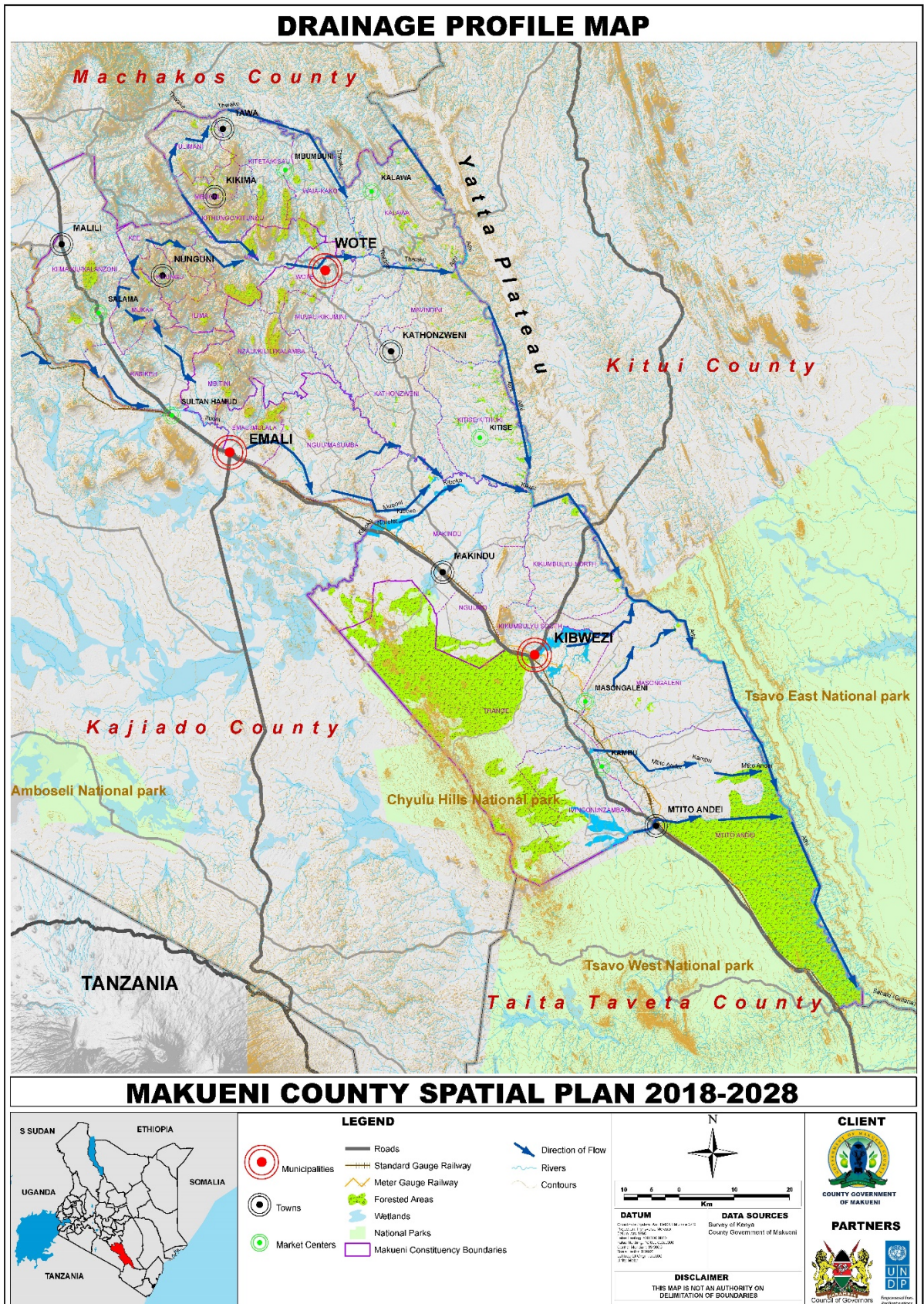
Relief and Drainage

The County's altitude is generally low, rising from 259m above sea level in the southeast to 2138m above sea level in the northwest. The landscape can be divided into four distinct units as follows;

1. Undulating and very steep uplands (1467m-2138m above sea level) of Kilungu, Kilome and Mbooni to the northwest making up one third of the County's land mass.
2. A vast open gently-inclined plain makes up two-thirds of the County's landscape, stretching southeast from Kilome's foothills.
3. The bottomlands of Kibwezi towards the coastal Nyika Plateau (259m-747m above sea level).
4. 100 km long linear Chyulu Hills mountain range, running northwest-southeast, edge the County's southwest limits, while the Yatta linear plateau, running northwest-southeast, edges the County's northeast limits.

Makueni's unique landscape profile configures the County's drainage pattern in a very specific way. Here, striations of the contoured undulated uplands host a dense rivulet network that gravitates, albeit with irregularity of flow, towards the low-lying east. These successively merge into larger rivers, including, Thwake, Kaiti, Kikuu, Muooni, Kiboko, Kambu, Tsavo, Mtito Andei, Kambu and Kiboko. The latter eventually channel their waters into the giant Indian Ocean-bound Athi River, all of which slowly meander across the County's bottomlands.





Geology and Soils

The undulating uplands which have their origin in the tectonic movements responsible for the Great Rift Valley's formation, host a substratum of erosion resistant metamorphic granitoid, folded into very steep hills, topped

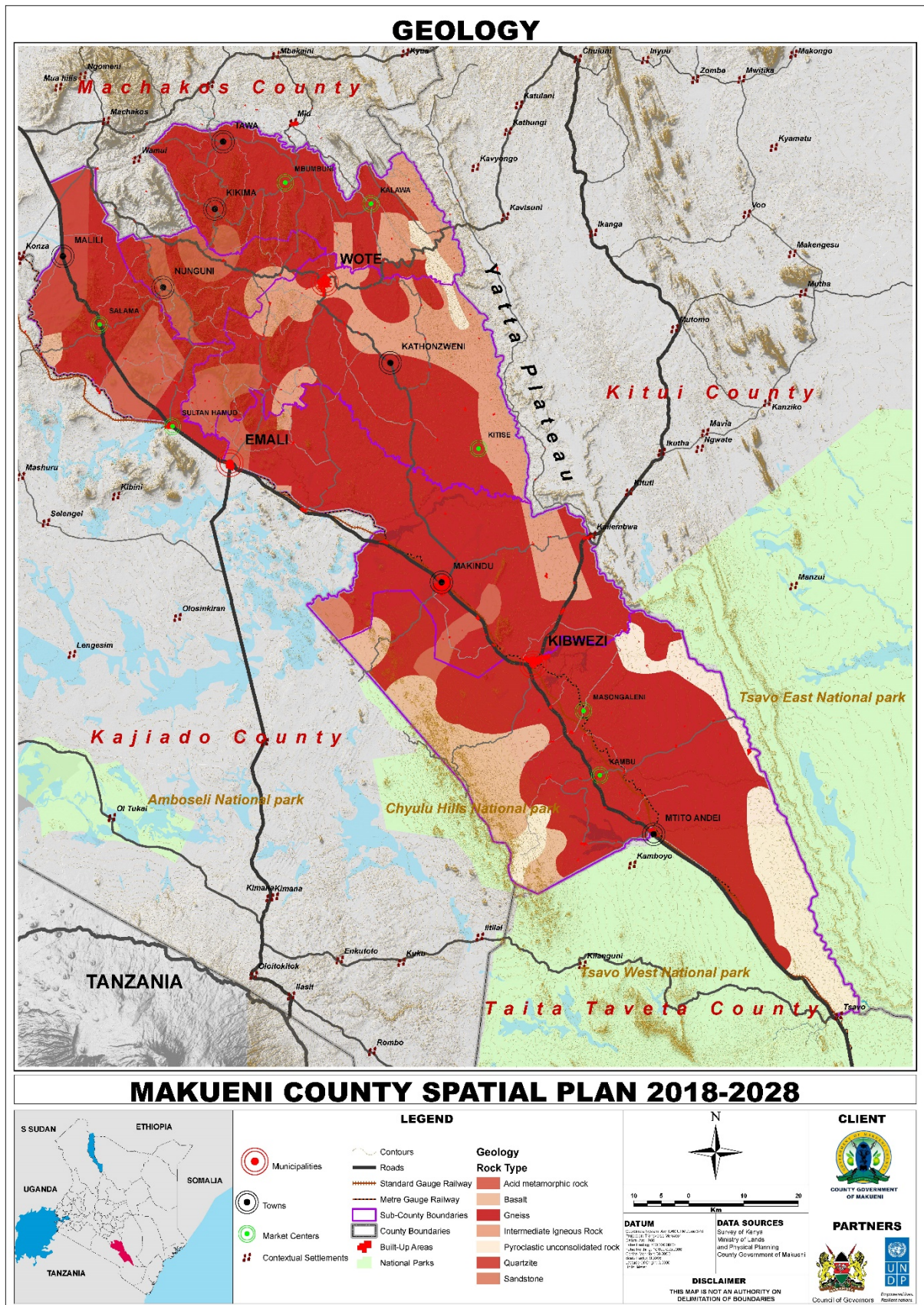


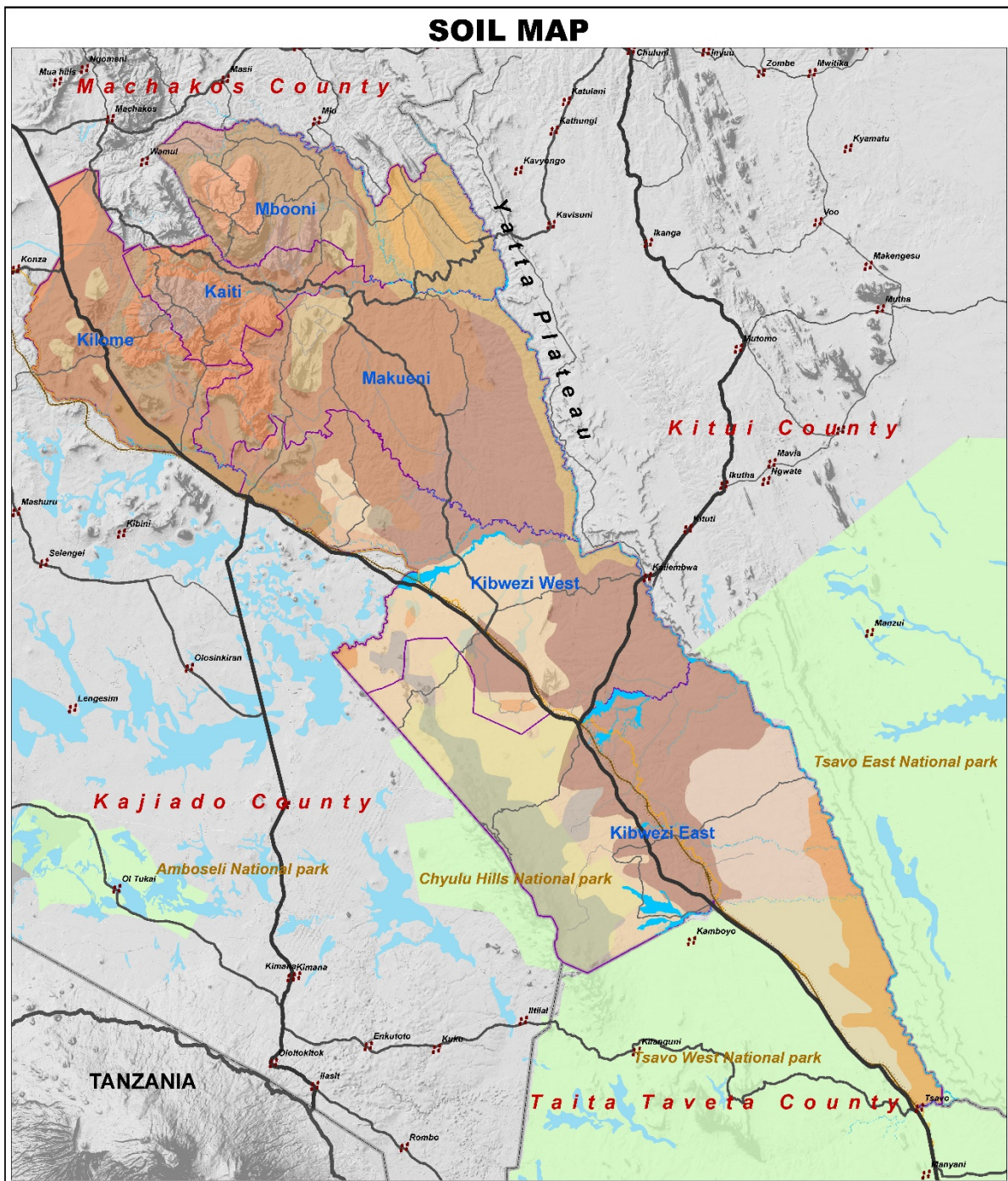
with a moderate layering of rich volcanic soils. The rocks have undergone significant weathering and fracturing making it possible for them to play an important role in the workings of the hydrological system, particularly as a mechanism for groundwater recharge, thereby making them highly aquiferous. This latter quality is the reason for their christening as crying hills.

On their part, the lowlands' pre-cambrian metamorphic sub-strata, equally composed of weathered and fractured gneisses and schists, is overlain by a thin profile of sandy clays with low dry-season water retention properties, although the sandy rivers host substantive aquifers.

The County's soil distribution pattern is a direct consequence of its geology. Soil types range from clayey black cottons over the Konza steppe, dark sandy loams atop uplands of the northwest, to red sandy soils alongside the Yatta plateau, and sand clays upon the Kibwezi plain.







MAKENI COUNTY SPATIAL PLAN 2018-2028

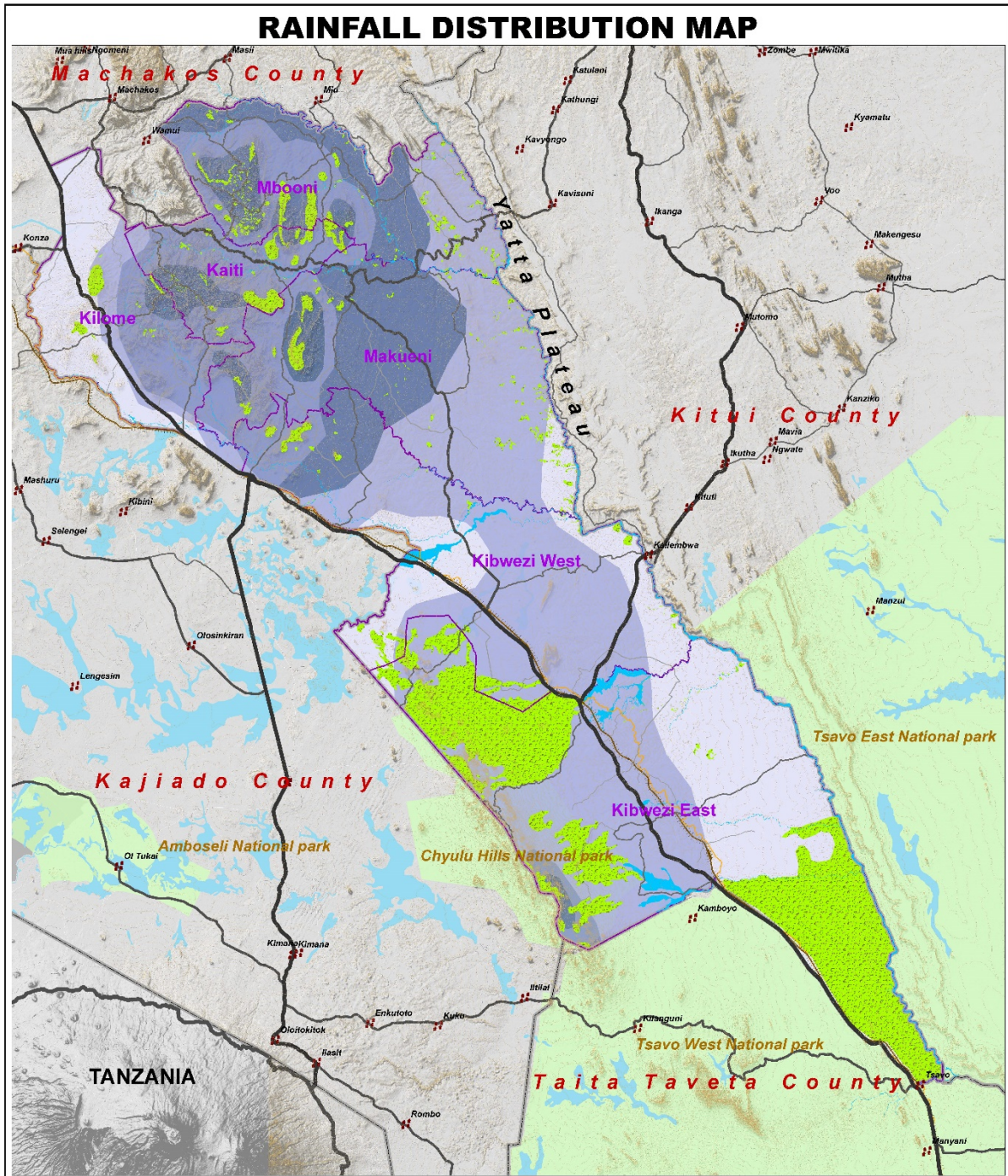
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Climate

The County has three relief and climate-differentiated zones, namely; arid (Mtito Andei, Tsavo), semi-arid (Masongaleni, Kibwezi, Kathonzweni, Makueni) and sub-humid (Mbooni, Kilungu).

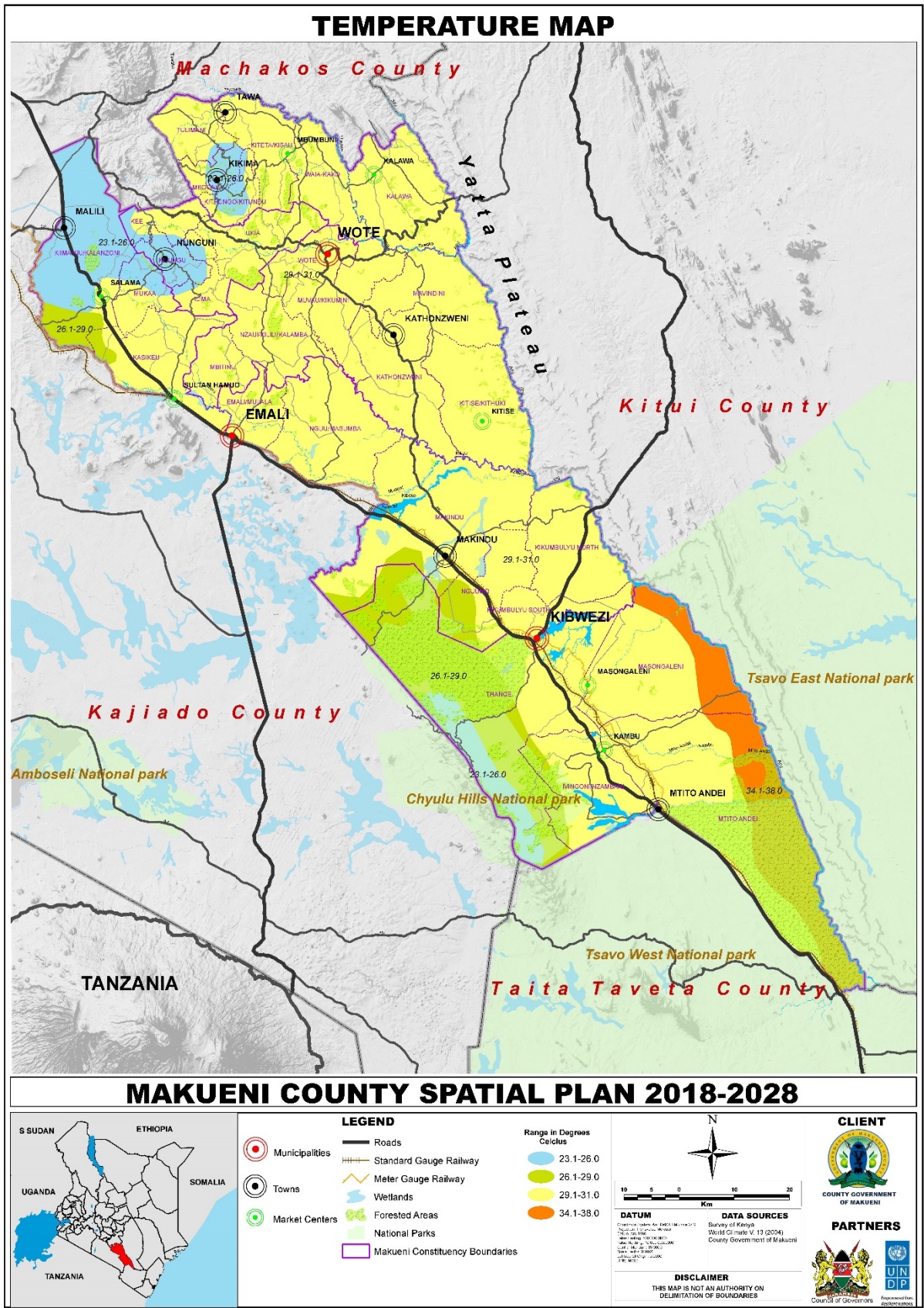
Precipitation is higher in the highlands of Tulimani, Mbooni, Kilungu and Matiliku which receive 800-1200mm of rainfall per annum. The and middle altitude zones of Kalawa, Kasikeu, Mbitini, Chyulu hills, Kibwezi and Makindu record a mean seasonal rainfall of 350-450mm. The lowlands of Kilome, western sides of Kasikeu, Nguu and Kathonzweni receive significantly lower rainfall averaging between 200 and 350mm.





MAKUENI COUNTY SPATIAL PLAN 2018-2028

<p>S SUDAN ETHIOPIA UGANDA SOMALIA TANZANIA</p>	<p style="text-align: center;">LEGEND</p> <ul style="list-style-type: none"> Contours Roads Standard gauge railway Meter gauge railway Forested areas Wetlands National parks Makueni Constituency Boundaries 	<p style="text-align: center;">Rainfall distribution</p> <ul style="list-style-type: none"> Less than 601mm 601-800 mm 801-1000mm 1001-1200mm More than 1201mm 	<p style="text-align: center;">N</p> <p>10 5 0 10 20 Km</p> <p>DATUM County of Makueni Survey of Kenya County Government of Makueni</p> <p>DATA SOURCES Survey of Kenya County Government of Makueni</p> <p style="font-size: small;">DISCLAIMER THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES</p>	<p style="text-align: center;">CLIENT</p> <p style="text-align: center;">PARTNERS</p>
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Vegetation

The County's land cover profile ecosystem structure is greatly influenced by variation in altitude, climatic patterns and distribution of soils. The County is generally dry and precipitation significantly low compared to other areas in Kenya. It is largely arid and semi-arid and usually prone to frequent droughts. Consequently, moderate rainfall in the uplands support a vibrant vegetation cover while depressed rains in the lower parts only allow for stunted vegetation and which likewise influence the land cover profile.

Sandy loams, which are localized in the highlands, are generally high in fertility, and together with high precipitation, allow a dense vegetative forest cover to flourish. Black cotton clays of the Konza steppe, as well as sandy clays of the Kibwezi plain, are generally low in fertility, and given the interceding dry climate, host vast stretches of savannah grasslands, scattered acacia trees and other shrubbery. Approximately 40% of the county is covered by vegetation. Of this, 90% is natural indigenous vegetation.

Wildlife

The County has varied wildlife species, most of which are localized at the Tsavo National park which lies in the southern part of the County. There is also a great variety of bird life both within and outside the Tsavo and in Kiboko sanctuary.

Land

Makueni is a vast County with a total surface area of approximately 8038 km². Out of this, 63% (5042.69km²) is arable while the remainder cannot support meaningful crop production as it is either marginal (22%), or under intensive settlements (7%). The arable land is spread throughout the County differentiated according to potential, uplands to the northwest having the highest potential, and diminishing as one approaches the lowlands to the southeast. The county has a mean holding size of 1.58 Ha.

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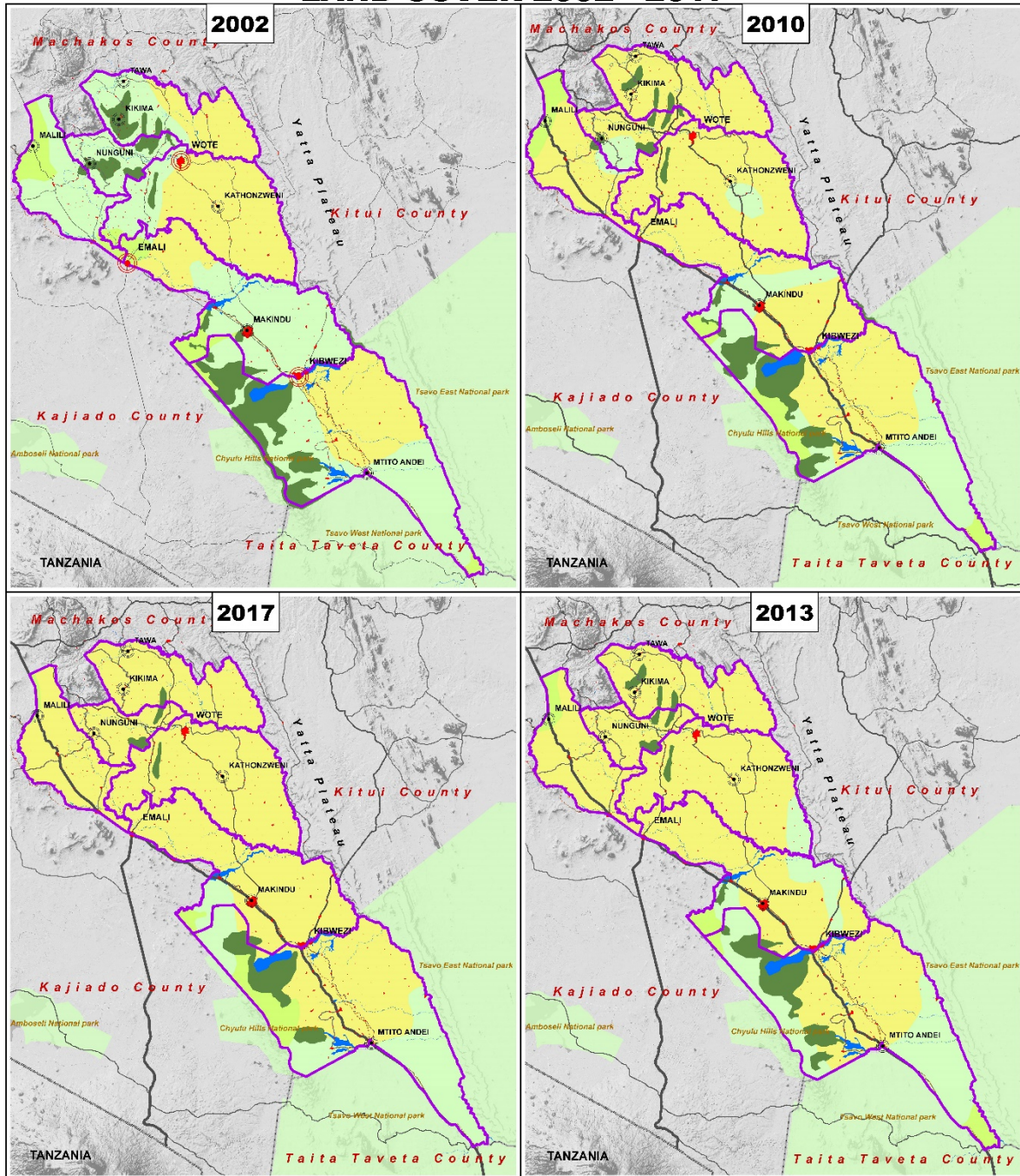
@bX' Wt:j Yf' WUH[cfm'	8 YgW]d]hcb.'
Forests	In 2016, forests accounted for 17% (1337 Km ²) of the total land cover in Makueni, down from 39% in 2000. There are 11 Community Forest Associations (CFA) and 40 farms engaged in farm forestry.
Bush-lands	In 2016, bushland accounted for 48% (3893 Km ²) of the total land cover, up from 27% in 2000.
Grasslands	In 2016, grasslands accounted for 5% (393.4 Km ²) of land cover in Makueni, down from 7% in 2000. The major livestock species kept in the County are cattle, sheep and goats. Cattle rearing in the County faces serious food shortages in the dry season as pasture gets depleted in the lower parts of Kibwezi West (Kathekani), Makindu (Nguumo), Makueni (Kitise) and Kaiti (Kee)
Wetlands	There is no lake in Makueni County although marshlands account for 0.01% (5.7 Km ²) of the total county surface, down from 1.1 in 2000. There is 1 permanent river in the County.
Croplands	The county has a total of 8034km ² and 1,762.71 km ² arable and non-arable land, which accounts for 74% and 21.9% of the total County surface, respectively. Most

	of the arable land or 6% (480.9 Km ²) is used for crop cultivation purposes, down from 9% in 2000. The County has potential in horticulture and dairy farming especially the hilly parts of Kilungu and Mbooni. The lowlands, including Kathonzweni, Mbooni East, Nzaui and Makueni are used for livestock rearing, cotton and fruit production.
Denuded lands	Approximately 16 % (1247.1 km ²) of the total land surface in Makueni is of very marginal nature.
Built-up areas	Mining and Built-up areas account for 8% (644.5 km ²) of the total county area, representing a 6% increase between 2000 and 2016.

Land ownership within the County is high, although incidences of landlessness are high in the lowlands of Nguu, Kibwezi/Dwa, Masimba, Makindu/Kiu, Kulula, Kiboko, Kevanda/Tarada where there are about 5,000 squatters are registered. Most of the land remains unadjudicated, with only 35% percent bearing title deeds. The titled areas are mostly in the County's upper and middle zones while the adjudication process in 25 settlement schemes in the Kibwezi area remains incomplete. 90% of the rural land is held under freehold while 10% is public urban lands held under leaseholds. Most plot owners in urban areas however have no titles to their land.



LAND COVER 2002 - 2017



MAKUENI COUNTY SPATIAL PLAN 2018-2028

	<p>LEGEND</p> <ul style="list-style-type: none"> ● Municipalities ■ Towns Standard Gauge Railway Metre Gauge Railway Sub-County Boundaries County Boundaries + Built-Up Areas National Parks 	<p>Land Cover</p> <ul style="list-style-type: none"> Cropland Forestland Grassland Shrubland Wetland 	<p>DATUM Kenya Grid System (1967) / UTM Datum: WGS 84 Projection: UTM Zone: 37S Units: Meter</p> <p>DATA SOURCES Survey of Kenya Ministry of Lands and Physical Planning County Government of Makeni</p> <p>DISCLAIMER THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES</p>	<p>CLIENT</p> <p>COUNTY GOVERNMENT OF MAKUENI</p>
				<p>PARTNERS</p> <p>Council of Governors UNDP Ministry of Lands and Physical Planning</p>

Water

Makueni County has three perennial rivers, the Athi, Kiboko, Kibwezi and Masongaleni. Other major rivers, including Thwake, Kaiti, Muooni, Kikuu, Thavu, Kambu and Mtito-Andei, are seasonal and subject to cyclical droughts. There are 4 springs, Iwani, Umanyi Kibwezi, and wetlands in places such as Kiboko, Mang'elete and Thange.

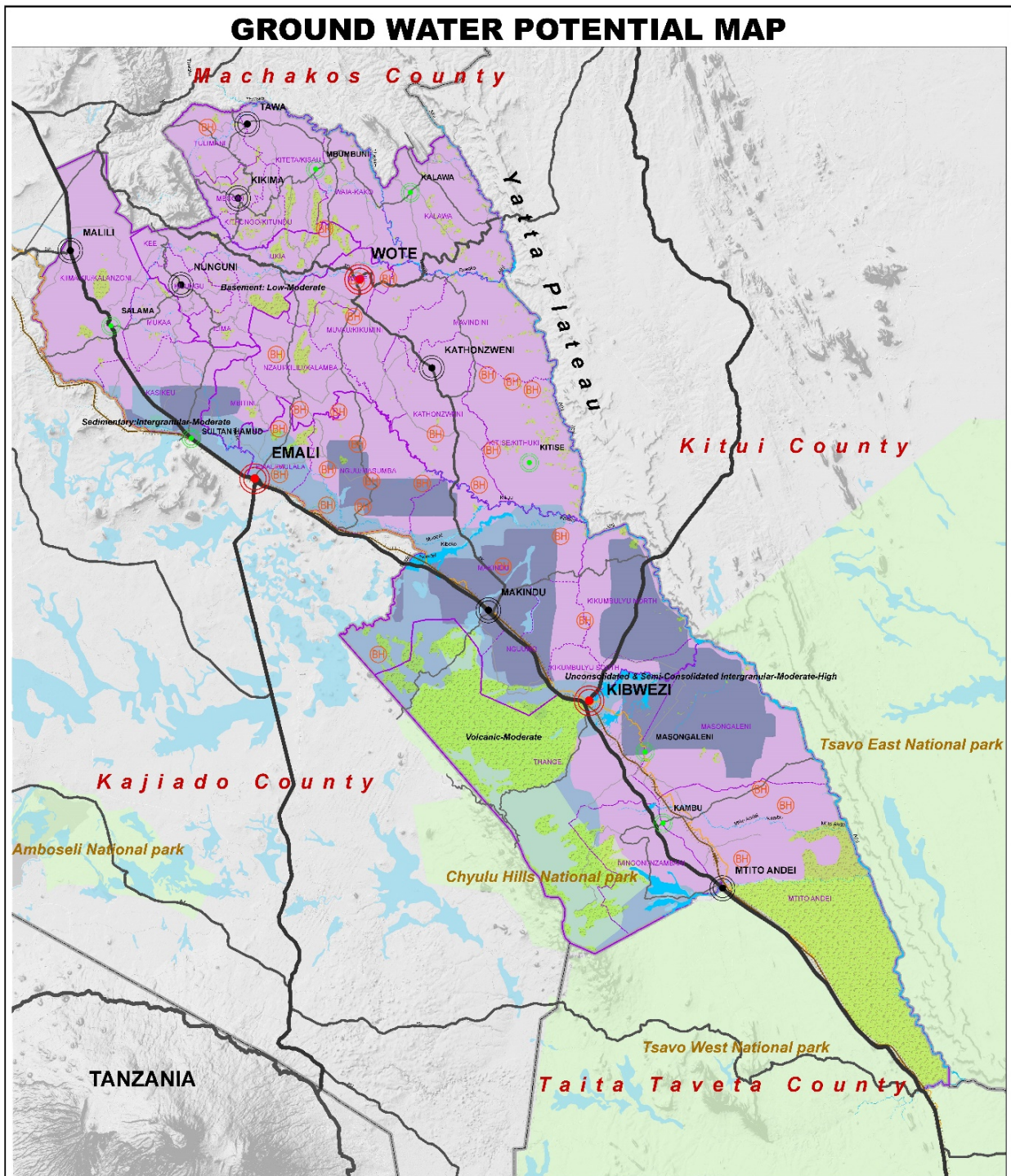
Despite having a dense network of rivers, Makueni is a water scarce County. It is estimated that the average distance to a water point, particularly in the lowlands, is currently 5 kilometers. This is attributed to the relatively lower density of rivers compared to the uplands. However, the hills in the uplands, as well as the lowlands' sandy riverbeds the hold significant acquirers which are prolific throughout the year and are abstracted by means of boreholes and riverbed excavation.

There are no surface water masses in County, although numerous swamps dot the entire territory, which temporarily hold water during the wet season. The County has over 159 dams and water pans including some privately-owned ones. Major projects include Kaiti sand dam which has the potential to supply water to Wote town with a capacity of 400M³ per day, Kwa Ndulu earth dam in Nguu/Masumba, D4 dam in Kiima Kiu Kalanzoni, and Kwa Luma and Kwa Mbila dams in Kathonzweni ward. Water availability for agricultural and household purposes is expected to improve tremendously with the completion of Thwake Dam, currently under construction.

The area with high groundwater potential (Wote, Kiboko, Makindu, Kathonzweni, Tawa, Ukia and Mumbuni) constitutes about 38.93 % of the County while 52.78% (Kiima Kiu and Konza) and 8.27% fell in the moderate and low groundwater potential, respectively. These aquifers are however threatened by degradation of upland water catchments, encroachment and destruction of lowland riparian vegetation and uncontrolled sand harvesting upon river beds.

Supply of clean and portable water is hampered by heavy siltation of water channels, limited distribution network, with reticulated water found only in a few urban centers. Reliance on boreholes, shallow wells and roof catchment serve to increase water availability.





MAKUENI COUNTY SPATIAL PLAN 2018-2028

	<p>LEGEND</p> <ul style="list-style-type: none"> Municipalities Towns Market Centers Boreholes Roads Standard Gauge Railway Meter Gauge Railway Waterways Forested Areas National Parks Makueni Constituency Boundaries <p>Hydrological Potential Zones</p> <ul style="list-style-type: none"> Basement- Low-Moderate Sedimentary Intergranular-Moderate Unconsolidated & Semi-Consolidated Intergranular-Moderate-High Volcanic-Moderate 	<div style="text-align: center;"> </div> <div style="text-align: center;"> </div> <p>DATUM WGS 1984 UTM Zone 39S Datum: WGS 1984 Projection: UTM Units: Meter Datum Shift: 500000 Easting Zone: 39S</p> <p>DATA SOURCES Survey of Kenya Bitter Geological Survey 2015 County Government of Makueni</p> <p>DISCLAIMER THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES</p>	<p>CLIENT</p> <div style="text-align: center;"> <p>COUNTY GOVERNMENT OF MAKUENI</p> </div> <p>PARTNERS</p> <div style="display: flex; justify-content: space-around;"> </div>
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Renewable Energy

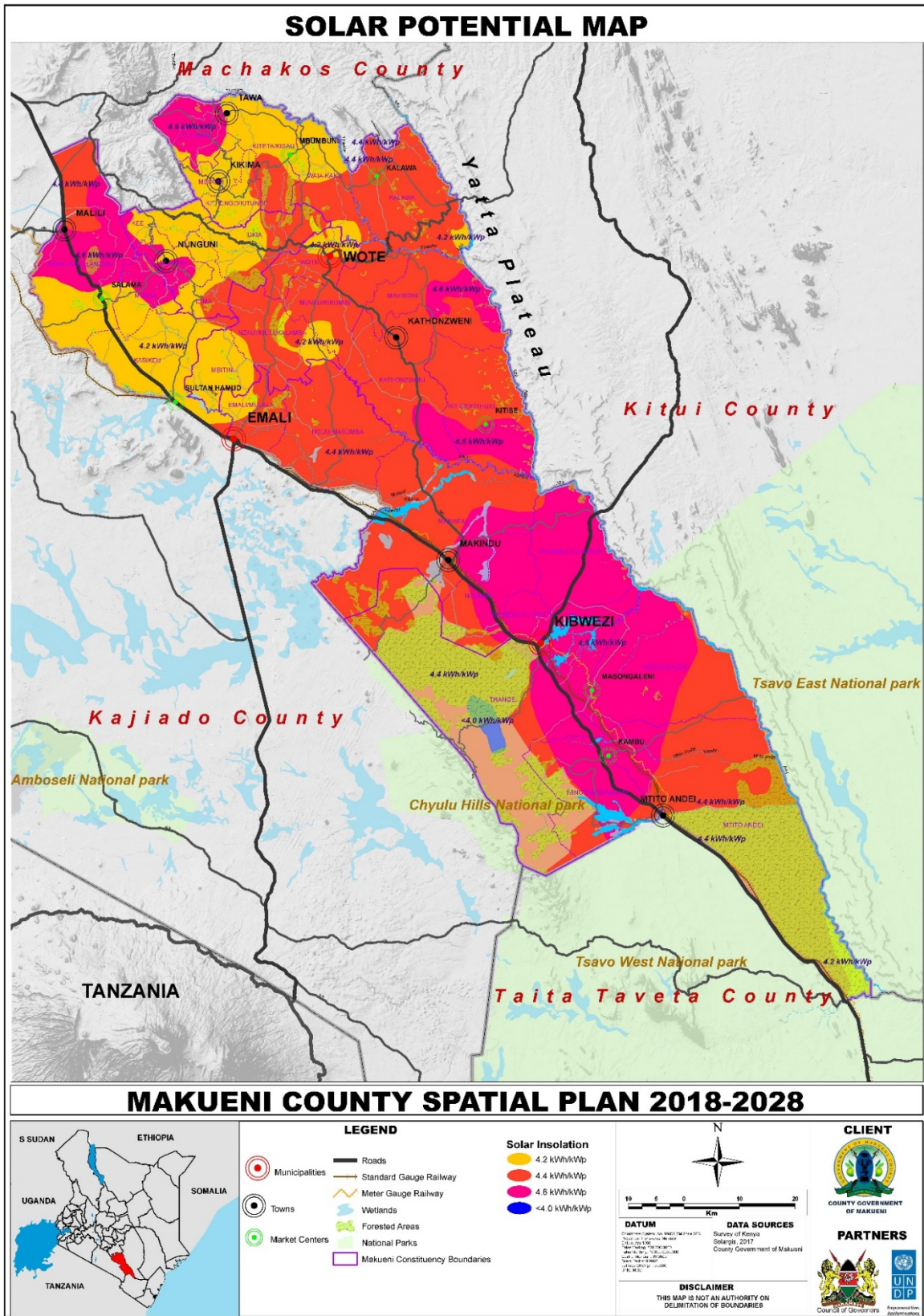
Makueni County has a high potential for solar power generation with 26 sunny days per month, and with an average County-wide insolation of 4.2-4.4kwh/kwp.

However, solar energy utilization in the County is low at 3.8%. Kitonyoni rural market in the county for example, operates an off-grid 13.5kWp photovoltaic solar plant from 2012 that benefits more than 3,000 residents from Kitonyoni Sub County. Kithuki solar power mini grid project benefits about 100 households in Kithuki sub location.

Wind energy equally remains unexploited despite wind speeds that average 9.6kmph in the lowlands and 15.4kmph on the hills. These are adequate for generation through small wind electric turbines (9kmph) and utility scale generation for domestic and industrial use (13kmph). Highest potential sites for wind energy generation are in Nzeveni area and parts of Chyullu. Due to the many hills located in the area: Chyulu hills, Luani hills, Mbooni hills and Kilungu hills.

There are no hydro-power plants in the County, as most of the rivers in the county are seasonal, making it impossible to exploit them for hydro-power energy generation. Construction of Thwake multi-purpose dam is currently ongoing, and it is anticipated to generate 17.6 megawatts of hydro power per day.





Forests

The County has 5 gazetted forests including Makuli, Nthangu, Mbooni, Kibwezi, Kilungu and 28 trust land Forests, which cover 152 km². There are 3 non-gazetted forests which cover 40km².

Table 1: Forests in the County

County	Forest Name
Ukha	Iuani Hills
	Mutambuukoni/Kikandu
	Makuli/Ndumoni
	Kyuki
Tulimani	Mutula Forest
	Matindini
	Kyamukumu (Mukuyuni)
	Makongo
	Tututha
	Tulimani
Wote-Nziu	Kakima
	Ivumbu
	South Mbooni
	Mbooni/Tulimani
	Nthangu Hill
	Kithungo-Kithundu	Kitundu (2) -Kitundu- Kanzuki Hill
Katende- Kithungo- Katende	
Mataa - Kithungo/Kitundu	
Utangwa Hill	
Ilima	Muangini Hill
	Ngai Shrine.
Kilungu	Ilima Hill
	Kilungu Hills
Muvau-Kikumini	Kilisa Gulleys (Muvau)
	Nguumo Gulleys(Muvau)
	Muyuni (Muvau)
Mavindini	Kwa Kinyumu Gulleys(Kikumini)
	Kwa Kavuthi Gulleys
	Mathangathi
	Kanthuni Hill
	Mikisi
	Syelia(Katithi)
Mbooni	Kwa Katia (Ngosini)
	Miangeni
	Ndualani(Muusini)
	Yekanga Hill
	Kamuithi Hill
	Nzeveni Gullies
Thange	Nduni -Mbooni
	Ngunguu -Mbooni - Ngunguu
	South Mbooni- Mbooni/Tulimani-Syiluni
	Mukaatini- Mbooni
Nzaui-Kilili-Kalamba	Mulooni-Tulimani/Mbooni-Mulooni Hill
	Mbuini-Mbooni
Nzaui-Kilili-Kalamba	Kithasyu Hill
	Chyulu Hills
Nzaui-Kilili-Kalamba	-
	Nzaui Hill

Table 2: National Parks, Hills and KWS Camps

The county has; 3 national parks, 4 hills, 2 KWS camps. There are 97 animal types with a population of 20,360.

Population Distribution

The County's population stood at 884,527 people in 2009, growing to 1,002,979 people in 2018. The most populous areas are the upland areas of Kaiti and Mbooni sub-counties, with a population density of 248 and 195 people per square kilometer, respectively, followed by intermediate altitude areas of Kilome and Makueni with densities of 137pp/km² and 125pp/km², respectively. Kibwezi West and Kibwezi East are the least populated areas in the County at 79pp/km² and 60 pp/km² respectively. 88% of the county population lives in rural areas while 12% live in urban areas.

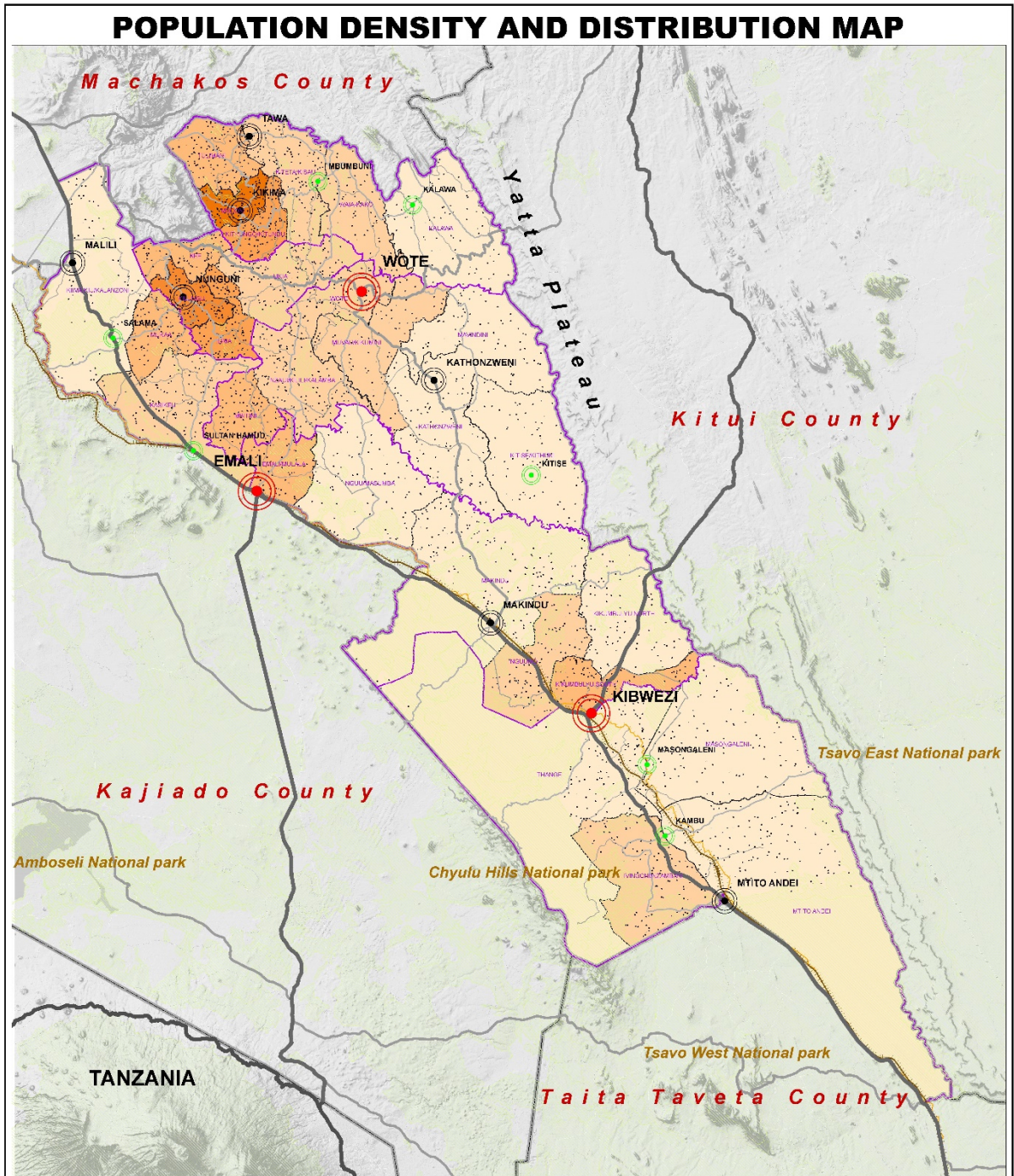
Rural Settlements

As of 2018, the rural population stood at 962,379 people implying that the county is majorly rural with 70% of the population deriving their livelihood from agriculture. Rural settlements in the County include: Kilungu, Ukia, Nzau, Kathonzweni, Kilome constituency, Mbooni ward, Kikumini, Kithunzi village, Kalii, Maikuu, Luani, Darajani, Kitonyoni, Athi and Kasunguni. Rural population currently stands at 972,379 persons.

Urbanization

Makueni County has an urbanization rate of 11.8%, with an urban population estimated at 8% of the total County population, accommodated in over 600 settlement clusters. Wote and Mito Andei are the major centers in the County. The County has other urban centres which are located along the highway and have a total population of 39,879 projected to be 45,233 in 2026. These include Machinery, Makindu and Kibwezi, Emali, Malili, Kambu, Kiundwani, Kiboko and Sultan Hamud.





MAKUENI COUNTY SPATIAL PLAN 2018-2028

	<p>LEGEND</p> <ul style="list-style-type: none"> Municipalities Towns Market Centers Roads Standard Gauge Railway Meter Gauge Railway Exclusions Makueni Constituency Boundaries 	<p>Population Distribution 1 Dot = 300</p> <p>Population Density (Km²)</p> <ul style="list-style-type: none"> 30-105 106-210 211-315 316-420 421-525 526-630 	<div style="text-align: center;"> </div> <p>DATUM County Government of Makueni</p> <p>DATA SOURCES Survey of Kenya County Government of Makueni</p> <p>DISCLAIMER THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES</p>	<p>CLIENT</p> <p>COUNTY GOVERNMENT OF MAKUENI</p> <p>PARTNERS</p> <p>Council of Governors National Government of Kenya</p>
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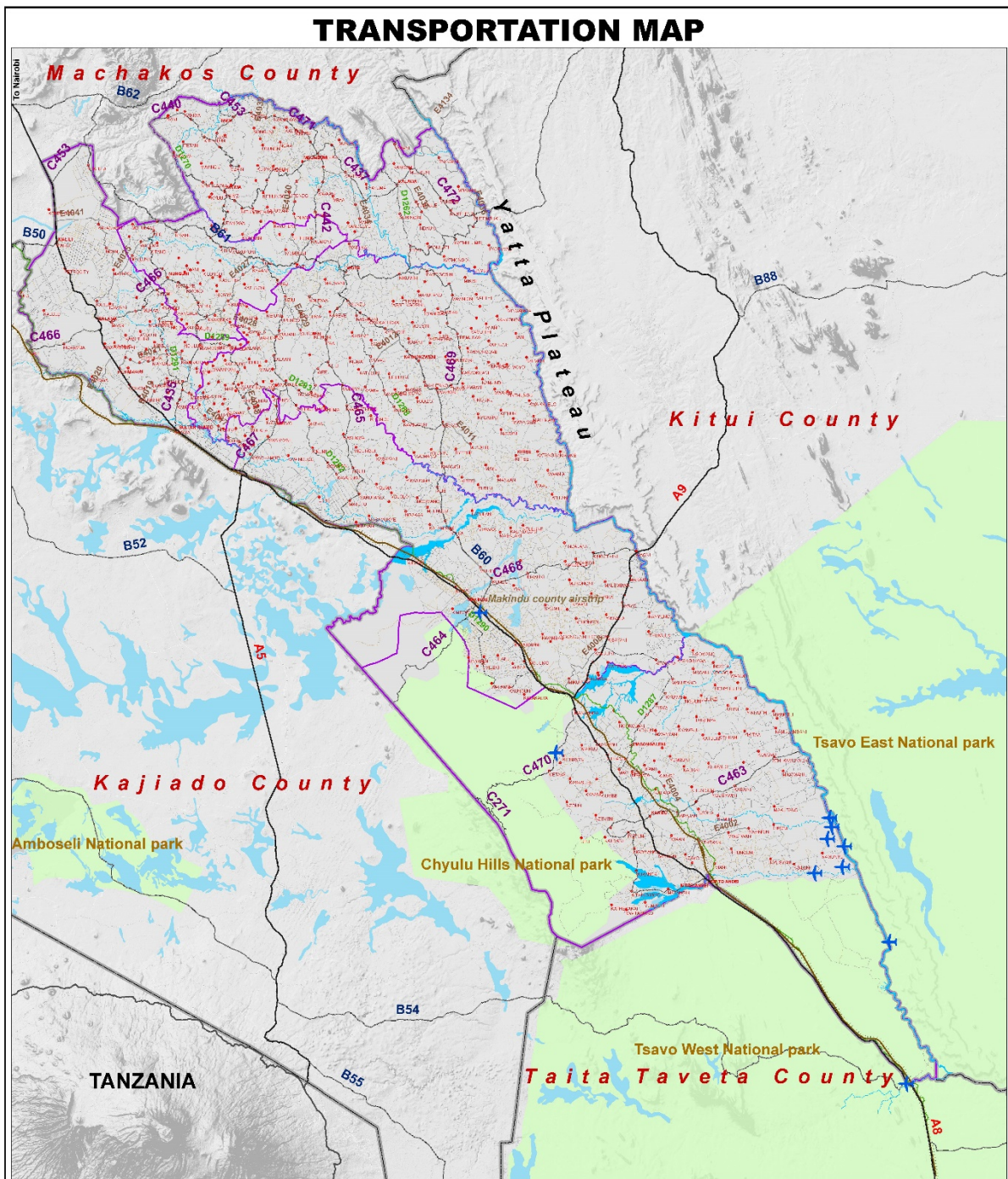
Transportation

Makueni County is strategically anchored within and connected to its context through an elaborate and hierarchical network of international rail and road trunks, national and regional highways. The Trans-African railroad corridor consisting of the A109 Highway and Railway corridor serves as the County's main connector to the outer world, connecting it to Kenya's capital Nairobi (80 Km northwest of Malili) and East Africa's busiest port of Mombasa (207km southeast of Tsavo Gate).

The County is also connected to Moshi in Tanzania through the A5 (200 Km south of Emali) and through the A6 (155 km west of Voi), with possible connection to Ethiopia and Somalia through the A9 (northbound from Kibwezi). Connectivity to neighboring Counties and capitals is also efficient. Connection to Machakos town is via the B60 (73 km west of Wote), to Kajiado via the B52 (97 km west of Emali), Kitui town via the A9 (144km north of Kibwezi) and Mwatate via the A109/A6 (253km southwest of Wote)

Access and circulation across the county territory is fairly adequate. Intersection of the B60 (Makindu-Wote-Machakos) and the C99/B61 (Emali-Wote-Mbaikini) regional trunks creates a scissor penetration across the county's northwestern half, while mirrored loops along the A109, namely the Tsavo-Kilanguni-Makindu, and Kibwezi-Kalembwani-Mtito Andei loops to the west and east respectively, enhance access and circulation across the southeastern half. Numerous other feeder roads further penetrate the County's interior.





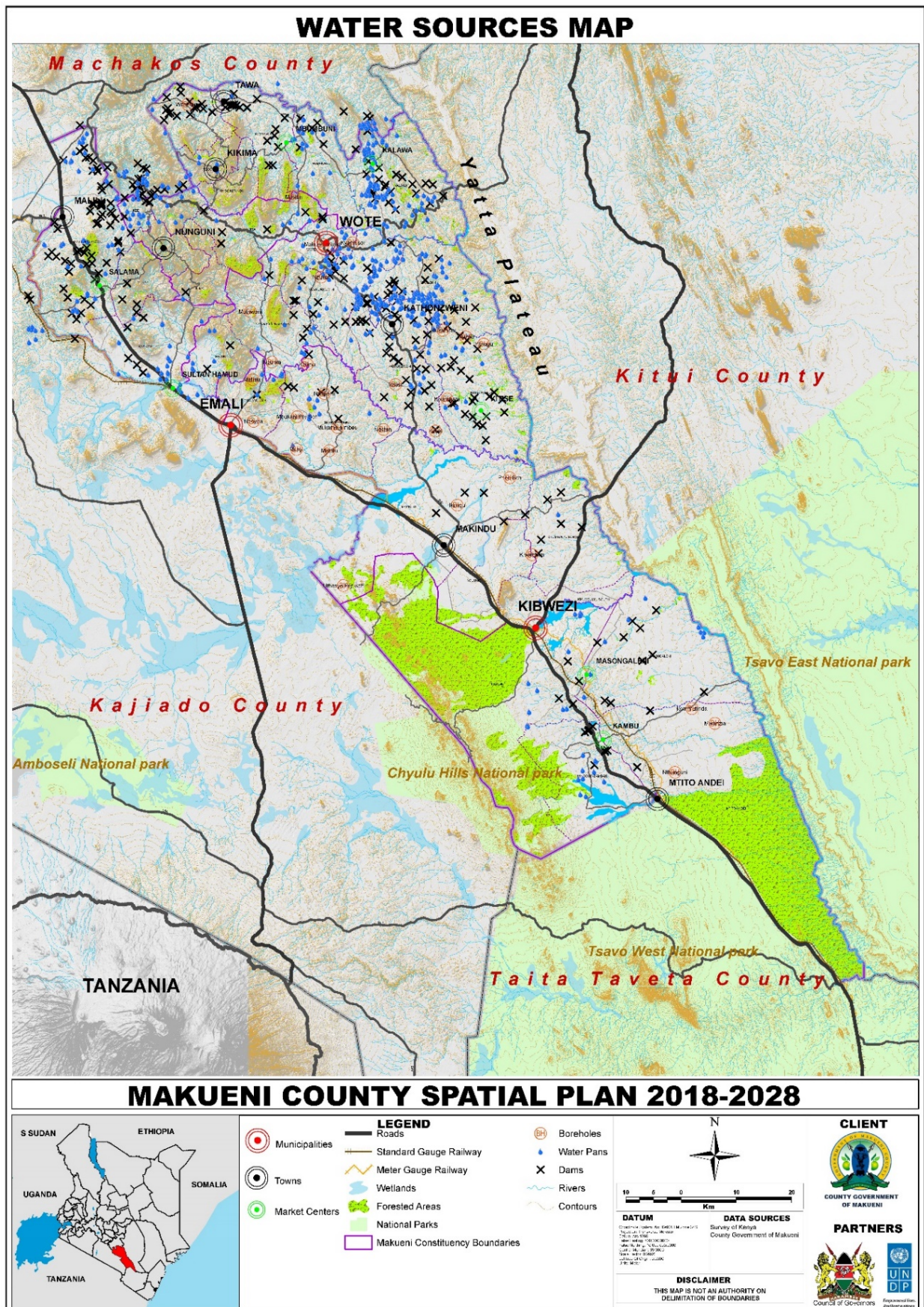
MAKUENI COUNTY SPATIAL PLAN 2018-2028

	<p style="text-align: center;">LEGEND</p> <ul style="list-style-type: none"> • Towns + Airstrip — Class A roads — Class B roads — Class C roads — Class D roads — Class E roads — Class F roads — Class G roads — Standard Gauge Railway — Meter Gauge Railway — Makueni Constituency Boundaries 	<p>DATUM Kenya Grid System (1960) / UTM Zone 37S</p> <p>DATA SOURCES Survey of Kenya County Government of Makueni</p> <p>DISCLAIMER THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES</p>	<p style="text-align: center;">CLIENT</p> <p style="text-align: center;">PARTNERS</p>
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Water Supply

The County relies on numerous sources to meet its water needs including; rivers, streams, springs, swamps, boreholes, shallow wells, earth and sand dams, and water pans. The river network is dense while the man-made sources are evenly distributed across the County territory. The sources are however not enough for the County's developmental needs.





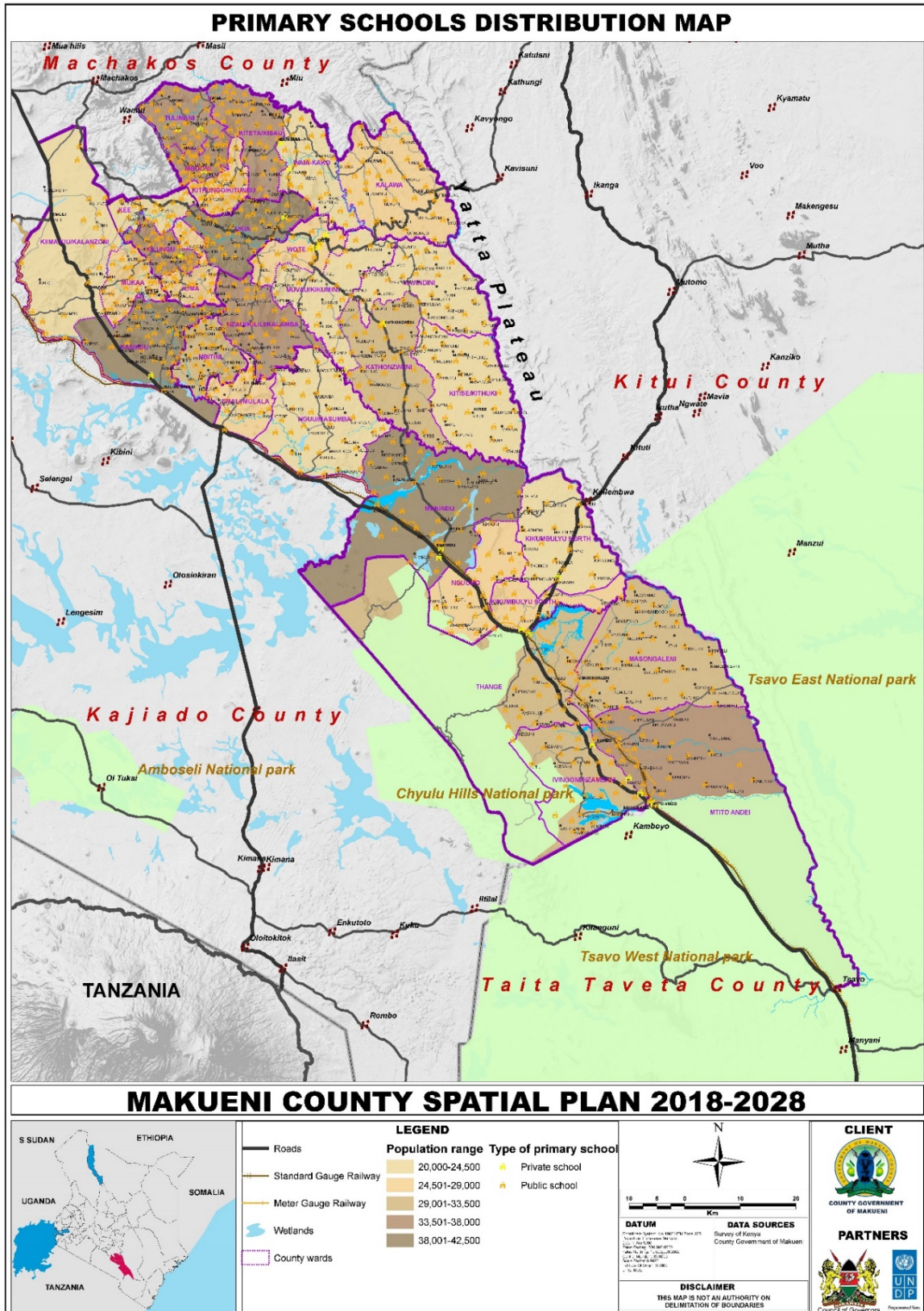
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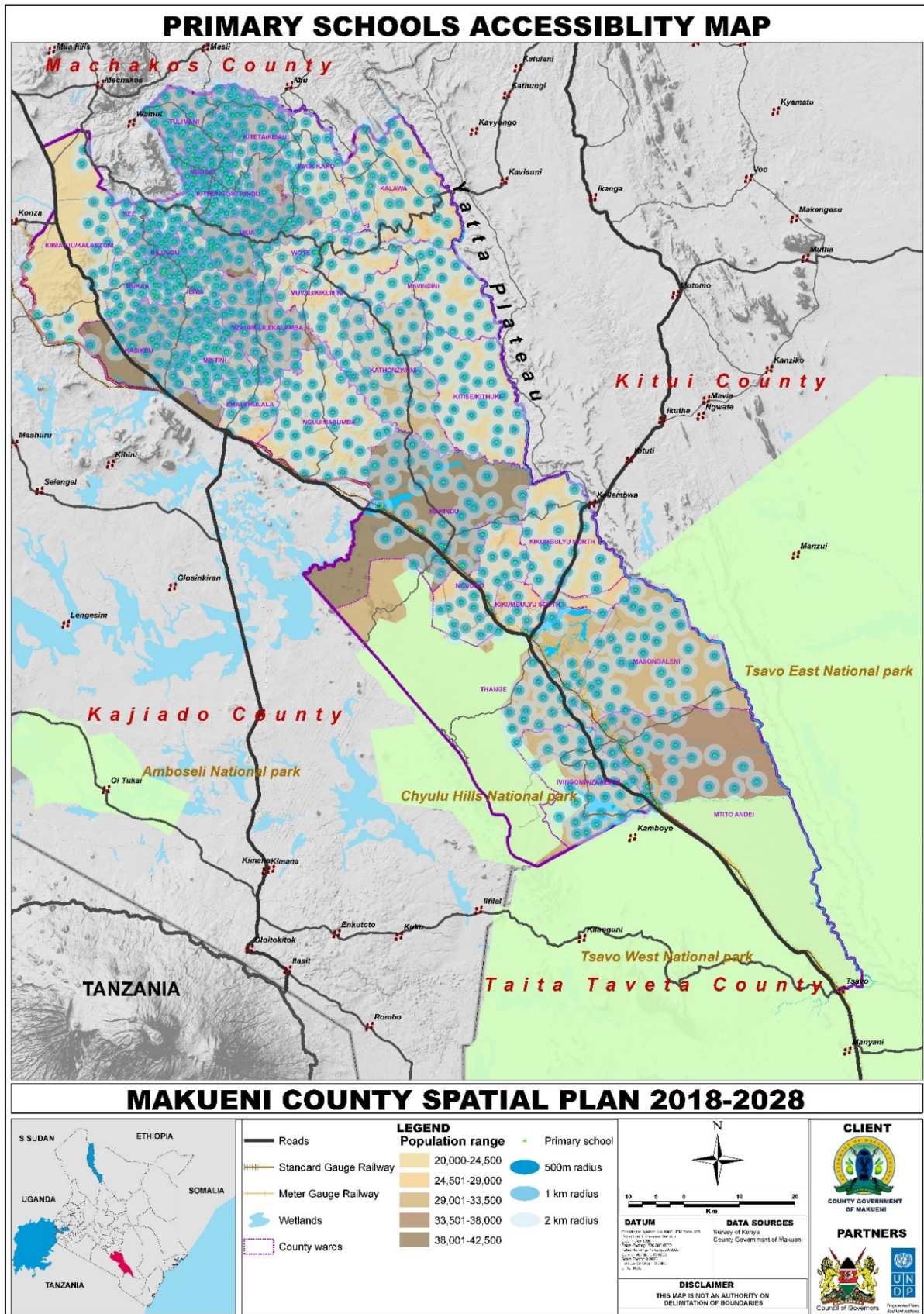
Water Sources												
Wards:	Rivers	Streams	Spring	Rock Catchment	Swamp	Earth Dams	Sand Dams	Boreholes	Shallow Wells	Water projects	Water Pan	Farm Ponds
Ukia	3	4	17			15	8	7	7			
Tulimani	4	4	4									
Kee			3				28	7	3		1	7
Wote-Nziu	1	1	1		3	2		9				
Kalawa	2											
Kisau-Kiteta	4	2										
Kithungo-Kithundu		3	4									
Ilima			28			6		29				
Kilungu	4	2				2		10	33			
Kako-Waia	1	3										
Muvau-Kikumini			1	3		7	7	8		2		
Mavindini				1		3						
Kitise-Kithuki	5					3		4				
Kathonzweni	1					22		17				
Mbooni	1	2	5									
Thange	1	4										
Mtito Andei	3			6								
Masongaleni						3		6			1	
Ivingoni-Nzambani						8	1	8				
Nzaui-Kilili-Kalamba			13		2	12		10				
Mbitini						8			5			

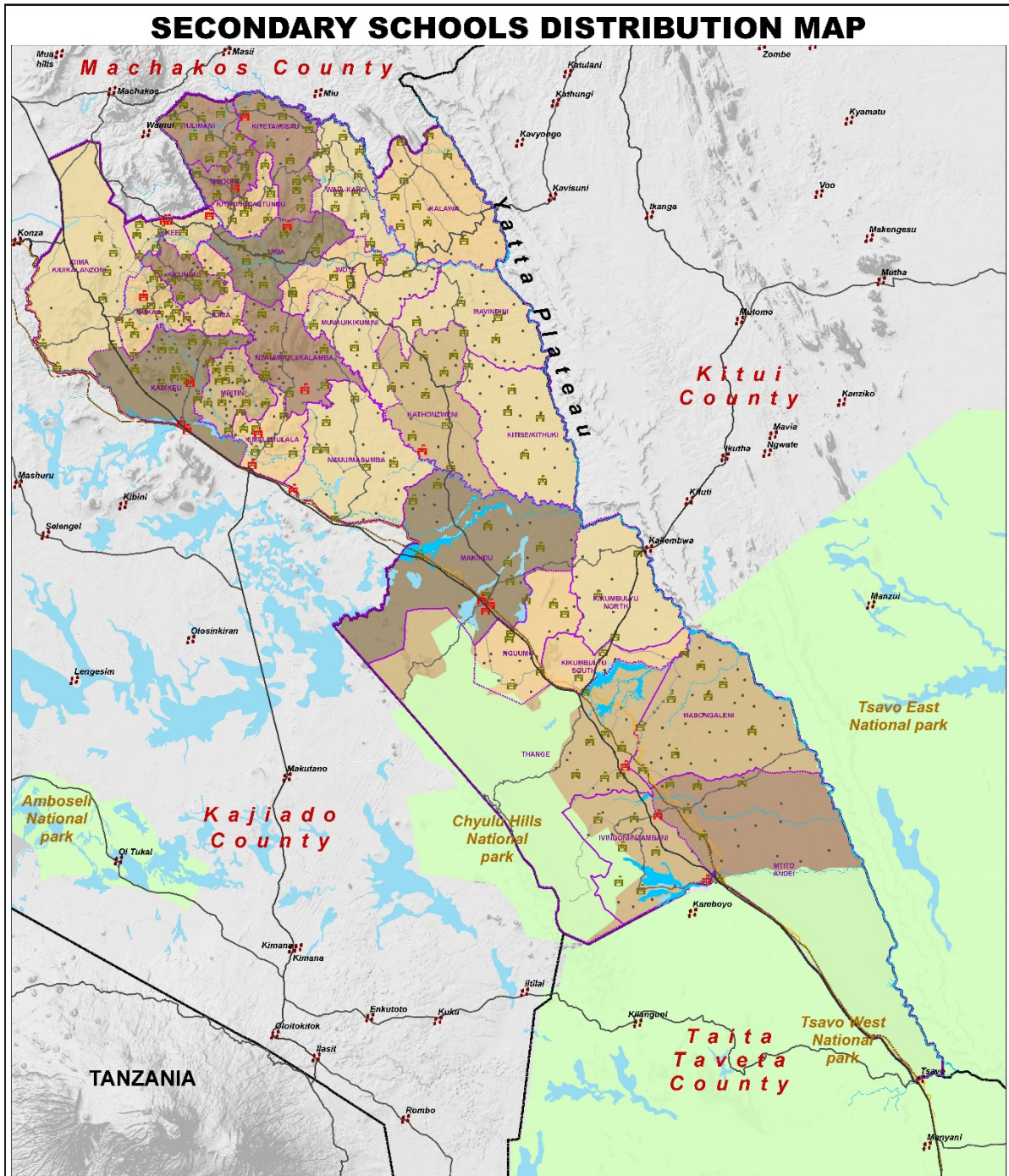
Education

Makueni County has a total of 1300 Early Childhood Development Education (ECDE) Centers. The County also has a total of 1021 primary schools, 968 of which are public and 53 of which are privately-owned.

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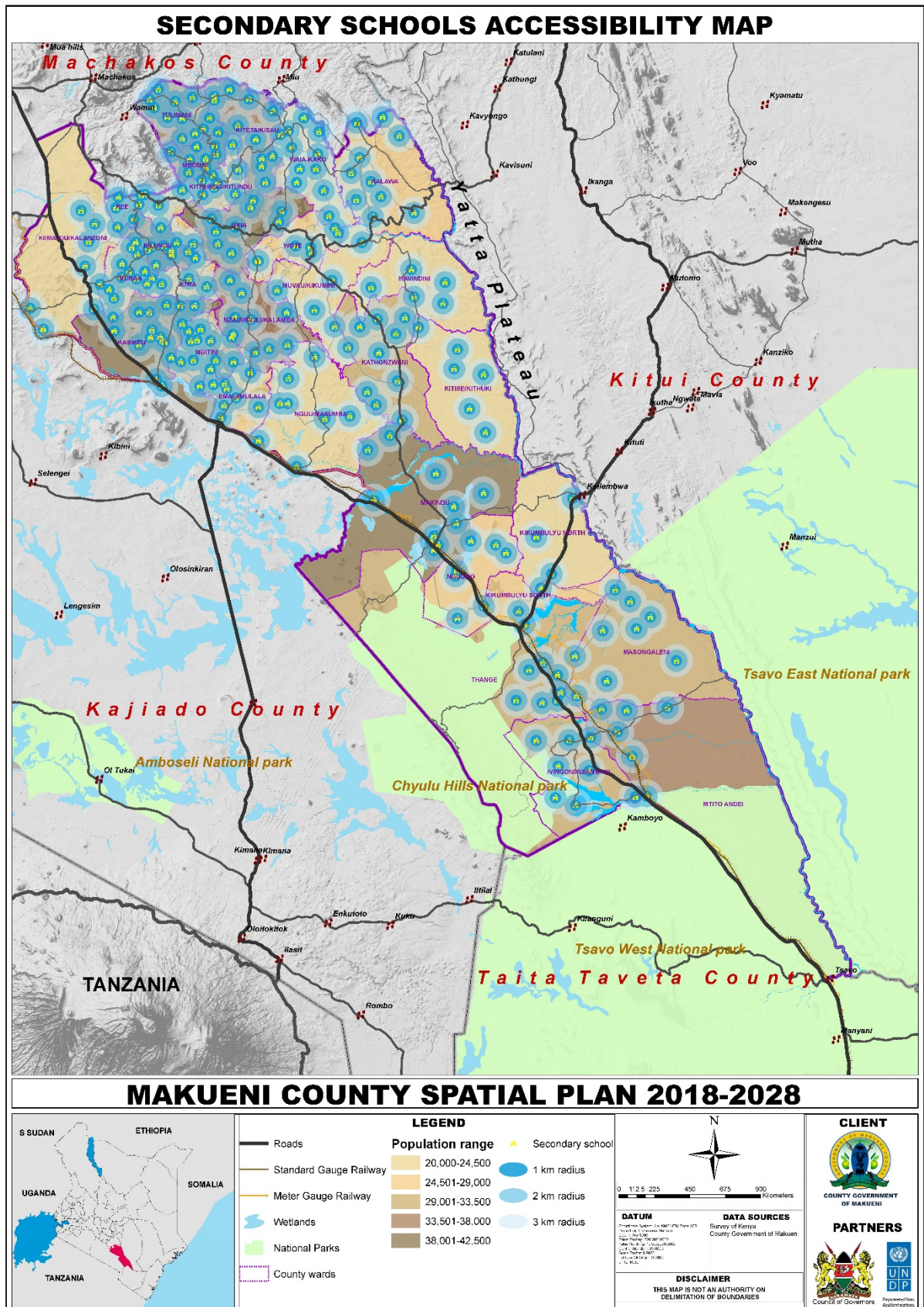


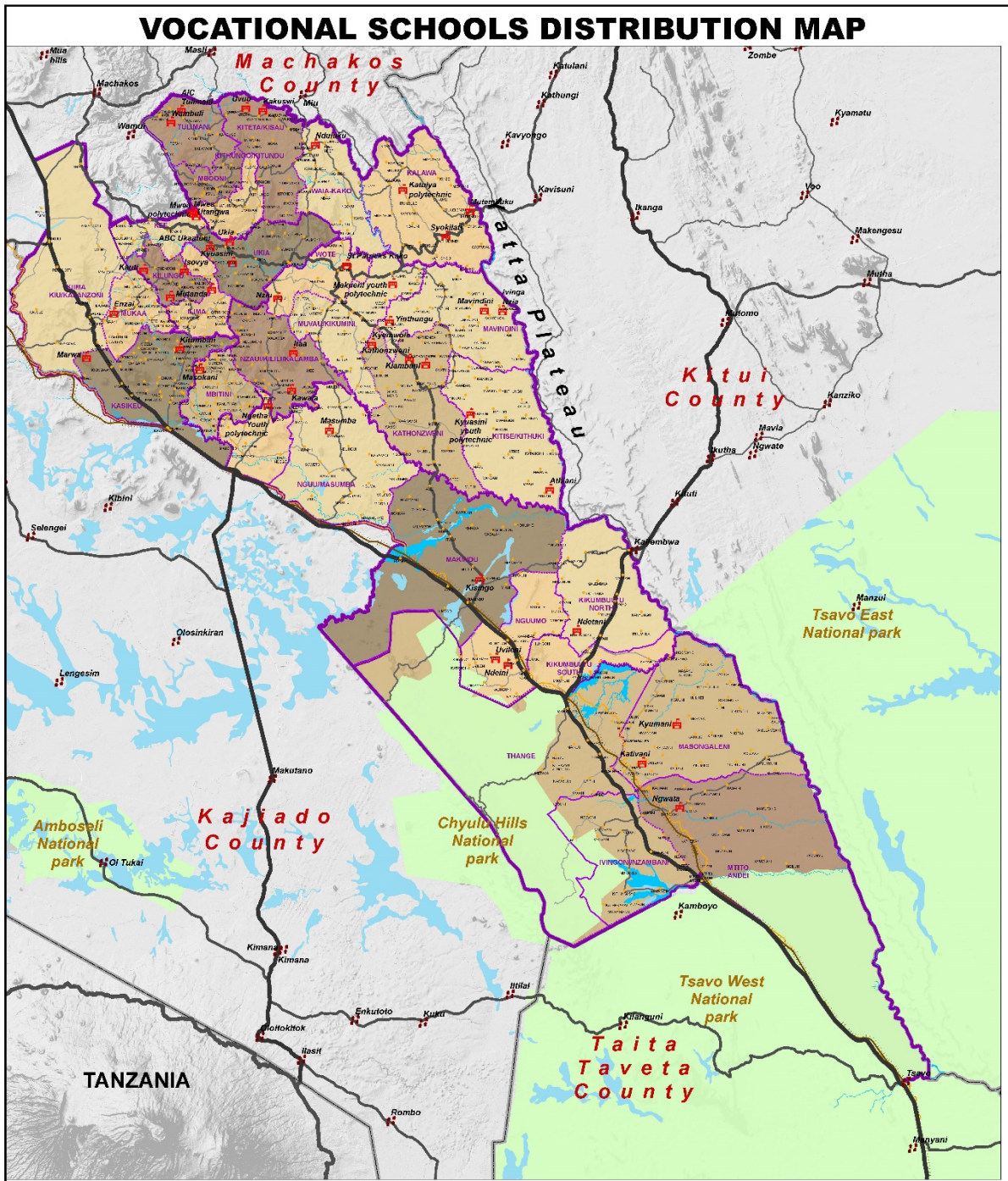




MAKUENI COUNTY SPATIAL PLAN 2018-2028

	<p>LEGEND</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">— Roads</td> <td style="border: none;">Population range</td> <td style="border: none;">Type of secondary school</td> </tr> <tr> <td style="border: none;">— Standard Gauge Railway</td> <td style="border: none;">20,000-24,500</td> <td style="border: none;">Private</td> </tr> <tr> <td style="border: none;">— Meter Gauge Railway</td> <td style="border: none;">24,501-29,000</td> <td style="border: none;">Public</td> </tr> <tr> <td style="border: none;">— Wetlands</td> <td style="border: none;">29,001-33,500</td> <td></td> </tr> <tr> <td style="border: none;">— County wards</td> <td style="border: none;">33,501-38,000</td> <td></td> </tr> <tr> <td></td> <td style="border: none;">38,001-42,500</td> <td></td> </tr> </table>	— Roads	Population range	Type of secondary school	— Standard Gauge Railway	20,000-24,500	Private	— Meter Gauge Railway	24,501-29,000	Public	— Wetlands	29,001-33,500		— County wards	33,501-38,000			38,001-42,500		<div style="text-align: center;"> </div> <p>DATUM County of Makeni (1960) (NAD 1960)</p> <p>DATA SOURCES Survey of Kenya County Government of Makeni</p> <p>DISCLAIMER THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES</p>	<p>CLIENT</p> <p style="text-align: center;">COUNTY GOVERNMENT OF MAKUENI</p> <p>PARTNERS</p> <p style="text-align: center;">UNDP County Government of Makeni</p>
— Roads	Population range	Type of secondary school																			
— Standard Gauge Railway	20,000-24,500	Private																			
— Meter Gauge Railway	24,501-29,000	Public																			
— Wetlands	29,001-33,500																				
— County wards	33,501-38,000																				
	38,001-42,500																				





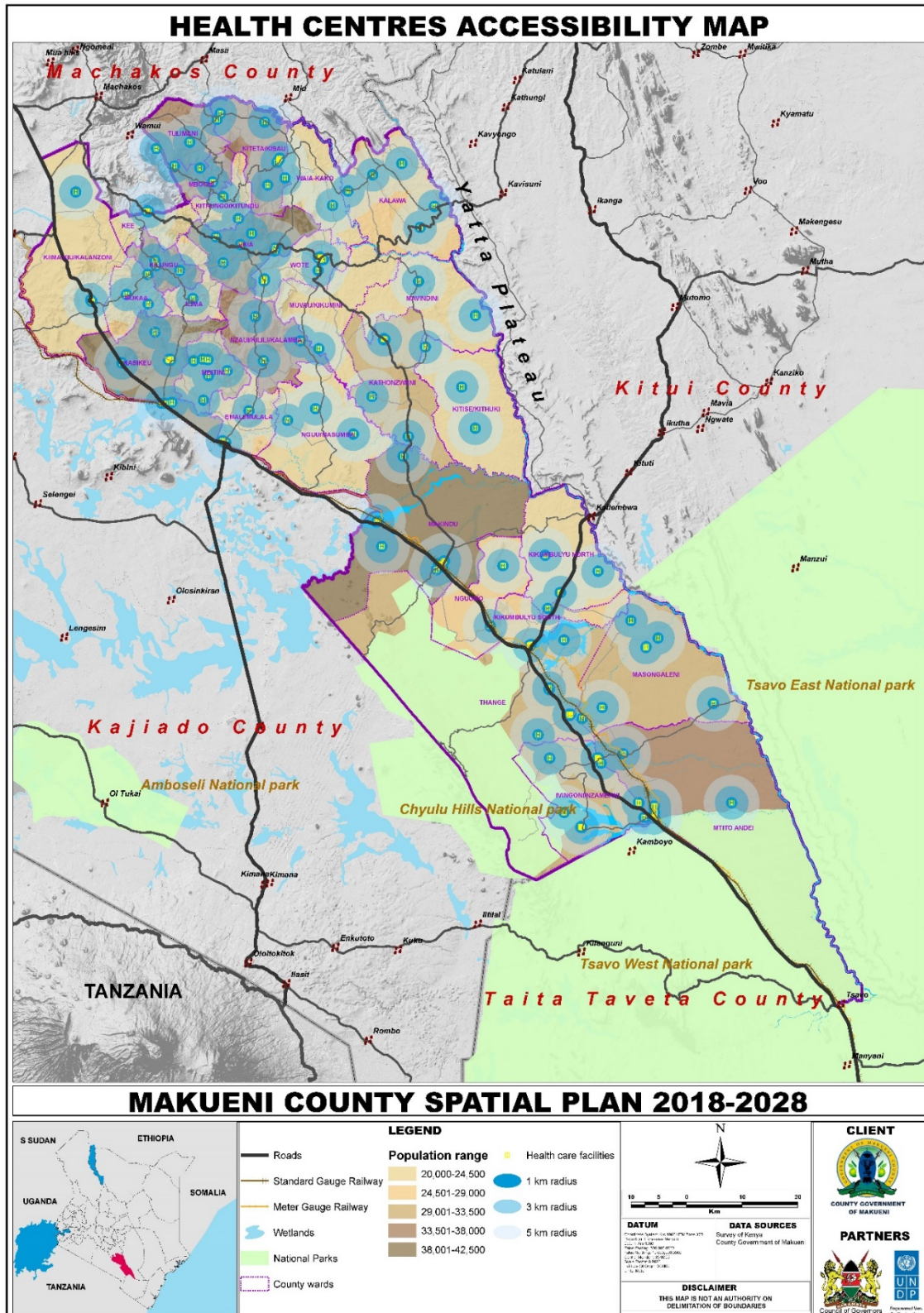
MAKUENI COUNTY SPATIAL PLAN 2018-2028

	<p style="text-align: center;">LEGEND</p> <ul style="list-style-type: none"> ● Towns Roads Standard Gauge Railway Meter Gauge Railway Wetlands National Parks County wards <p style="text-align: center;">Population range</p> <ul style="list-style-type: none"> 20,000-24,500 24,501-29,000 29,001-33,500 33,501-38,000 38,001-42,500 	<p style="text-align: center;">CTTI</p> <p>DATUM County Government of Makueni Survey of Kenya County Government of Makueni</p> <p>DATA SOURCES Survey of Kenya County Government of Makueni</p> <p style="text-align: center;">DISCLAIMER THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES</p>	<p style="text-align: center;">CLIENT</p> <p style="text-align: center;">PARTNERS</p>
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Health

Makueni County has a total of 314 health facilities: 1 County referral hospital, 43 level three hospitals previously referred to as health centers and 176 public dispensaries, thirteen (13) Level 4 public hospitals. The county has 2 private hospitals, 49 clinics and 30 dispensaries.

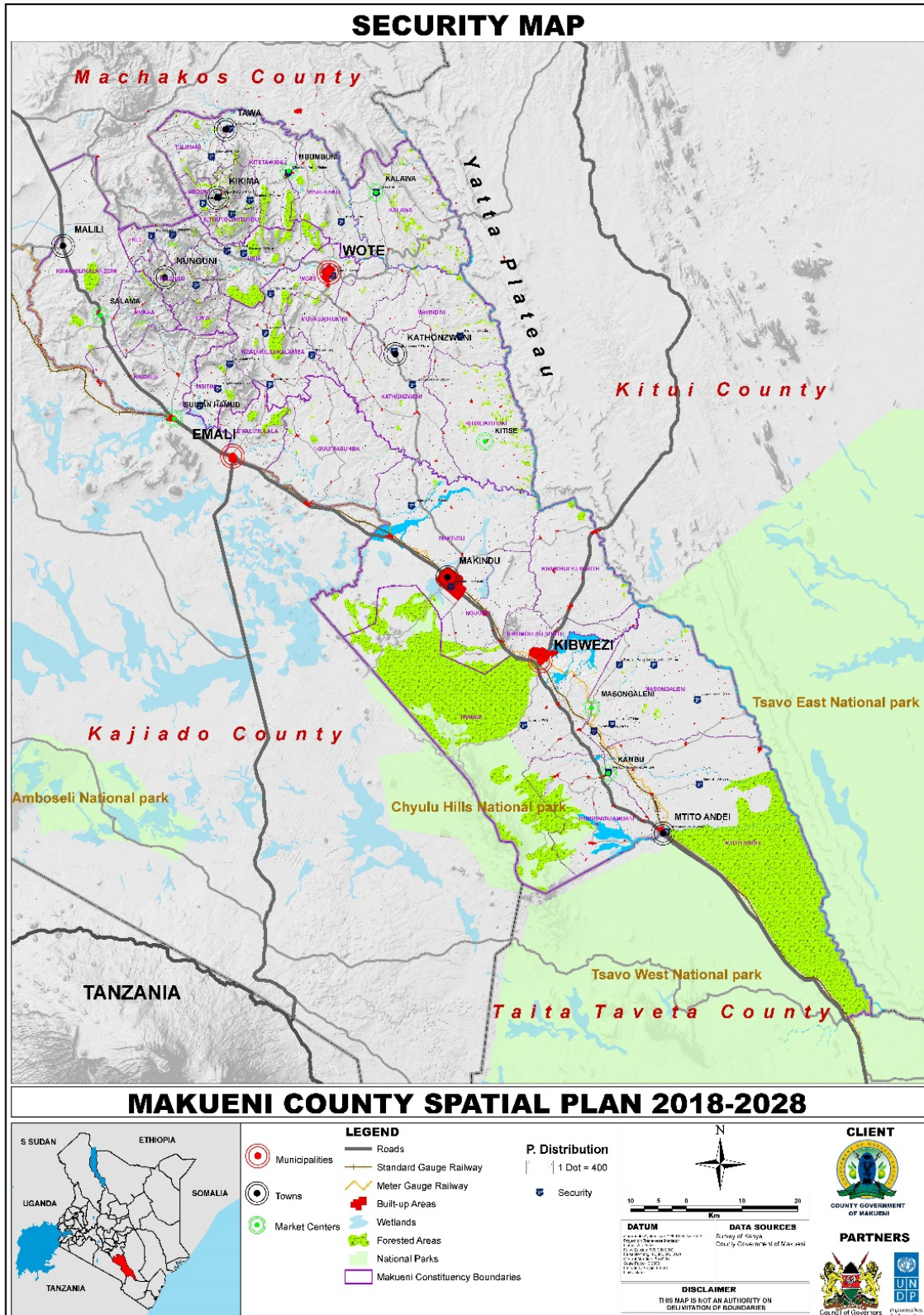
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Administration and Security

Makueni County has many administrative and security infrastructural facilities as detailed in the table below.

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2.2 Key Structuring Elements

Makueni's Existing Spatial structure may be viewed as resulting from seven components, each with distinct spatial characteristics and having a very specific influence on the form and nature of the County's territorial space. These influences may further be grouped into two broad sets of influences, namely; **buhi fY** and **\ i a Ub'UWj jhm'**. The first relates to a variety of geo-physical elements emanating from geo-technical processes linked with the earth formation, and climatic processes that support constitutive ecologies and ecosystems. These processes are further disaggregated into three sub-categories as follows;

1. Landscape Structure
2. Drainage Structure
3. Ecosystem Structure

The second set of influences relates to the variety of activities associated with the peopling and habituation of this landscape by humans, and may further be disaggregated into the following four sub-categories as follows;

4. Transport Structure
5. Settlement Structure
6. Land use Structure
7. Spatial Practice

The seven components are briefly described, and their essences captured in the following metaphors of space, and in the accompanying image-schematic.

&'&'% H Y @bXgWldY'Gfi Wi fY'

The County's most defining element is its landscape, which exhibits great variation in landforms. The landscape structure can be disaggregated into five major components as follows;



1. The **'Crying Hills of Mbooni and Kilungu** – the twined juxtaposition of two agglomerations of rounded, undulating and very steep elevations of limited extent is the representative landscape form of the County's northwest extent. The varied and picturesque landscape, in addition to their explicit aesthetic appeal, also function as the County's water towers,

hosting large underground aquifers that subsequently yield their ground waters into numerous wells and springs. During the rainy season, the aquifers completely fill up, releasing their overflow in streams that tear down the rock-face of numerous protuberant granitoid mounds. This very quality informs their christening as “crying hills”. The metaphor is however revealing of the current circumstance that these upland sub-territories find themselves, that of rampant destruction the once lush canopy that adorned their steep and fragile slopes, exposing them to degrading soil erosion.

2. The ***Unyielding Bulwark of Yatta*** – The remnants of the world's longest lava flow is over 300 Km in length, extending from the neighboring Ol Doinyo Sabuk Mountain and terminating at the Nyika Plateau. The lava flow rises over 100m from its neighbouring lands and flattens out at its top, forming a plateau that has a width ranging between 8 km in the Northwest and 1km in the remote Southeast. Running in parallel with the giant Athi River, the two-feature form Makueni's entire eastern border. The sheer length, height and breadth of this fascinating geological feature earns it the quality of an unyielding bulwark, breached only in a few sections where the height dips, and therefore inhibiting connections between Makueni County and its neighbouring Kitui County. The Yatta plateau also offers a picturesque backdrop along its entire length, thereby presenting immense possibilities for tourism exploitation.



3. The ***Restless Fireplaces of Chyulu*** - The Chyulu Hills, located along Makueni's southwestern edge, is a mountain range formed out of quaternary volcanic activity. The resulting volcanic field is a 100km long Northwest-Southeast elongation that spreads to an area of 120km² and peaks at 2188m above sea level. Its 170 cinder cones make it one of Kenya's largest volcanic crater-fields. Chyulu is one of the world's youngest mountains, the last two eruptions of Shaitani and Chainu occurring in as recent as 1856, and culminating in an 8km long, 1.6km wide and 5m thick charcoal black lava flow of the Chyulu lava field. The fact of its youth, and the dangers associated with the labyrinth of caves concealed beneath the largely unweathered rocky terrain earn the hills the title of “restless fireplace”. Beyond the dangers, the Chyulu formations are replete with asset values. The rocks are rich in minerals, including highly prized gemstones, although large areas of this mineral-rich zone remain untouched. In addition, the Chyulu Hills constitute one of Kenya's

most important dryland watersheds, the cinder cones playing an active role in intercepting rainfall across the landscape, which in turn recharges associated groundwater systems. The watershed takes the form of a series of underground rivers and streams that gush out into equally captivating foothill springs and surface rivers such as the Kibwezi and Tsavo Rivers. The combined watershed discharge is about 150m³/year. The undulated terrain accounts for one of the most breathtaking landscapes in the region, the silhouettes and view vistas are of immense touristic value. These, together with the diverse flora and fauna and caves worth exploring, and the thrilling legend of Mwashetani, the local Taita community's colloquial for "*the devil's abode*", can be tapped to activate a vibrant nature-based tourism. These values are the reason why the surrounding national park was Gazetted in 1983, in appendage to the earlier-established and sprawling Tsavo West National Park.



4. The ***Corrugated Foothills at Kathonzweni*** – Further east, the mountain uplands of Mbooni, Kilungu and Chyulu give way to an extensive and gentle-inclined middle altitude (259m-747m a.s.l) terrain that eases out along the Mwooni River. The foothills, which constitute about a quarter of the County's territorial space, has a characteristically corrugated landscape of northeast-southeast oriented low lying ridges hewn out of the eroding influence of numerous rivers and tributaries. The foothills host some of the County's well-drained and fertile soils, and farmlands, situated in a moderate climate zone, are known to be the County's fruit basket.

5. The **Whistling Plains at Kibwezi** – Beyond the foothills, the landscape flattens into a vast, open and gently-inclined plain that stretches between the Mwooni and Mtito Andei Rivers. The characteristically featureless flatland is covered by savannah grasslands and minimally ornamented with scattered bush. This landscape, which traverse most of Kibwezi east and West Sub-counties, comprise about a quarter of the County’s territory. Its soils are fertile, but crop productivity is inhibited by poor rainfall and the low density of rivers. The lands are however suitable for livestock ranching. A swirling wind sweeps across these lands, presenting immense potential for renewable energy production.



6. The **Sleeping Barrens of Mtito Andei** – Makueni’s easternmost tip consist of a narrow strip of land wedged between the Yatta Plateau to the east, Mtito Andei and Tsavo Rivers to the northwest and southeast respectively, and the northern corridor’s rail-road band to the southwest. These sun-scorched, wind-swept, flood-eroded flatlands spot scattered bush and stunted brush vegetation. Soils are of relatively poor quality, mixed, as it were, with fragments and pebbles of weathered metamorphic sheet rock. The flats, completely devoid of grass cover, are subject to sheet erosion in times of heavy flooding, and wind erosion during prolonged draughts. Over time, their denudation has rendered these flats unsuitable for crop cultivation. The absence of human activity, and their mostly desolate



surfaces inform their christening as “sleeping barrens”. Incidentally, these same qualities make this wilderness apt to a wildlife inhabitation.

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The County’s drainage structure, which is influenced by its landform structure, consists of three interconnected riverine components, each successively feeding into the other. The three, and their defining physical character, intrinsic qualities, and structuring function, may be described as follows;

1. The **Perennial Raindrops** – a dense waterway network comprising of springs, streams and small rivers that grace the steep hillsides of the County’s main water towers to the northwest, the *Crying Hills* of Mbooni and Kilungu. The tributaries deploy the numerous gorges and vales that are etched upon the mountain slopes to convey their waters to larger rivers that circumvent the foot hills. Their waters they carry are clear, thanks to the dense tree canopy, the elaborate root system which performs a filtration function and prevention of soil erosion-induced sedimentation. The use of “perennial raindrops” as a metaphor to invoke their quality as ever yielding sources and uninterrupted flows of clean, potable water may not therefore be an overstatement. While so doing, the streams irrigate the contoured benches that are emblematic of Makueni’s cultivated upland croplands, thereby rendering them most productive of all of the County’s production areas. The watershed, even while nourishing the land, is however delicate and susceptible to degradation by deforestation and intense cultivation, and subsequently need protection.



2. The **Linear Aquifers** – The tributaries subsequently discharge their waters into another formation of larger major rivers at the foothills, including; the Ngwani, Thwake, Kaiti Rivers among others. By the time the water reaches here, they collect a lot of sediments from the sandy loams of nearby farmlands, upon which the once clear potable waters acquire a distinctly reddish-brown colour not fit for direct consumption, hence their christening as *“Blood Arteries”*. These larger rivers eventually convey the murky waters into the giant Athi River. The rivers deposit and retain a lot of sand in their beds. By so doing, they conceal the presence of the waters beneath and giving the impression that they are dry, especially during the dry season. These *“linear aquifers”* are evenly distributed across the County and form a critical source of water for Makueni’s residents throughout the year. The sand, a construction material that is in high demand, is often harvested and transported to larger

towns and cities booming with construction activity. Uncontrolled sand harvesting is however posing a threat by diminishing the potential water yield.



3. The ***Pulsating Sponge*** – The linear water channels are complemented by a series of wetlands that occupy the cleavages formed between various upland hill mounds, and as well in depressed and poorly drained areas of the gently-inclined midlands and bottomland flats. These areas, like the sandy riverbeds, are likewise filled with sand. And whereas some may appear like small lakes during the rainy season, the equally deploy their settled sediments to conceal their precious substance resting underneath. This seasonal variation in surface qualities is reminiscent of a *“pulsating sponge”*, brim-soaked and dripping during the rainy season and seemingly solid-dry during the dry season. These wetlands serve to expand access to water throughout the County. They however face threats like those faced by the sandy rivers.



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The County's ecology may be disaggregated into three components, namely; forests, savannahs and bushland. Their qualities, pattern of distribution across the County's territorial space, as well as their structuring influences, are as follows;

1. The **Green Lungs** – Makueni has a limited stock of gazetted forests, in total covering 153 KM². The majority of these are situated in the uplands of Mbooni and Kilungu, although numerous other trust-land forests of limited expanse dot the County’s landscape. Overall forest cover could however be higher, especially when riparian forests and private



woodlots are factored into the computation. Collectively, these forests represent a welcome breather in the face of a mostly hot climate and have a critical function in shaping the County’s weather patterns. If expanded, these “green lungs” have the potential to significantly influence and reshape the County’s climatic patterns, and this, to desired effect. Their dedicated expansion could also see the County play a more expanded role in climate change adaptation and reversing the effects of global warming.

2. The **Hopeful Savannah** - The lowlands of Kibwezi host a variety of indigenous grasses. In their natural state, these grasslands remain poorly developed, as they are crowded out



by a thick infestation of brushes, thorn and thistle. The grasses serve to bind the loose and fragile soils and shielding them from erosive weather elements. They are therefore not only an important ally in aiding soil conservation efforts and preserving their fertility but help in combating desertification. However, the once lush savannas are under constant

threat of extinction, replaced as it were, by conversion of rangelands into croplands. Their successive cultivation and overgrazing expose the soil to sheet and wind erosion. They however remain “*hopeful*” with regards to their ability to answer to their call, and subject to a reversal of unsuitable land use practice, and promotion of suitable ones.

3. The **Restful Sanctuary** – The lowlands approaching the Coastal Nyika plateau, as well as those surrounding the Chyulu Hills volcanic fields are somewhat marginal barrens, courtesy of their thin and rocky soil overlay. Consequently, they play host to an equally borderline vegetative covering that combines stunted brush, thistle and spot grasses. These qualities have served to stem any encroachment by human activity, in turn making these undisturbed areas “*restful sanctuaries*” for a variety of wildlife species. There is however need for these wildlife ecosystems to be conserved and protected from debilitating effects of climate change, and wildlife poaching places.



4.2.3 Transportation

Transportation plays the facilitative role of *connecting* the County to its enveloping region, enhancing *access* into the hinterland, and *structuring* the pattern of emergent settlements and land uses. Makueni’s transport structure consists of the following elements, each with a distinct structure, quality and function.

1. The **Zed Connector** – The County is connected to its larger territorial context by a system of international and national trunk roads. The first of this is the northeast-southeast oriented Trans-African railroad corridor (the A109), which connects the coastal port city of Mombasa with Kenya’s Capital Nairobi. The corridor, which traverses the County along its southwestern border, also serves as its main spine. The county is also connected to Tanzania through the Emali-Loitokitok Road (previously C102 but re-classified A₁), and to Kitui and Northern Kenya through the Kibwezi-Kiaoni Road (previously B₁ but re-classified A₁). The two roads, when looped back to the A109 via the Voi-Mwatate-Moshi and Kyumvi-Machakos-Kitui Roads, respectively, form a “*broken Z traverse structure*”. The County can leverage upon this structure to improve its connectivity to the region.

2. The **Anchoring Spine** – The County is securely anchored in its setting by the Trans-African railroad corridor (the A109), which intertwines six infrastructural strands including the old metre-gauge railway, the new standard gauge railway, the old and new Mombasa highways, and two lines of the national oil pipeline. Together, these juxtaposed mobility and conveyance conduits have evolved to function as the County's *Anchoring Spine*. They also serve as the primary lifeline feeder that facilitates the entry of goods and services from the outer region, and the means by which Makueni's people's and produce connect to and access external networks and markets.
3. The **Penetrator Catapult** – The seamless flow of traffic along the *Anchoring Spine* is intercepted at four points by a number of regional connectors including the Kibwezi-Kiaoni Road (B7), the Makindu-Wote Road, Salama-Ianzoni (C99) Road and Emali-Ukia (D515) Road. These northbound roads form a catapult structure with the A109 to usher in traffic into Makueni's hinterland.
4. The **Open Scissor Arterial** – First level penetration into the County is made possible through two transportation channels that traverse the County's interior space. The first of these is formed through the joining of the Makindu-Wote and Wote-Kalamba-Tawa Roads. The second brings together, in succession, Emali-Ukia (D515) and Kyambalasi-Mbooni Roads. These northbound accesses use the ridge structures of Mbooni and Kilungu Hills to transcend limitations imposed by their steep slopes, thereby making connection between the midlands and highlands possible. The roads share a 10km connection between Kyambalasi and Wote, their subsequent intersection creating an "open scissor" shape. This way, they serve as primary arterials, offering maximum access to the County's northwestern half. The roads that make up this scissor arterial are however in very poor condition both in design and surface qualities, inhibiting its function as a facilitator of access and circulation within the hinterland.
5. The **Looped Arterial** – the County's southeastern and narrowed half is wedged between the twin Athi/Yatta bulwark and the A109-edged Chyulu Hills National Park. Both features are insurmountable from a roads construction perspective. However, the characteristically flat lay of the land in between makes it possible to create arterials that depart from and return to the A109 in loops of different shapes and sizes. These "*loop arterials*", while circumventing the structural limitations of the wedge, serve to maximize access within it.

The **Tangled Feeder Web** – The second-level systems of arterials give way to a more elaborate system of smaller tertiary accesses. The dense web of feeders serves to facilitate maximum penetration to local areas and offer proximate access to numerous livelihood support activities. They also serve anchor to the rural settlement structure.

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The peopling and settling upon Makueni's territorial space is both a factor of the assets furnished by its varied landscape and host ecologies, the facilitation of the drainage framework, and the access and anchorage possibilities presented by the transport structure. Consequently, the emergent settlement structure invokes three metaphors of space that interpret the spatial configuration, structural function and essence in relation to three types of settlement formations as follows;

1. The **Necklace Urbanization** – The anchoring properties of the A109 corridor spine have overtime assisted the sprouting of several higher-level urban settlements at various intervals along the highway. When combined with similar anchoring attributes of the *Zed Connector* and *Penetrator Catapult*, a clear pattern of "*interval urbanization*" starts to

emerge around and across the County's territorial space. The pattern invokes the image of a "beaded necklace", with these higher-level roads mimicking the strand and urban centers the beads in a closed necklace. This stringing of higher-level urban centers along the region's key connectors and arterials has the capacity to effectively position the country in the broader regional setting and support the emergence of a vibrant externally-oriented County economy by facilitating access of local produce to external markets. This, especially as these centers are already serving as hubs for higher-level manufacturing of the County's raw materials and produce, and as well trade and commerce centers.

2. The **Networked Urban Constellation** – The pattern of interior urbanization is to a great extent the outcome of the penetrative properties of the *scissor* and *loop arterials* as described above, and to a smaller extent, the *tertiary feeder web* accesses. The pattern is especially clearly observable in the upland and midland areas, where high population densities have intersected with a challenging undulating topography to necessitate the establishment of numerous market centers. The density of urban centers therefore serves to circumvent limitations imposed by the area's challenging topography regarding resident's access to social services and consumable goods. Likewise, it furnishes a suitable structure by which residents participate in economy-building activities through first-level value-adding produce processing and marketing.

3. The **Spotted Rural Dispersal** – The pattern of rural inhabitation is, to a certain extent, a product of the dense and intricate lacework of local feeder roads. Rural homesteads however tend to be embedded within the inner confines of farm lots and may not necessarily be aligned to the road network. Land fragmentation and increased settlement activity in the County's interior and rural hinterland, has created a settlement structure that of a dispersal that mimics a "spotted canvas". This is especially the case in the lowlands where the characteristically flat terrain does not present any structural barriers to settlement. Consequently, the rural dispersal remains largely undifferentiated and un-patterned. This presents numerous challenges, especially with regards to provision of line and reticulated services such as electricity, communication and water supply.

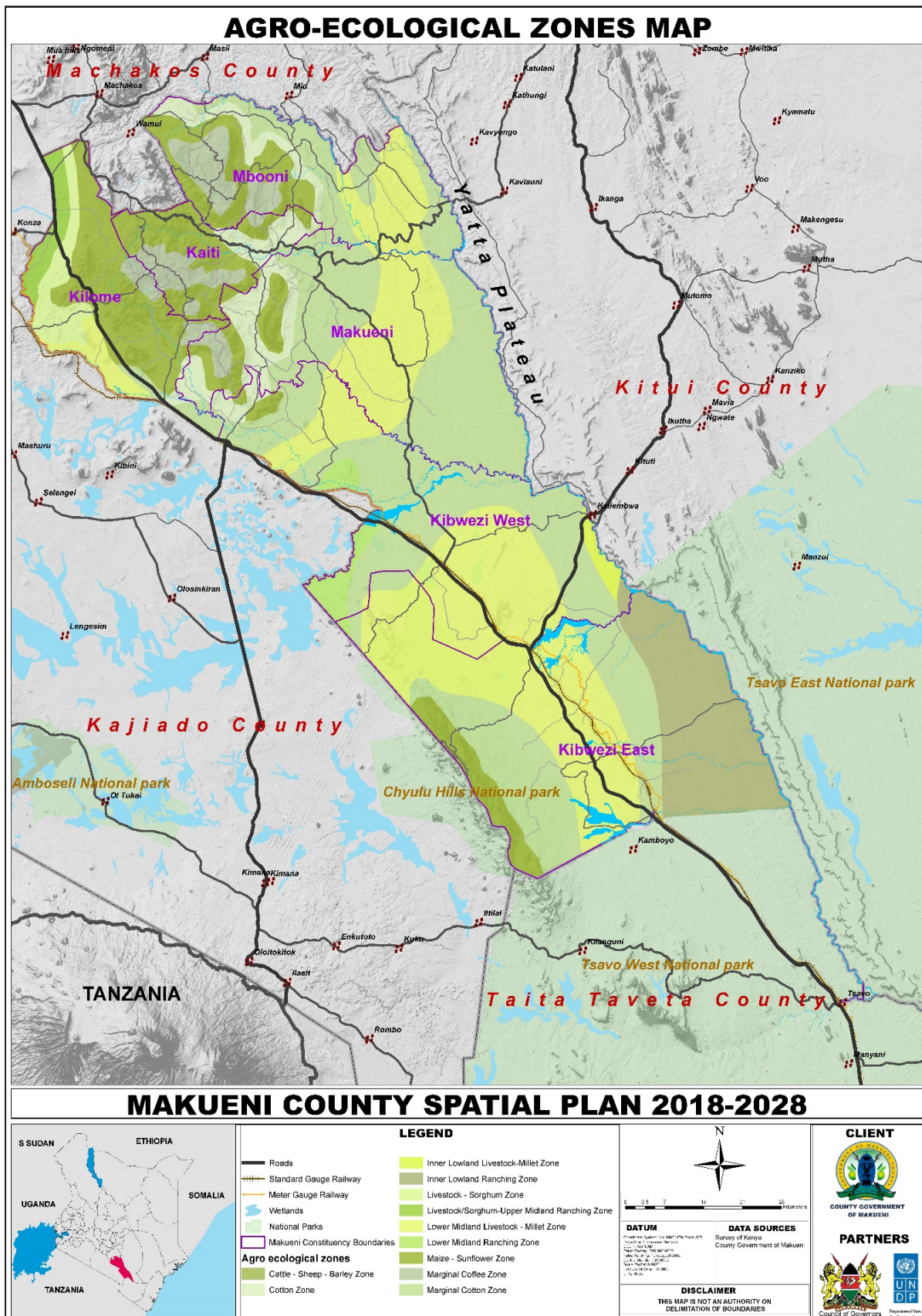


3.3.3 Spotted Rural Dispersal

In addition to settlement activities, Makueni's land use structure is defined by seven key production activities. Their spatialization across the County's territorial space is influenced by a variety of factors including, the geophysical structure, drainage pattern, and climatic conditions. The location of seven land use activities is closely matched with the County's landform and suitability profile. There are however no homogeneous land use zones but rather overlapping ones, depending on the suitability of conditions for each activity. The land use structure is therefore categorized according to the predominant land use in a given zone. These predominant land uses, their defining essences and the nature of their spatialization are further described using the following concepts.

1. The **Granary** – Makueni County specializes in the production of grains and pulses including; green grams, dolichos, sorghum, millet, pigeon peas, cow peas. Maize is mainly produced in the upper zones while the middle and lower zones are suited for the production of pulses.
2. The **Orchards** – Makueni is also famous for its thriving fruit production enterprise. The upper zones do well in the production of avocados and passion fruits while the middle zones specialize in the production of mangoes and citrus fruits. On their part the lower zones are famous for producing paw paws and melons.
3. The **Milking Shed** – Makueni’s uplands are suitable for dairy farming. Farmers in the middle zone are also increasingly adopting dairy production.
4. The **Kraal** - Livestock production, including beef cattle, goats, sheep and poultry is mainly practiced in the midlands around Kathonzweni and in the lowlands of Kibwezi. 45,916 Hectares of land in the County is occupied by 12 livestock ranches.
5. The **Honey Comb** – Apiculture (Bee keeping) is another major land use practice in Makueni, the County producing a wide variety of honeys, including medicinal and food honey. Organic beekeeping is especially practiced in the semi-arid midlands of Wote and Kathonzweni, and the arid lowlands of Kibwezi.
6. The **Wilderness** – Nature-based tourism is a major land-use activity in Makueni. The County has three wildlife parks including Chyullu Hills, Ngai Ndeithya and parts of Tsavo.
7. The **Shower Gardens** – Irrigation in Makueni is practiced along major rivers.
8. The **Fabric Gardens** – The lowlands of Makueni are well suited for sisal and cotton production.





No analysis of Makueni's existing spatial structure would be complete without a description of the spatial practices that are responsible for habituating and shaping the current disposition of Makueni's territorial space. Three vocations have come to be associated with the Akamba people, and which may be the definitive cultural practices of Makueni's peoples.

1. The **Trader** – The Akamba people are a Bantu ethnic group that long habituated the semi-arid lowlands of southeastern Kenya, and which stretch east from Nairobi to the western edge of the Coastal Nyika plateau and north up to the Mt. Kenya foothills of Embu. The territory, which goes by the name *Ukambani*, comprises of present-day Makueni, Kitui and Machakos Counties.



Prior to the modern era, the Akamba peoples were originally hunters and gatherers, and subsequently became long distance traders straddling the eastern plains and engaging in barter trade with their neighbours, the Kikuyu, Maasai, Meru and Embu people in the interior, and the Mijikenda and Arab people of the coast. They traded in locally produced goods such as sugar cane wine, ornaments, tools and weapons millet, and cattle for food. They also traded in medicinal products known as 'Miti' (literally: plants), made from various parts of the numerous medicinal plants found on the Southeast African plains. The once peripatetic tradesmen have since adopted subsistence farming but are still known to be adept traders, as evidenced in the numerous towns and market centers that dot the land.

2. The **Craftsman** – Some of the most important commodities traded by the Akamba were products of their fine craftsmanship in wood carving, basketry, pottery, tools and weaponry. They skillfully converted locally and externally sourced materials such as soapstone, clay, ivory, brass and cowrie shells into bodily ornaments, household wares, farming tools and weapons. Their persistence of their artistic inclination is evidenced in the sculpture work that is on display in many craft shops and galleries in the major cities and towns of Kenya.



The Akamba are also skilled in the art of the costume-making. Skilled tailors furnished the community with the traditional leather or bark skirts, embellished with bead work, necklaces made of beads, head band intensively decorated with beads and ornamented leather sandals. Though they have taken to wearing garments made from modern industrial processes, the traditional clothes industry is sustained by demand for regalia by the various *kilumi* or dance groups wore similar colours and patterns on their bead work to distinguish themselves from other groups. The

love of music completed the Akamba penchant for the arts. Their choreographed dances display an agility and athletic skills as they perform acrobatics and body movements. This also has lived on, as evidenced in their spectacular performances at many events in their daily lives or on occasions of regional and national importance. Sadly, their ingenuity in the arts has not translated into a major driver for local economic transformation back home.

3. The **Benchmark** – The Kamba undoubtedly occupied some of the most challenging territorial spaces in Kenya. Aside from the gently-inclined semi-arid grasslands that host their pastoral vocations, much of the community resides of the steep hillslopes of the fertile and well-watered hill massifs that make up a significant portion of the territorial homeland. Here they engage cultivation activities geared towards production of a variety of subsistence crops. There is however a challenge - uneven and steep topography makes soil erosion a serious problem. However, the Akamba peoples have traditionally worked to suit this landscape to intensive cultivation practices using small-scale terracing and irrigation techniques. The bench-like contoured terraces have since become the definitive element of the Akamba cultural landscapes, which has in turn assisted the region to avert an inevitable scourge of soil-erosion-induced environmental degradation.



2.3 Synthesis of Existing Spatial Structure

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1. Land – Makueni’s varied landscape is its biggest asset. The landscape structure, which is divided into four components differentiated along geographical qualities offers the possibility to build a diverse County economy. Here, various productive endeavors are adapted to areas of suitability, thereby promoting complementarities between areas and build resilience in the economy.
2. Landed Resources – Makueni’s territorial space hosts diverse resources, including water, forests, minerals, and wildlife, as well as its varied climate and weather. All these have latent potentials which, if developed and exploited, could assist the County to achieve its development goals.
3. Infrastructural endowments – The County’s existing infrastructure stock, including road networks, electricity supply, institutional infrastructure, social and community facilities may constitute the bear minimum that may be used to put the County to initiate the much-needed economic transformation. A lot however, remains to be done to improve access, conditions and functional efficiencies of key infrastructures like roads and electricity supplies, while some such as water supplies and energy sources need to be developed.
4. The People –Makueni’s people’s adeptness in trade, creativeness in the arts, and sensitivity to their environment may perhaps constitute the County’s most significant asset. When these qualities are brought to bear upon the landscape, natural resource endowments, and infrastructural assets, they may provide the very impetus to propel the County and its peoples into a progressive and prosperous future.

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1. Regional Positioning – Makueni's location along, in abutment with, proximate to, or in traverse of key international and national linkages, and infrastructure presents immense opportunities for enhance access to goods and services, markets for local produce, and networks based on complementarity and reciprocity. If critically assessed and creatively exploited, anchorage upon this vantage position may assist the County to build a competitive economy
2. Transport Structure – an evaluation of a number of components of spatial structure indicates that the County present spatial template is formidable enough to serve a facilitative role relative to the people's developmental endeavours. Not only does the County have a penetrative road grid that incorporates various classes, the alignment of key roads provides a suitable template to anchor urban and rural settlements in a manner that promotes distributive efficiencies. The same template may be used towards achieving equitable distribution of infrastructural services necessary to activate production areas across the County, and assist Makueni's people to achieve the desired high-quality life
3. Drainage Structure - In addition to the transportation network, the drainage system also offers immense possibilities for further activating production activities within the County and structuring the agricultural sector. In particular, the Athi River serves the purpose of anchoring the irrigation subsector. And with the bulwark of the Yatta plateau offering an aesthetic backdrop, the Athi may also assist in expanding activities in the tourism sector.

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1. Geo-physical Structure – the County's positioning within Kenya's marginal southeast, coupled with the fragilities associated with its varied and topographically challenging landscape, unpredictable and often harsh climate, has often served to limit the ability of Makueni peoples to derive maximum potential from their land resource. There therefore needs to be sensitive to the intrinsic, unique and often fragile qualities of the land and environment.
2. Landuse practices – there is a sense in which landuse framework is wanting. The rising population and the pressure to access land for both agriculture and settlement has led to a land use regime characterized by a mismatch between the spatialization of land use and production practices and the suitability of land relative to the same. This is evidenced in the fact that the majority of the County's population is accommodated on the uplands, where they attempt to adapt the fragile hillslopes through intensive cultivation activities. And although the people have tried hard to adopt land preparation practices such as terracing, the consequences of human activity are evident everywhere, including deforestation, rampant soil erosion, and depletion of water sources. Likewise, the marginal lowlands are progressively being converted into croplands, thereby stripping the land off its protective bush, brush and grass cover. This has made the areas susceptible to flood and wind-induced soil erosion.
3. External influences – The County's location along the Mombasa-Nairobi A109 corridor has been both boon and bane for Makueni County. The siting, along the highway, of parking bays for long distance cargo trucks has promoted the emergence of vices such as prostitution, highway robberies and urban crime. It has also led to numerous traffic accidents involving through traffic. This has led to spread of diseases and death.

Chapter 3: Key Development Sectors

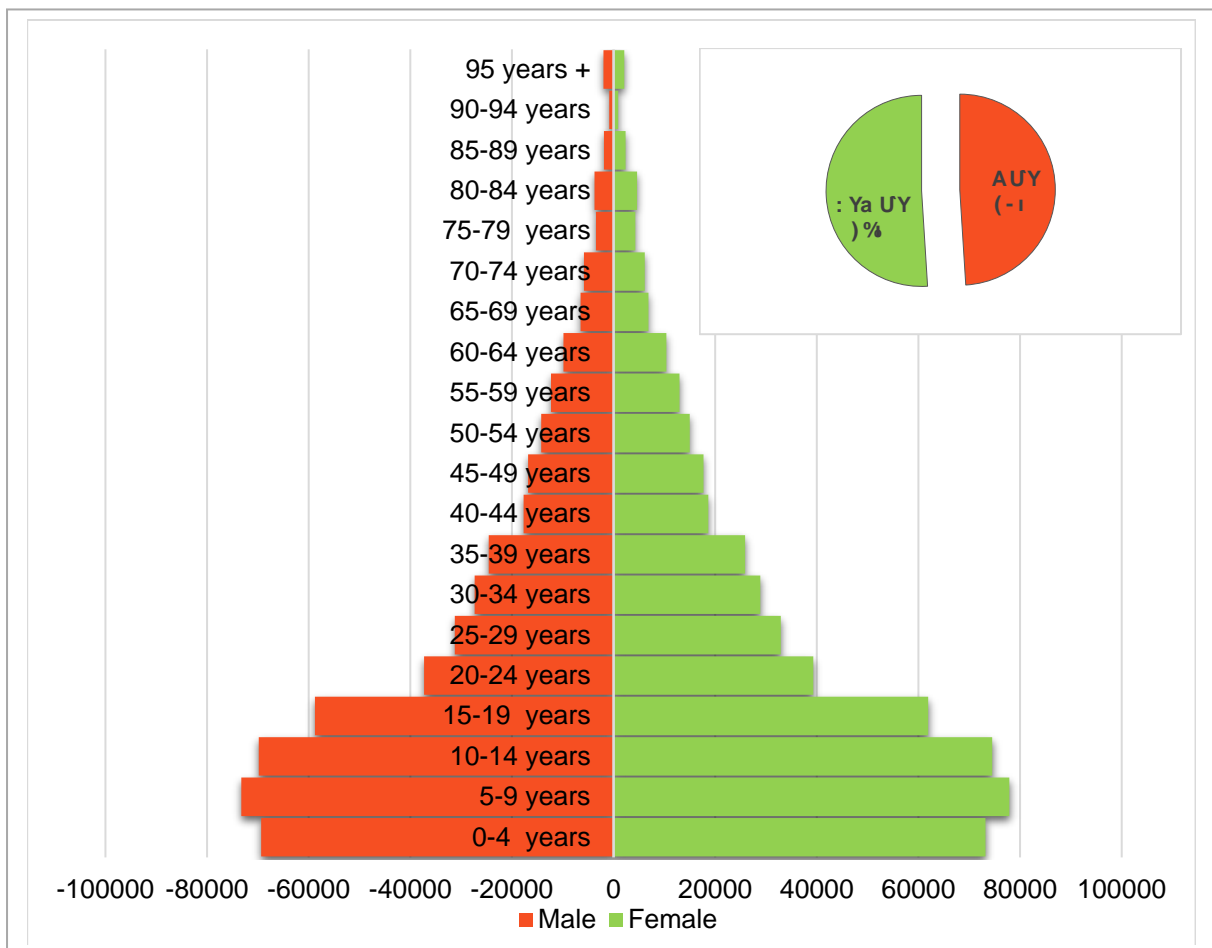
3.1 Population and demography

3.1.1 Population and Demography

The current population of Makueni County is estimated to be 1,002,979 people (in 2018), with majority being women. The largest portion of Makueni County's population (51%) is between the ages of 15 and 64 years. Children below 15 years of age form 44% of the population, attributable to the high fertility rate in the county of 5.1 children per woman.

5% (51,529 persons) of the population is above 65 years of age, with an average life expectancy of 67 years, slightly higher than the national one which is 62 years. As a result, the County has a high dependency percentage of 78.5% (Child: 69.5% and Aged: 8.9%).

3.1.1.1 Population Pyramid



Source: Makueni County Government Fact Sheet (2018)

3.2.2. Disability

The aged are a vulnerable group due to their susceptibility to disease, reduced ability to be actively engaged in economic activities and unique nutritional needs. An estimated 3% are aged above 75 years while 4% are persons living with disability. An estimated 13% of the population can be categorized as the youth, between the ages of 18 and 35 years.

3.2.2.1. Disability

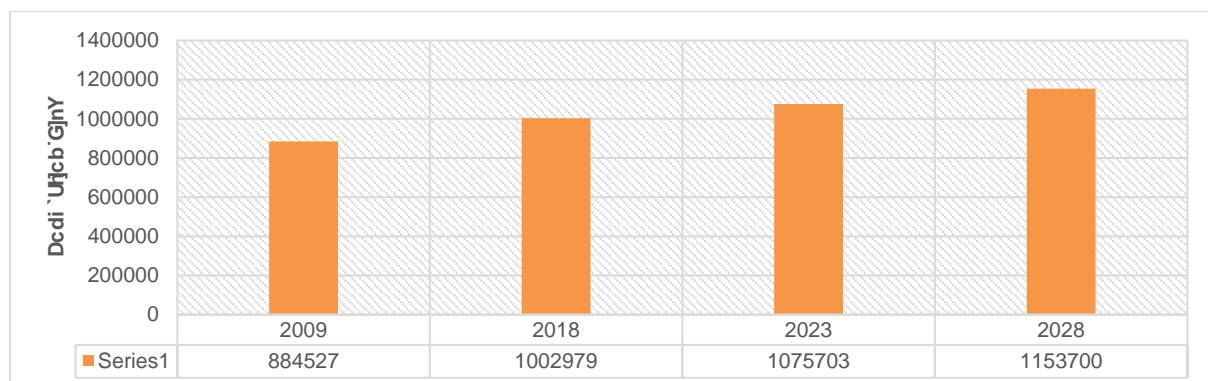
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Source: Makueni County Government Fact Sheet (2018)

3.2.2.2. Population Growth

The population of Makueni County is estimated to be growing at a rate of 1.4% annually, a rate lower than the national average of 2.6%. The population is estimated to be 1,076,035 people by the year 2023 and stand at 1,154,056 at the end of the plan period in the year 2028.

3.2.2.2.1. Population Growth



Source: Makueni County Government Fact Sheet (2018)

Population changes in the county have been driven by births, deaths and migration. Makueni County's crude birth rate ('000) is 44.7 while the crude death rate ('000) is 13.9, which is slightly higher than the national crude death rate ('000) of 10.4. The maternal mortality rate ('0000) is 362 and infant mortality rate is 45 per 1,000 live births. Due to better economic, health, trade, education and cultural infrastructure in upcoming urban centers in the county such as Mtito Andei, Tawa, Malili, Kibwezi, Makindu, Wote, Emali, Sultan Hamud, Kikima and Kalamba, there has been a significant increase in migration to urban areas at a rate of 10%.

3.1 Absolute Poverty

Absolute poverty in the County stands at 34.8% with an average of 340,344 people. The richest ward in Makueni County is Kee Ward in Kaiti Sub County with a poverty index of 30.6% and the poorest ward is Kitise/Kithuki ward in Makueni Sub County with a poverty index of 88.7%.

3.2 Communities, Culture and Heritage

The main inhabitants are the Akamba people who belong to the Bantu ethnic group. They speak Kamba language (Kikamba) as a mother tongue which is closely related to the language and culture of the Gikuyu, Aembu, Mbeere and Ameru people. The county has a cosmopolitan way of life especially along the Nairobi - Mombasa highway and the major urban centers.

3.2.1 Family Unit

Family Unit

The basic unit of the traditional Kamba community is the extended family; one of the fundamental foundations in the Kamba community. Members of the extended family constitute a clan '*mbai*', the elderly members of the clan form the council of elders who maintain law and order in the community. The clan plays a pivotal role in protecting the cultural values of the community.

Political organization

Politically the Akamba were organized into clans made up of several related families. They had councils of elders each entitled to "*Nzama Sya Utui*". They practiced the age-set system and they were ranked in age grades such as junior elders, medium elders, full elders and senior elders. The Akamba were decentralized. Akamba warriors defended the community. Judgement of cases was done by the council of elders.

Religion

Majority of residents practice modern religions. However, some still practice the old traditional beliefs, myths and superstitions which form the core oral traditions among the Akamba people.

3.2.2 Religion

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Christianity	Total:	847,300
	Catholicism	290,300
	Protestants	557,000
Islam	4,900	
Others	12,000	

Marriage

Traditionally and in modern times, the groom and his kin must meet some basic requirements and perform specific rituals highly regarded among the Kamba community as minimum threshold for a typical legitimate marriage. Before a marriage ceremony is conducted, the groom (with his kin) must throw an important party popularly referred to as **Ntheo** which is minimum requirement that demonstrates the bride officially belongs to the man she is engaged to. An ordinary **ntheo** ceremony must involve at least three goats, one of which must be a he-goat that is un-castrated. However, you may have more than three goats, but the rule is that the number of the animals to be presented to the bride's family for the purpose of **ntheo** must add up to an odd number.

Dowry is what is popularly referred to as **ngasya**. The most important items for **ngasya** are 45 goats if 3 goats have already been presented for ntheo or 48 if not. Prominently in the list of dowry items is a big goat called **ndua itaa** brought to the bride's parents. Moreover, in the list of dowry items are two drums of honey referred to as lthembe, two blankets as well as two bed sheets. These may be issued physically, or monetary compensation offered against each item. To crown the marriage, the groom is also expected to throw yet another mega party to the in-laws, and this time the entire village is invited to feast. A huge, castrated bull is slaughtered, and friends and neighbors are invited for a ceremony dubbed **ilute**.

Birth and Naming

Traditionally the Kamba women used to give birth at home, in the traditional houses under the help of midwives who were revered old women with specialized skills to assist in birthing. During these events; men were forbidden from witnessing and were supposed to be as far as possible during child birth.

Naming of children is an important aspect of the Akamba people. In most but not all cases, the first four children, two boys and two girls, are named after the grandparents on both sides of the family. Because of the respect that the Kamba people observe between the varied relationships, there are people with whom they cannot speak in "first name" terms. Occasionally, children were given names that were descriptive of the circumstances under which they were born.

Sacrifices

The Kamba make sacrifices on great occasions, such as at the rites of passage, planting time, before crops ripen, at the harvest of the first fruits, at the ceremony of purifying a village after an epidemic, and most of all when the rains fail or delay. They use oxen, sheep or goats of one color. The shrines themselves are unobtrusive, traditionally being forest clearings containing either a large or otherwise sacred tree (such as the fig tree), or other notable natural objects, such as unusually smooth or polished bounders. The trees may not be cut down, and the shrines are regarded as a sanctuary for animals and humans alike.

Death and Burial

A woman cannot be buried by the husband if the husband has not thrown the ntheo ceremony. The legend of death was that God one day decided to send for a messenger. The people sent a very slow but careful animal, such as a chameleon or mole, to receive and deliver the message. As it was God's message, once it was delivered, it could not be taken back. Alas,

on his way back down to earth, the animal either forgot the message, or foolishly blurted it out to an envious animal, such as jackal, who then ran to tell the people the opposite of what God had commanded. Henceforth, people were condemned to die and never rise again.

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The Akamba tribe who are the main inhabitants of Makueni County are mainly farmers practicing crop cultivation and plant crops such as sorghum, millet, potatoes and beans while others keep livestock such as cattle, sheep and goats as well as practice bee keeping.

Traditionally, the Akamba were great traders and ranged all the way from the coast, Lake Victoria and Lake Turkana. Ivory was one of the main barter items but locally made products such as beer, honey, iron weapons and ornaments were also traded. They used to obtain food stocks from the neighbouring Maasai and Kikuyu, as their own low-altitude land was relatively poor and couldn't sustain the increasing population which followed their arrival in the area.

Over time, the Akamba extended their commercial activity and wielded economic control across the central part of the land that was later to be known as Kenya (from the Kikamba, 'Kiinyaa', meaning 'the Ostrich Country' derived from the reference they made to Mount Kenya and its snow cap similar to the male Ostrich), from the Indian Ocean in the east to Lake Victoria in the west, and all the way up to Lake Turkana on the northern frontier. The Akamba traded in locally produced goods such as sugar cane wine, ivory, brass amulets, tools and weapons, millet, and cattle. The food obtained from trading helped offset shortages caused by droughts and famines experienced in their Kamba land.

In the mid-eighteenth century, many Akamba pastoral groups moved eastwards from the Tsavo and Kibwezi areas to the coast. This migration was the result of extensive drought and lack of pasture for their cattle. They settled in the Mariakani, Kinango, Kwale, Mombasa West (Changamwe and Chaani) and Mombasa North (Kisauni) areas of the coast of Kenya, creating the beginnings of urban settlement. They are still found in large numbers in these towns, and have been absorbed into the cultural, economic and political life of the modern-day Coast Province.

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The staple food is **ignc** also known as **_jH Y]** - maize mixed with beans or peas - as these can be dried, stored and consumed during the frequent droughts. Other foods include sweet potatoes and '**kikwa**' (meaning yam).

The Akamba people's love of music and dance is evidenced in their spectacular performances at many events in their daily lives or on occasions of regional and national importance. In their dances they display agility and athletic skills as they perform acrobatics and body movements. The Akamba dance techniques and style resemble those of the Batutsi of Rwanda-Burundi and the Aembu of Kenya.



Dances are usually accompanied by songs composed for the occasion (marriage, birth, nationally important occasion). Songs were composed satirizing deviant behavior, anti-social activity, etc. The Akamba have famous work songs, such as *Ngulu Mwelela*, sang while working. During the *Mbalya* dances the dance leader will compose love songs and satirical numbers, to tease and entertain his / her dancers.



Traditionally, both men and women wore leather sandals especially when they ventured out of their neighborhood to go to the market or on visits while at home or working in their fields they remained barefoot. Akamba men wore leather short kilts made from animal skins or tree bark. They wore copious jewelry, mainly of copper and brass. It consisted of neck-chains, bracelets, and anklets.



In the past, the women were attired in knee-length leather or bark skirts, embellished with bead work. They wore necklaces made of beads, these obtained from the Swahili and Arab traders. They shaved their heads clean and wore a head band intensively decorated with beads. The various *kilumi* or dance groups wore similar colors and patterns on their bead work to distinguish themselves from other groups.

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g]hYg`

The Akamba in Makueni like any other Kambas had and still have cultural and heritage sites.

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- AIC historical site in Kalamba
- Iviani in Mtito Andei
- Sikh Temple in Makindu
- Kibwezi graves.
- Longokwe in Kathonzweni
- Mbitini (Apparition of Mary Mother of God)

VŁr`7 i `hi fU`WbhfYg`include the following;

- Mukamba cultural centre in Kibwezi
- Colonial court`at Mikuyuni in Kibwezi and Kilungu
- Machinery in Mukaa and Mbooni

WŁr`A nŁ]WU`d`UWYg`EMulata Ivia in Nzau, Kilui springs in Kibwezi.

3.3 Agriculture

3.3.1 Land Use

Averagely 63% of the county (5,042km²) land is arable, but only 17% (888km²) is currently under cultivation. Nearly all the cultivation practiced in the County is subsistence, with the average farm size being 1.2 Ha for small farmers and 12 ha for large scale farmers. Nevertheless, agriculture remains as the economic activity in the county contributing 78 per cent of the total county GDP.

Table 3.3.1: Land Use in Makeni County (2018)

Category	Area (Hectares)
Food Crop Farming	479,565
Cash Crop Farming	105,146
Soil/Land Conservation	247,780
Farm Forestry	51,617
Organic Farming	21.3
Granary Storage	13

Source: Makeni County Government, Fact Sheet (2018)

High absolute poverty (34.8%) in the county has been contributed to by limited investment in agriculture and adoption of appropriate technologies necessary for agriculture development. The staff: farmer ratio in the county stands at 1: 1700. The total irrigated land in the county is 6,000 acres only which is extremely low compared to the targeted vision of having 15,000 acres of irrigated land. There is one irrigation scheme in the county- Kwakyai irrigation scheme. There exist other small irrigated farms scattered all over the county.

The Upper zones of Ukia, Ilima, Kee, Kilungu, Mukaa, Mbooni, Kithungo/ Kitundu and Mbitini, practice dairy farming and do well in the production of coffee, avocados, passion, horticulture, maize and vegetables. The middle zones i.e. Emali/Mulala, Kiima Kiu/ Kalanzoni, Kasikeu, Kathonzweni, Wote/Nziu, Nzau/ Kilili/ Kalamba, Kako Waia, Kiteta/ Kisau and Tulimani are characterized by production of green grams, pigeon peas, cow peas, mangoes, citrus fruits, paw paws, melons, cotton and sisal. The lower zones are also good for fruit farming (mangoes, water melons, paw paw), green grams, sorghum, millet, pigeon peas, cow peas, cassava, sweet potatoes among others.

Table 3.3.2: Crop Production in Makeni County (2018)

Crop	Production (bags per ha)
Maize	12 bags per ha
Beans	8 bags per ha
Cow peas	8 bags per ha
Green grams	9 bags per ha
Pigeon peas	8 bags per ha
Mangoes	100 bags per ha
Citrus	27 bags per ha

Source: Makeni County Government, Department of Agriculture

An estimated 26.2% of the employed labor force is primarily engaged in small scale agriculture and pastoral activities in the county. However, there are inadequate value-addition agro-processing industries.

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Fruit processing facilities	3
Root/tubers processing facilities	3
Fruit aggregation centers	11
Grain aggregation centers	5
Central cereal stores (NCPB)	3
Market sheds	40

Source: Makueni County Government, Department of Agriculture

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About 45,916 Hectares of land in the County is occupied by 12 livestock ranches. Kima estate and Kiu ranches are owned by cooperatives while Aimi ma Kilungu and Malili ranches are owned by companies. There are eight ranches owned by individuals Stanley & sons, Sultan Estates, Uathimo Farm, Mwaani, Muiu farm, Nzai farm, Kalima and New Astra.

The middle zone has also become home to dairy production, with the proportion of dairy cattle to the total cattle population standing at 8% county-wide. The lower zones of Mavindini, Kalawa, Kitise/Kithuki, Nguu/Masumba, Makindu, Ivingoni/Nzambani, Thange, Masongaleni, Mtito Andei, Kikumbulyu North, Kikumbulyu South, Nguumo do well in poultry production, bee keeping, pasture development. Overall, the major economic activities with high potential for scaling up include dairy, beef cattle, meat goats and sheep.

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@j YgfcW'	Population sizes:	
	Poultry	1,096,160
	Goats	670,700
	Beef cattle	238,495
	Sheep	118,485
	Dairy cattle	26,600
	Pigs	2,120
	Rabbits	12,295
	Donkeys	37,000
	Production levels:	
	Dairy cattle (calving interval: 18 months)	5 liters per day
	Zebus (calving interval 24 months)	2liters per day
	Beef animals	75 kgs
	Shoat carcass	12 Kgs
	Poultry carcass	1.2 Kgs
	-Eggs- Layers	75%
-Indigenous	40 eggs annually	
: jg\ Yf]Yg'	Numbers:	
	Fish farmers	975
	Fisheries	1,048 fish ponds
	Production levels:	
Fish production	24 Tons	
5 d]W `hi fY'	Numbers:	
	Bee hives	40,315
Production levels:		

Honey production per hive	5 Kgs annually
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Source: Makueni County Government, Department of Agriculture

There is a value-addition or aggregation infrastructure for livestock, fisheries and apiculture in the County though it remains inadequate.

Honey production infrastructure

Infrastructure	Number
Hay stores	3
Market sheds	40
Livestock yards	15
Dairy processing facilities/societies	12
Slaughter premises	65
Hides and skins bandas	5
Hides and skins processors	2
Tannery	1 (under construction)
Honey refineries	5

Source: Makueni County Government, Department of Agriculture

3.4 Economy

Registered businesses

As of 2018, the number of registered businesses in the county stood at 294, 1332 being retail and 243 being wholesale while trading centers were 420. Trade and commerce are among the key productive sectors identified for accelerating economic growth and development because of its immense potential for employment and wealth creation hence reducing poverty and enhancing the quality of life for each household.



Registered businesses by sector

Sector	Number
1) Banking services (including agents & insurance)	153
2) Mobile service providers	882
3) Transport services	353
4) Agrovets, chemists & pharmacies	382
5) clothing & textiles & cloth making	1,560
6) Baking services	12
7) Bars & Restaurants	1,027
8) Shoes Industry	46
9) Electronics	554
10) Water services	6
11) Building and construction	250

12) Canteens and retail shops	6,441
13) Hotels & butcheries	1,772
14) Welding & carpentry	603
15) Farms Products shops	547
16) Private schools	116
17) Petroleum products filling stations (including kerosene)	115
18) Hawkers	13
19) Barber shops & Salons	1,213
20) Residential houses& lodging	339
21) Supermarkets	25
22) Posho mills	484
23) Wholesalers	243
24) Wines & Spirits	145
25) Other licensed businesses	195

Sources: Makueni County Statistical Abstract (Updated 2017)

In a bid to spur commercialization of trade, the Government of Makueni County has invested in the construction of 40 market sheds and 20 livestock yards across the county with the aim of supporting traders by providing a conducive environment for them to carry out their trading activities. It has organized several trainings for traders and sponsored various stakeholders to attend trade shows and exhibitions.

3.2.3 Informal Sector

The informal sector in Makueni County is vibrant, comprising of hawkers, boda-boda riders, juakali (carpentry, tailoring, metalwork, motor vehicle repairs, wiring and panel beating, handicrafts, masonry, dress making, gas welding, pottery, basketry, hairdressing, charcoal burning and black smith. Hawking of fruits along the A109 highway, within centers. There are 7 Juakali associations with 360 Juakali artisans.

This sector grows at the rate of 3% annually. The sector also generated an average earning per person of only Ksh. 1,200 per month which is low compared to the minimum wage in Kenya of Ksh.3, 765 per month for unskilled employees (Republic of Kenya, 2012). Makueni County is known for its work in carvings, basketry and pottery. In view of this, the County has sponsored handicrafts centers in Makindu, Emali and others to develop and promote employment in the county. These handicrafts are fetching high incomes from tourists along the Mombasa-Nairobi highway. This has led to increase in number of people employed in the crafting industry. The women are the drivers of these economic activities. The products especially the carvings and pottery also attract high values and thus enhance increased income for the traders.

3.2.4 Agro-Processing

There has been an increased development in the industry sectors with the establishment of agro-processing industries in the County. The establishment of the Makueni Fruit Processing plant in Kalamba has boosted the mango industry by reducing



post-harvest losses for farmers in the County. Kikima Milk processing plant has also revitalized the milk industry where farmers in Makueni County take their milk for processing and packaging. Other industries include Makueni and Kibwezi honey processing centers, various tanneries and Makindu Motors which is a leading supplier of motor bikes in the country.

4.3.2.2 Mining

The mining industry in the County mainly involves the extraction of sand, soil, granite, stone and ballast (*see map 12*). Sand harvesting is spatially predominant as there is a lot of this mineral naturally occurring along almost all rivers and streams in the County. It is estimated that there is potential for extraction of 30 tonnes per day of Kaolinite in Kibwezi West sub-county. While there are deposits of limestone, volcanic rocks, marble, salt, granite (green and red), quartz, gypsum, vermiculite, mica, copper, dolomite, iron ore, basalts, gemstones in Kibwezi West Sub County, their commercial viability has not been established.

4.3.2.2.1 Sand and Ballast

Category	Number of Sites
Sand Harvesting Sites	21
White Soil Harvesting Sites	3
Granite Quarrying	2
Stone and Aggregate Quarrying	2
No. of people involved in sand harvesting	300
No. of people involved in ballast harvesting	650

Source: Makueni County Statistical Abstract (Updated 2017)

4.3.2.2.2 Other Minerals

Mineral	Locations	Viability
Vermiculite	Kinyiki, Nzau	Small. Insufficient for viable economic extraction
Mica	Nduluni, Kioo, Nzau, Kenzi and Kianini hills in Mukaa, Kilungu, Kithundini and Kinyiki	Insufficient to be of economic value.
Granite and Granitoid Gneisses	Granitoid gneiss: Ithumba, Mbuinzau, Kilema, Nzau, Ikua-Kitonda, Kalama, and KilimaKiu; Granite: KampiyaMawe and Mathemba	Economically viable deposits still exist for extraction.
Limestone and Crystalline Limestone	Tulimani and Salama. Kiboko, Kiangini, Kiumbu, Changondu, Kilawa, Kelembwane, Umani, Kaiona, Kilongoni and Mulilia rivers near Makindu (Kunkar limestone), Mulila, Kisingo, Changondu, Kilawa (Crystalline limestone) Mukulu, Athi, Darajani	Economically viable deposits exist
Kyanite	Tulimani, Nduluni, Kioo, Kilala and Masokani hill near Kathekani	Minimal and sub-economical for extraction
Talc	Tulimani	Small but may be viable for small scale local use
Kaolin	Nunguni, Nzukini Kilungu, Kutaa hill, Kasikeu hill, Kikutchwe, north of Ndolo market, Kikandani hill	Present extraction is more than 30 tonnes per day. Therefore sustainable extraction is recommended since most of the kaolin occur along the hills

Source: County Government of Makueni: Department of Mining

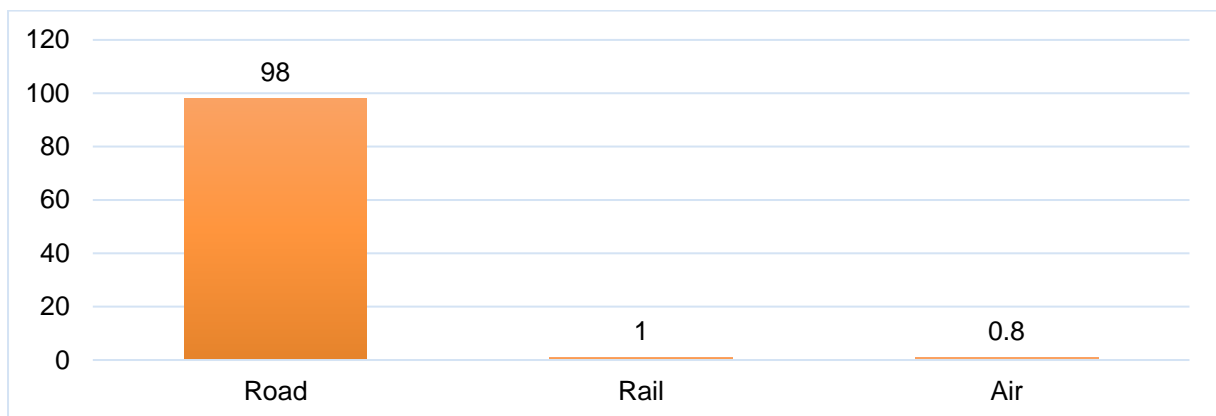
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The County shares part of the famous Tsavo National park which is considered one of the world's biodiversity strongholds. Domestic and foreign tourist's visits to Tsavo and Chyulu National parks tallied to 52,728 in 2015. The tourist hotel bed occupancy in the county was recorded as 7,555 tourists in the same year. There are tourist hotels situated in Mtito Andei, Wote, Makindu, Kiboko, Emali, Sultan Hamud and there is a projection of more hotels coming up around the county. In addition, the recently constructed SGR stations at Sultan Hamud, Emali, Kibwezi and Mtito Andei and the Thwake Dam under construction presents a huge potential for tourism development and investment in those towns. Gazetted forests potential for hiking and bird-watching, conference tourism e.g. Kusyombunguo Hotel, holiday homes with good scenery and climate e.g. Tawa Resort in Mbooni sub-county.

3.5 Transportation

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Source: Makueni County Government Fact Sheet (2018) Roads

The current road coverage is estimated at 3,203.5 km² (see map 11). The main mode of transport in the county is roads. Major roads within the county include A109, B7, C99 and C107 roads.

The bitumen roads are the Nairobi-Mombasa highway from Konza to Tsavo River, Katumani-Wote-Makindu road, Salama, Mukaa-Nunguni road, and Itangini-Tawa-Kikima road (partly done). The major bus parks in the County are Emali and Nunguni bus parks which have been constructed by the County Government. The use of roads within and without the county is at 98%

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Bitumen	453.8
Gravel	555
Surface	2,198.6

Source: Makueni County Government Fact Sheet (2018)

Rail

The County is traversed by a railway line which covers 140kms. The standard gauge railway which is to run from Mombasa to Uganda is strategically located to have two major stations in Makueni County. The railway runs from Old Konza railway station to old Man-eaters railways station with the major stations at Mtito Andei and Emali. It also has passenger stop rest facilities at Sultan Hamud and Kibwezi. The use of rail transport within the county is at 1%.

Air

Makindu town hosts the only airstrip in Makueni County. Its coverage within the county stands at 146km. Private air strips exist along Athi River, around Kiboko, at Mikululo and at David Sheldrick wild life conservancy. The use of air transport within the county is less than 1%.

Pipeline

The presence of the Kenya Pipeline Company's pump stations in Emali and Mtito Andei presents an excellent opportunity for the County to promote petroleum distribution points/depots, these distribution points can serve the County as well as Northern Tanzania opening up employment opportunities and spurring urbanization and economic growth.

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Walking is the predominant means of transport county-wide.

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Bodaboda (bicycles, motorcycles)	29
PSVs	8
Walking	60
Personal cars	1.2
Airplane	0.8
Train	1.0

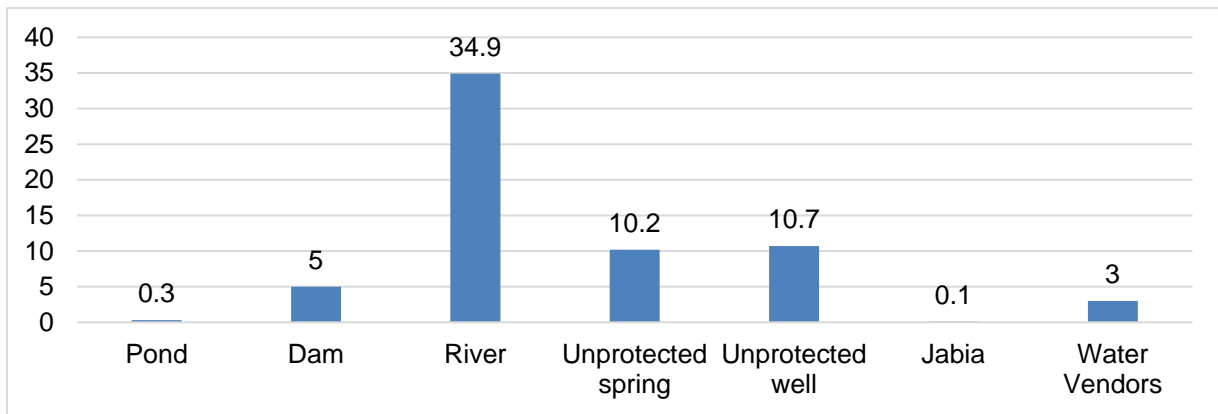
Source: Makueni County Government Fact Sheet (2018)

3.6 Infrastructure and Utility Services

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The main sources of water in the county include: seasonal and permanent rivers, springs, boreholes, dams, earth dams, wells and roof catchment. There are three (3) main water service providers (WSPs) in Makueni County which currently service only 24 percent of the population: Wote Water and Sanitation Company (WOWASCO), Kibwezi Makindu Water and Sanitation Company (KIMAWASCO) and Nolturesh Water Company, which serves Makueni and Kajiado counties. There are 20 water resource users' associations

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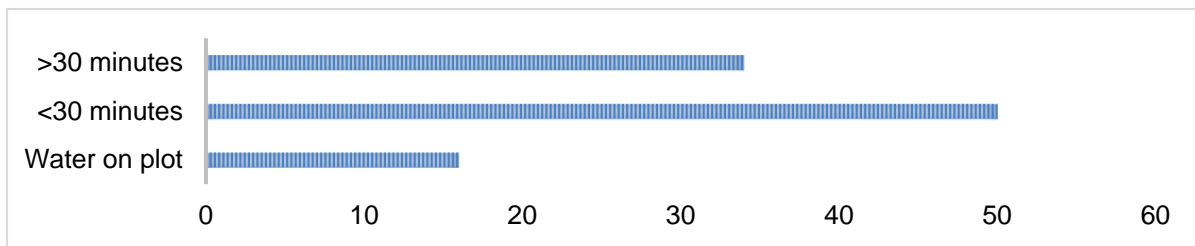
Source: Makueni County Government Fact Sheet (2018)



27% of houses have roof water catchment for rainwater harvesting. Within the county, 53% of residents use improved sources of water while 47% of the residents use unimproved sources of water. Use of improved sources of water is higher in male headed households at 37% as compared to female headed households at 34%.

Kibwezi East constituency records the highest share of residents with improved sources of water at 70% while Mbooni constituency records the lowest at 18%. Nguumo ward has the highest share of residents using improved sources of water at 94%. Wala-Kako ward has the lowest share using improved sources of water at 4%. The average distance to a water point is 5 Kms.

Figure 1: Access to improved water supply

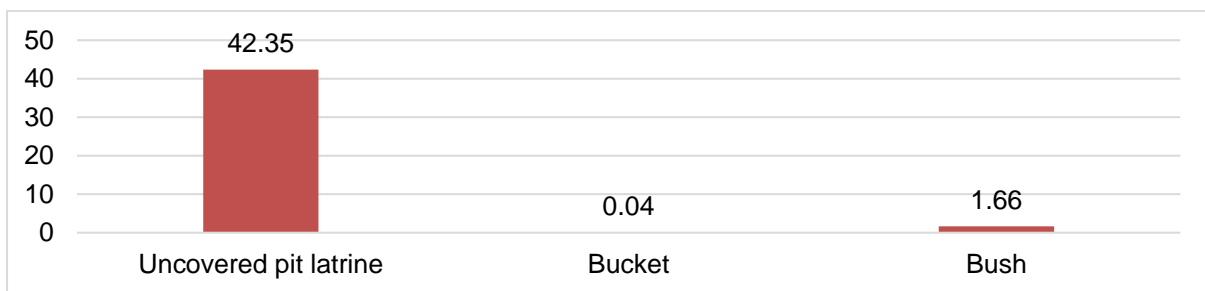


Source: Makueni County Government Fact Sheet (2018)

Figure 2: Sanitation facilities

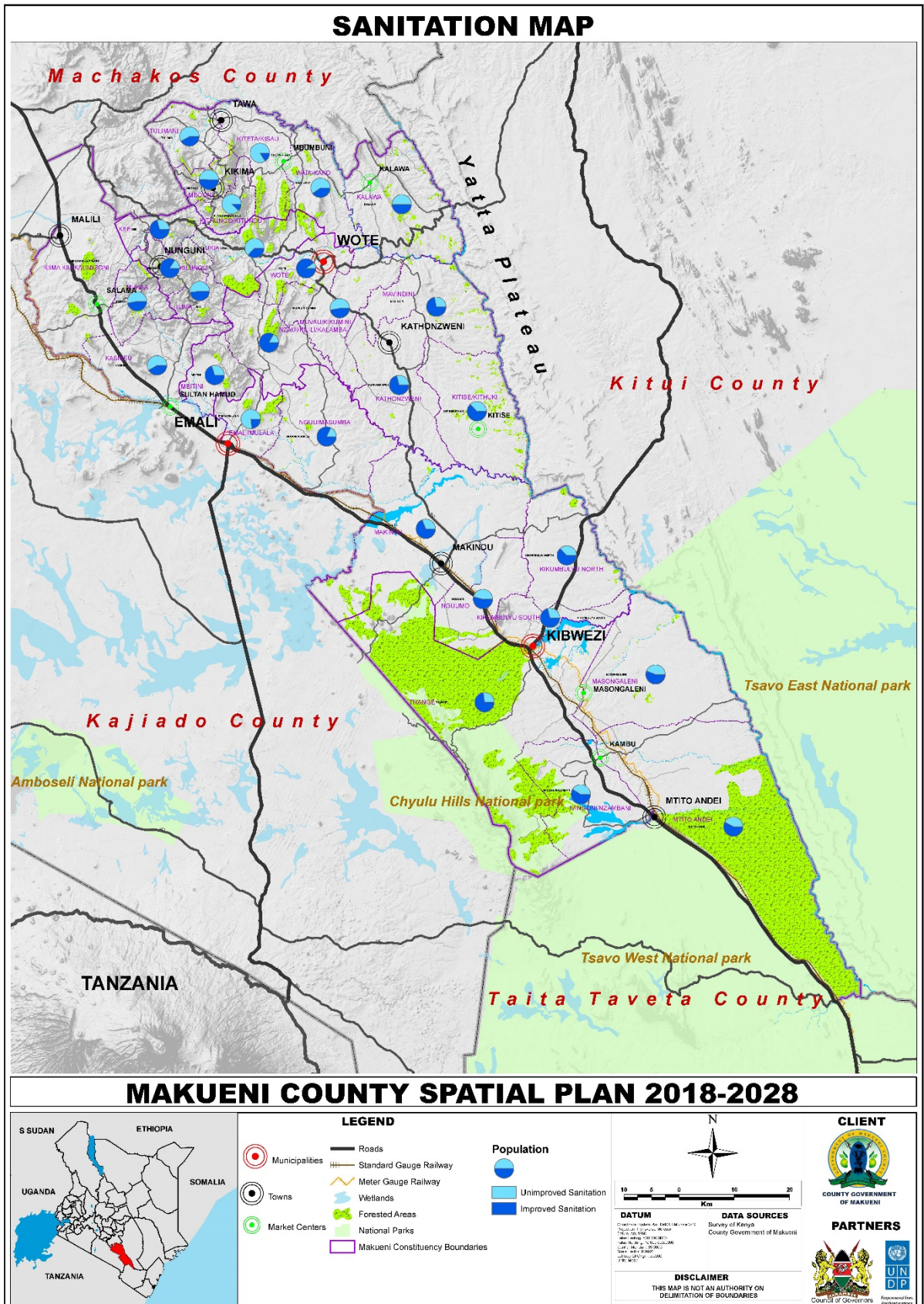
An average of 98% of households in the county use a toilet facility. An estimate of 56% of residents in Makueni County have access to improved sanitation while 44% use unimproved sanitation. Makueni constituency has the highest share of residents using improved sanitation at 72% while Mbooni constituency has the lowest share of 36%. Nzauni/Kilili/Kalamba ward has the highest share of residents using improved sanitation at 84% while Kithungo/Kitundu ward has the lowest share at 8%.

Figure 3: Solid waste disposal methods



Source: Makueni County Government Fact Sheet (2018)

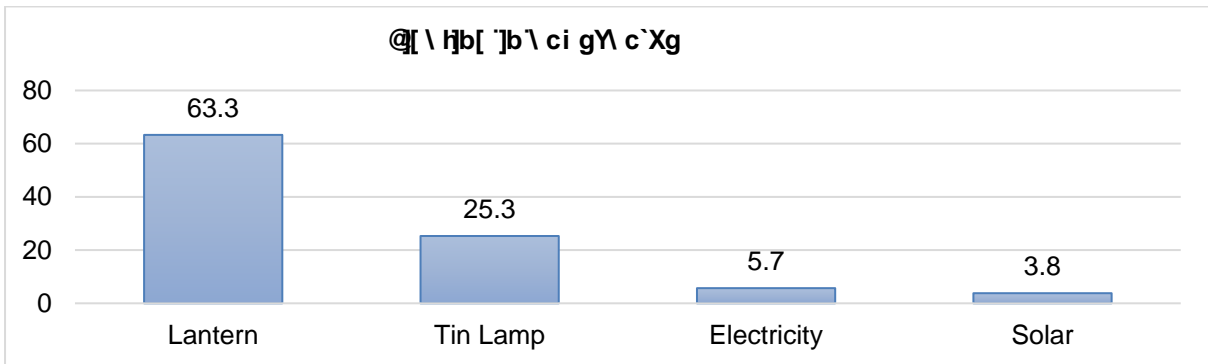
Private firm garbage collection in the County stands at 1.6%. Majority of the population (74.7%) dispose their garbage in the farm garden especially in the rural settlements. Collection of garbage by the local authority stands at 3.7% while burning as a method of solid waste disposal stands at 8.6%. The rest of the population (5.9%) disposes solid waste at a designated public disposal points.



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An average of 17% of households in the county use electricity for lighting compared to the national average of 22.9% with the distribution of population by mode of lighting is lantern 37.4.3%, tin lamp 14.1%, fuel wood 0.2, battery lamp torch/candles and 24.5% solar. Kibwezi West constituency has the highest level of electricity use at 11% while Mbooni constituency has the lowest level of electricity use at 2%. Wote ward has the highest level of electricity use at 27% while Kithuki/Kitise ward has the lowest share at 1%.

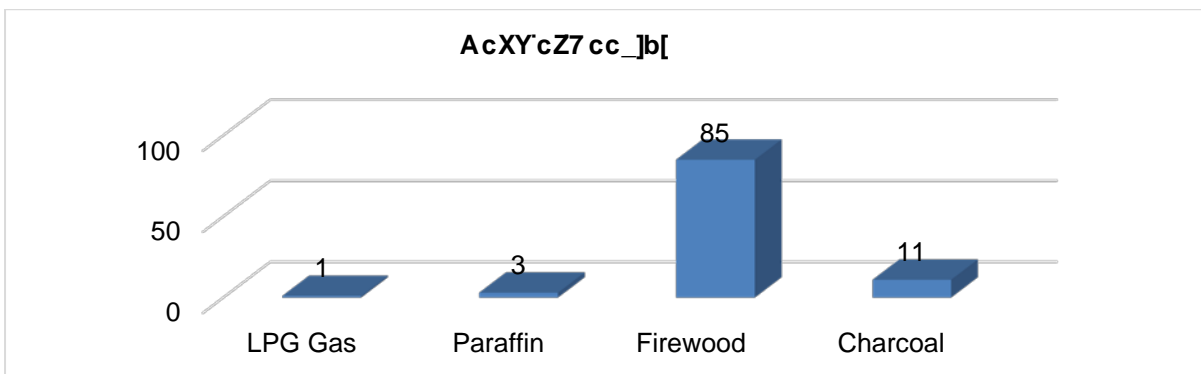
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Source: Makueni County Government Fact Sheet (2018)

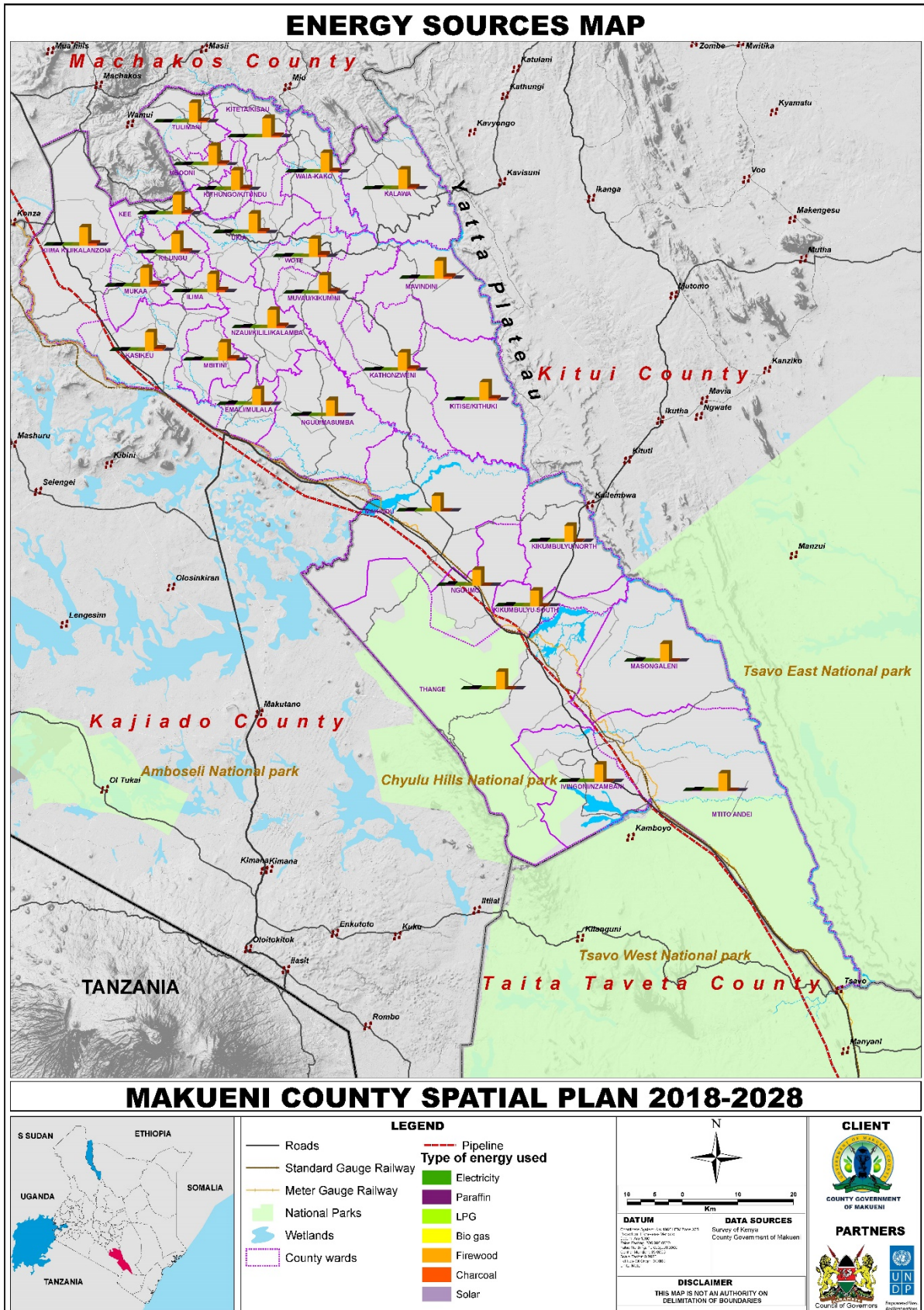
Within the county, only 2.9% of the residents use LPG gas for cooking, 7.3% use paraffin, 77.9% use firewood, biogas use is at 0.2% and 10.6% use charcoal. Kaiti and Mbooni constituencies have the highest level of firewood use in Makueni County at 91% while Kibwezi West constituency records the lowest share at 74%. Muvau/ Kikumini ward has the highest level of firewood use in Makueni County at 97% while Wote ward has the lowest share at 41%.

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Source: Makueni County Government Fact Sheet (2018)

Kibwezi West constituency has the highest level of charcoal use in Makueni County at 19% while Kaiti constituency has the lowest level of charcoal use at 8%. Wote ward has the highest level of charcoal use in Makueni County at 39% while Mvua/ Kikumini ward which has the lowest share at 3%.



3.7 Education

A total of 17% of Makueni County residents have no formal education. Kibwezi East constituency has the highest share of residents with no formal education. The illiteracy rate in the county is 22.41 per cent against the national level of 28.59 percent. This shows that, the county is better off compared to the whole country.

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HndY.'	Bc'cZ ZMj'jYg'	Bc'cZ fUj'jYg'	9bfc`a Ybh	FYh'bhjcb' fUW'	HfUbg'j'jcb' fUW'	HYUW Yf.' Di d'j' fUj'c'
ECDE	1,300	1,557	49,524	94.4%	83%	1:32
Total Primary Schools	1,021	6,612	269,752	93.4	60%	1:36
Government Primary Schools	968					
Private Primary Schools	53					
Secondary Schools	398	2757	90,955	86.4%	60%	1:33
Tertiary Schools		126	4,022	99.1%	80%	1:32
CTTIs	46					
Public Universities	2					
Private Colleges	4					

Source: Makueni County Government Fact Sheet (2018)

Work for pay within the county stands at 23.2%, business owners' account for 10%, agricultural employment at 22.7%, volunteers at 0.9%, the retired accounting for 16.3% and the unemployed accounting for 6.1%.

HUW'Y% . '9Xi WUjcb. '9a d'cna YbhAU_i Yb]7 ci bhmi5 j YfU Y'

Education Level:	Work for pay	Agriculture	Self-Employed (Business)	Unemployed
No education	19.3	29.6	8.8	6.7
Primary education	22.8	25.1	10.0	6.3
Secondary education (+)	24.6	17.6	10.1	0.3

Source: Exploring Kenya's Inequality-Makueni County (2015)

HUW'Y% . '9Xi WUjcb. '9a d'cna Ybhj'AU Y\ YUXY\ ci gY c'Xg'

Education Level:	Work for pay	Agriculture	Self-Employed (Business)	Unemployed
No education	21.1	29.7	8.6	7.4
Primary education	24.8	25.4	10.6	6.5
Secondary education (+)	25.1	16.4	8.9	5.7

Source: Exploring Kenya's Inequality-Makueni County (2015)

HUW'Y% . '9Xi WUjcb. '9a d'cna Ybhj' : Ya UY\ YUXY\ ci gY c'Xg'

Education Level:	Work for pay	Agriculture	Self-Employed (Business)	Unemployed
No education	18.7	22.3	8.7	5.7
Primary education	19.2	24.6	8.8	5.9
Secondary education (+)	18.2	17.1	8.6	5.5

Source: Exploring Kenya's Inequality-Makueni County (2015)

3.8 Health

A total of 17% of Makueni Makueni County is served by thirteen (13) Level 4 public hospitals. There is 1 referral hospital in the county. The County also has 43 level three hospitals previously referred to as health centers and 176 public dispensaries. The county has 2 private hospitals, 49 clinics and 30 dispensaries. In total, the county has 314 health facilities. The doctor: population ratio is 1:15,060 while the nurse: population ratio is 1:1441. The County has an average of 1117 bed capacity.

With the launching of the universal healthcare program, 78,219 households registered to this program for ease of access to healthcare. The average distance to the nearest health facility is 5km, against the standard recommended distance of 4km.

1. HIV prevalence rate: 5.1%
2. Skilled labor during deliveries: 57%
3. Under 1 children full immunization: 85%
4. Use/acceptance of contraceptives: 57%
5. 65+ access to health: No charges.

HUV'Y&\$: <YUH : UW]hYg'8]glf]Vi h]cb'UbX' Ck bYfg)]d'

By Ownership;					
Sub County	GOK	FBO	NGO	Private	Total
Makueni	41	4	1	14	60
Kibwezi East	22	6	1	6	35
Kibwezi West	30	3	6	12	51
Kaiti	26	2	0	5	33
Mbooni	38	4	0	0	42
Kilome	17	5	1	3	26
Totals:	174	24	9	40	247

Source: CIDP-Makueni County (2018)

HUV'Y&\$: <YUH : UW]hYg'8]glf]Vi h]cb'UbX' Ck bYfg)]d'

By Type;				
Sub county	Hospitals	Health centers	Dispensaries	Total
Makueni	3	11	27	41
Kibwezi East	2	3	17	22
Kibwezi West	1	3	26	30
Kaiti	2	3	21	26
Mbooni	3	2	33	38
Kilome	1	2	14	17
Totals:	12	24	138	174

Source: CIDP-Makueni County (2018)

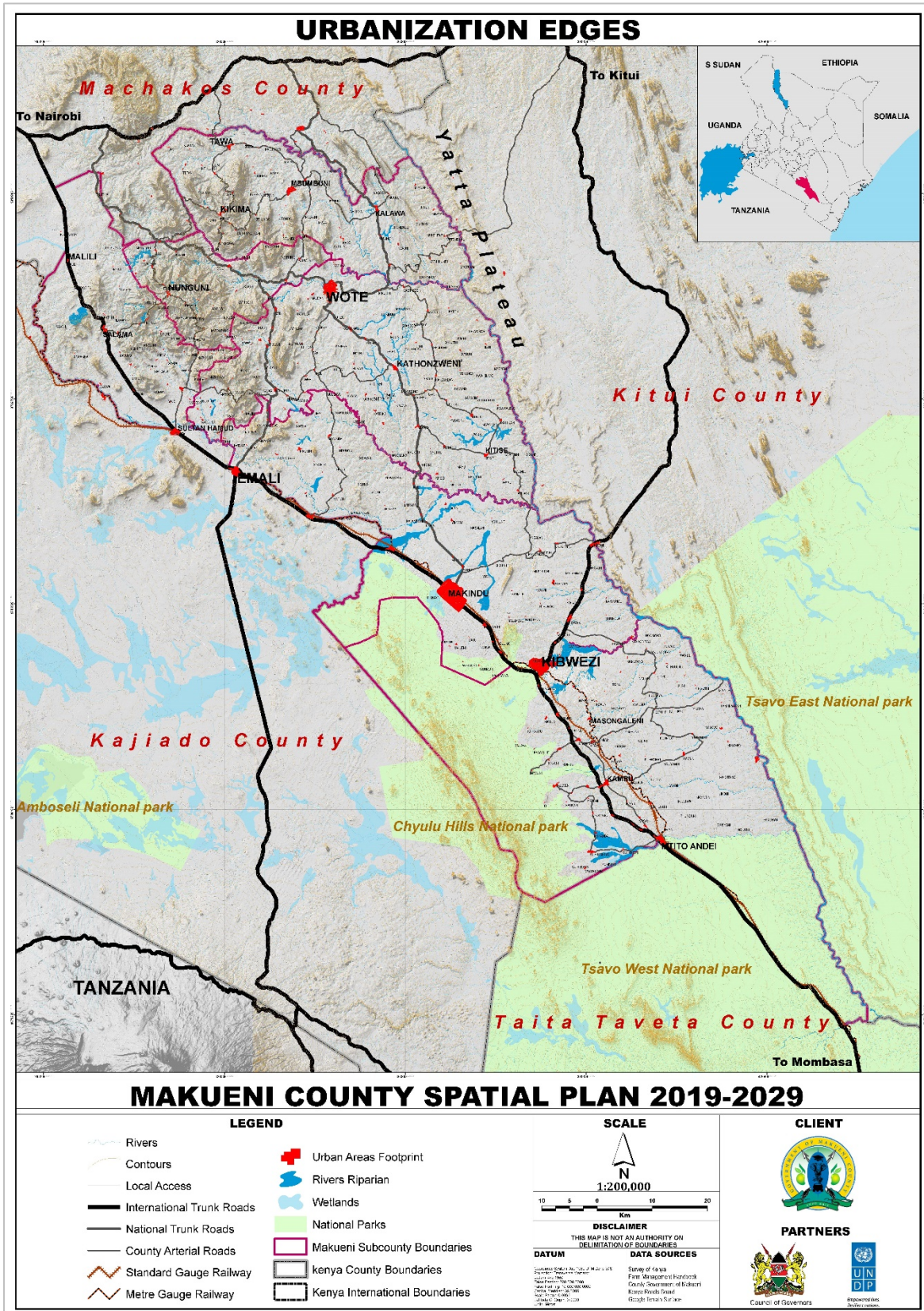
3.9 Urban Development and Housing

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An estimated 40,800 persons live in the urban areas of Makueni County (County Government Fact Sheet, 2018). The major urban areas in the County are Wote which serves as the County

administrative capital and Emali, Kibwezi, Mtito Andei and Makindu towns all located along the A109 highway.

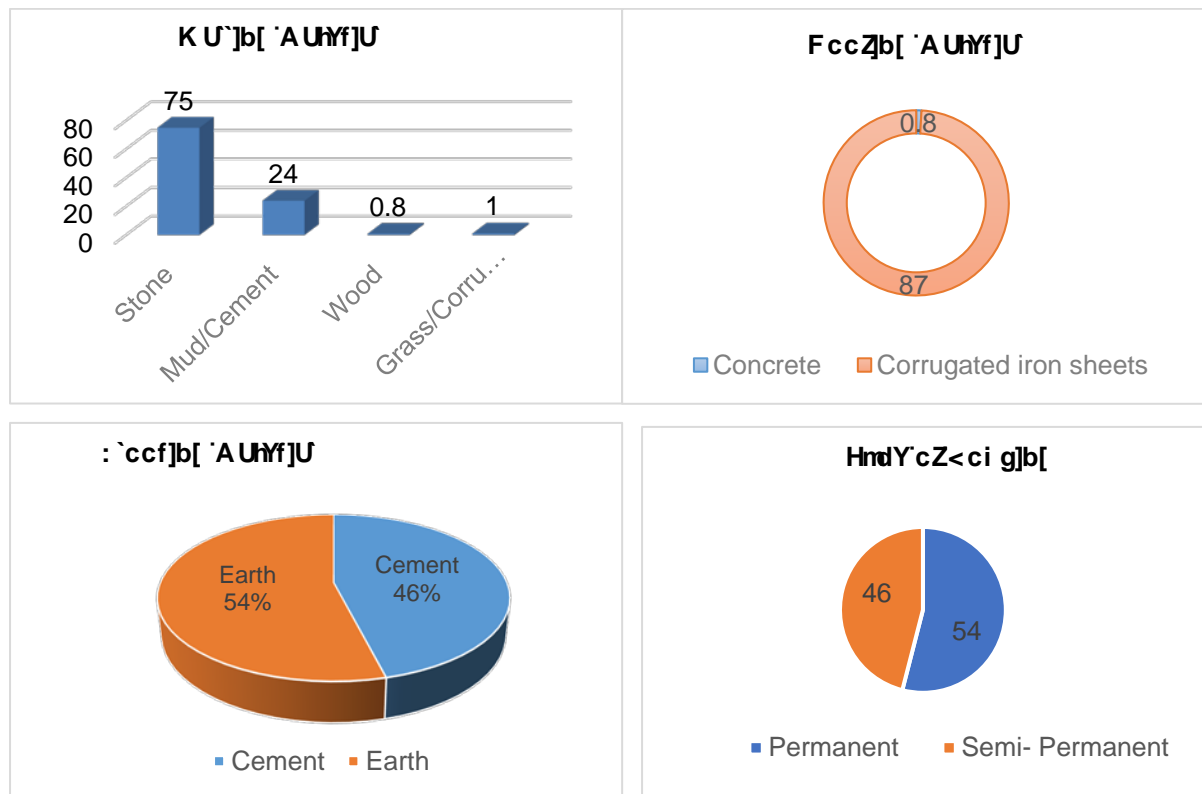
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Urban development has however been largely unregulated with only 6 land use plans having been prepared (by the end of the year 2018): Wote Municipal Land Use Plan, Sultan Hamud Urban Land Use Plan, Kathonzweni Urban Land Use Plan, Kambu Urban Land Use Plan, Kikima Urban Land Use Plan and Mbumbuni Urban Land Use Plan

There has been establishment of parking lots in Wote town which has heavily reduced traffic within the town. There has also been construction of a drainage system at Emali town and Nunguni. Various footbridges and drifts have also been constructed in Mbita, Songea-Malaika road, Laini-Kyamithenge drift, Kathiani-Unoa and Kivandini-Kathiani villages, Makasa and Masimba.

Figure 9: Housing Materials



Source: Exploring Kenya's Inequality-Makueni County (2015)

The county average records that 46% of residents have homes with cement floors while 54% have earth floors. Kaiti constituency records the highest share of homes with cement floors at 49% while Kibwezi East constituency has 41% recording the lowest range within constituencies. Wote ward has the highest share of cement flooring at 80% while Masongaleni ward recording only 29% of the population with cemented floors.

Within the county, less than 1% of the population have homes with concrete roofs while 87% have corrugated iron sheet roofs. Grass and makuti constitute 11% of homes and none has mud roofs. Kaiti constituency records the highest share of corrugated iron sheet roofs at 93% while Makueni constituency has the lowest share of corrugated roofs at 80%. Mbooni ward has the highest share in corrugated iron sheet roofing at 98% while Muvau/Kikumini ward

stands at 72%. Makueni constituency has the highest share of grass/makuti roofs at 19% while Kaiti constituency records the lowest share at 2%. Muvau/Kikumini ward has the highest share of grass/makuti roofs at 27% while Mbooni ward records the lowest share at 1%.

The County average of homes with brick or stone walls stand at 75%, 24% of homes have mud/wood or mud/cement walls. Less than 1% has wood walls, 1% has corrugated iron sheet or grass/thatched or tin or other walls. Mbooni constituency records the highest share of bricks/stone walls at 85% while Kibwezi East constituency records the lowest share of bricks/stone walls at 66%. Kee ward has the highest share of bricks/stone walls at 95% while Nguumo ward records the lowest share of bricks/stone walls at 55%. Kibwezi East constituency has the highest share of mud with wood/cement walls at 32% while Mbooni constituency has the lowest share standing at 16%. Nguumo ward has the highest share of mud with wood/cement walls at 43% while Kee ward has the lowest share at 4%.

3.10 Governance

The county has a total of 204 cooperative societies, 3 coffee societies, 16 milk cooperative societies with a registered membership of 67,189. There are 30 *bodaboda* SACCOs in Makueni County. There are 444 Youth groups and 811 registered women groups in the county. There are a total of four 4 micro Finance Institutions, one village bank and three (3) Commercial Bank branches in the county.

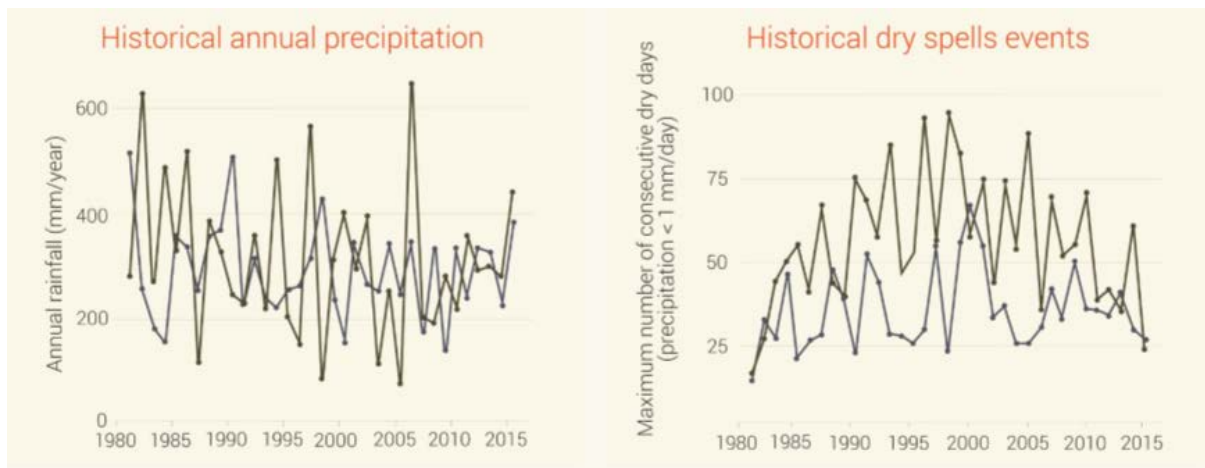
Table 3.10: Government Expenditure by Sector

Sector	Expenditure (KSh)
Agriculture	896,626,674.30
Lands, Mining & Physical Planning	361,453,137.26
Trade, Tourism, Industry & Cooperatives	526,689,469.15
Roads, Transport & Infrastructure	1,300,712,015.48
Education & Ict	783,245,654.68
Youth, Gender & Social Services	663,292,291.34
Health	1,788,039,805.11
Water, Irrigation & Environment	1,893,960,189.90
Politics & Governance	136,344,369.80
Total	24,074,558,534.04

3.11 Climate Change and Environment

Makueni County is experiencing climatic changes, evidenced by climatic hazards such as drought, heat stress, increased precipitation, moisture stress, and increased temperatures (The Kenya Ministry of Agriculture, Livestock and Fisheries (MoALF, 2016). As a result, the County is the first within the region to pass regulations on climate change. Over the past 30 years, precipitation has been irregular, declining in some years or being very heavy, resulting in flooding disasters. Temperatures have also been rising, up to 35°C in some instances (MoALF, 2016).

Historical annual precipitation and historical dry spells events in Makueni County from 1980 to 2015.



Source: Makueni County Climate Risk Profile (2016)

Climate hazards and their impacts in Makueni County.

Climate Hazard	Impact	Climate Hazard	Impact
Drought	Famine	Drought	Drought
El-Niño rains	Drought and famine	El-Niño rains	El-Niño rains
Outbreak of aflatoxin	Drought and famine	Outbreak of aflatoxin	Outbreak of aflatoxin
Drought and Famine	Drought	Drought and Famine	Drought and Famine
Drought and famine	Heavy rains	Drought and famine	Drought and famine
Floods and mudslides	Moderate rains	Floods and mudslides	Floods and mudslides
Drought	Drought and famine	Drought	Drought

Source: Kenya Risk Assessment Profile (2011); Makueni County Climate Risk Profile (2016)

The result of these climatic disasters in Makueni County have included:

- Decline in agricultural yields.
- High dependence on food aid during drought.
- Drying up of rivers resulting in water scarcity.
- Increased loss of vegetative cover in the lowlands.
- Human-wildlife conflict.
- Destruction of property and infrastructure (floods and mudslides)

The Makueni County Climate Risk Profile (2016) projects that the following climatic hazards will increase in magnitude and frequency in the County:

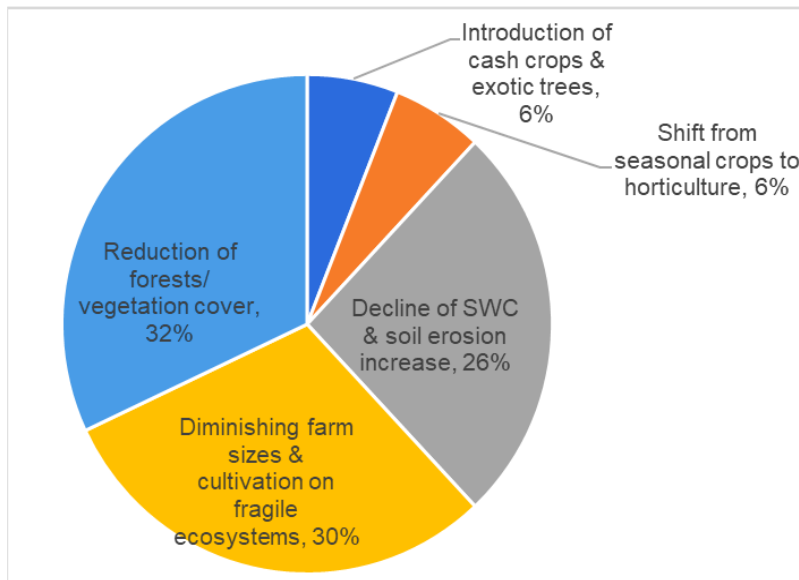
- Drought is more likely to occur the lowlands of Kibwezi (such as Makindu, Kalawa, and Mtito Andei).
- Increased rainfall is likely to occur in the wetter areas such as Kilungu and Mbooni.

In addition to climate change, Makueni County is faced with various environmental challenges which include depletion of water catchment areas (especially by timber harvesting and charcoal dealers); encroachment on riparian areas, illegal abstraction of water; unabated sand

harvesting; poor agricultural practices such as cultivation along riverbanks; water pollution upstream (by industrial effluent and plastics). Reduced agricultural production due to drought experienced in the county has immensely contributed to environmental degradation as residents seek alternative sources of livelihood (such as sand harvesting and charcoal burning). These activities have contributed to the clearing of vegetative cover and forest cover degradation.

The lack of a water master plan and proper policies, as well as the absence of an environmental policy and regulation has constrained the effort against destruction of forests and invasion of wet areas and water catchment areas. An additional challenge is the low community involvement and participation in environmental management and conservation because of low environmental awareness and information dissemination programs.

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Source: Makueni County, 2017

3.12 Synthesis of Sectoral Issues and Challenges.

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GYWcf.´	7\ U`Yb[Yg.´
<p>Dcdi `U]cbž 8 Ya c[fUd\ miUbX´ 7 i `hi fY´</p>	<p>Due to high levels of illiteracy and unemployment among youths, many of them have resorted to drug and substance use. This has further been contributed by lack peer pressure, lack of mentorship programmes and the ease of access and affordability of drugs.</p> <p>The county being majorly rural and agriculture mainly subsistence, there is little/no income being generated within household thus the high poverty levels.</p> <p>Marginalization within the county is common majorly experienced among PWDs and PLW/HIV.</p> <p>Gender based domestic violence within the county is contributed by retrogressive cultural practices, lack of awareness of gender-based rights and drug abuse.</p> <p>Increased child abuse cases within the county is experienced due to lack of support structures for OVCs, weakened value systems and lack of parental guidance</p> <p>Increased crime rates/social evils-drug and alcohol abuse has been propelled due to the high rates of unemployment, exposure to uncensored information through social media and weakened moral systems.</p>
<p>5 [f]W`hi fY´</p>	<p>In the absence of a land use policy, population growth has put pressure on land available for agricultural use leading to subdivision of land to uneconomical sizes. The resultant pieces of land are small to hardly support commercialized agriculture. There is low value addition and processing of agricultural commodities which is attributed to the existence of few micro processing facilities. Low market linkages for the County’s commodities have led to brokerage, exploitation and post-harvest losses. Makueni County also experiences a low institutional linkage which has contributed to limited forms of technologies and capital essential for investment in agriculture. Unfavourable policies and low observance of existing policies have contributed to drainage of agricultural resources and unsustainable land use practices.</p>
<p>ɓXi glfmi</p>	<p>There is low industrial growth within the county due to lack of a policy document to guide industrialization. Industrial growth is also constrained due to inadequate resources especially water and capital. Another major determinant for industrial growth is value addition which is incapacitated by inadequate and poor technology.</p>
<p>A]b]b[´</p>	<p>Under exploitation and exploration of mineral resources within the county has been contributed by poor sensitization and lack of a policy framework that guides mineral exploitation.</p> <p>Illegal mineral prospecting, mining and sand harvesting is rampant within the county attributed to mushrooming of sand harvesting cartels and existence of weak policies guiding mining in the county.</p> <p>The absence of policy enforcement has been paralyzed by lack of funding.</p>

Hci f]ga`	There is inadequate tourist infrastructure within the County despite the scenic view and potential tourism has in the county due to lack of investor engagement. This is further constrained by inadequate resources to develop tourism infrastructure e.g. roads, water, electricity and land.
HfUbgdcfh	Efficient road transport network has been weakened by the poor roads conditions caused by poor maintenance of roads. Lack of adequate overpasses and underpasses has been contributed by poor governance structures: Preparation of project designs without consultations with relevant county authorities Poor informal and formal transport planning thus the booming of unregulated bodaboda services caused by lack of policy framework to guide on bodaboda trade. Lack of designation of appropriate areas for bus, lorry, private cars, bodaboda, and non-motorized transport parking bays caused by lack of approved development plans designating parking bays. The transport sector has also posed a challenge in opening up blocked roads caused by weak enforcement of approved development plans and lethargy in enforcing PPA 7 notices requiring demolitions of encroachments and delayed resolution of boundary disputes touching on access roads by the office of the land registrar
K Uhyf`UbX`Gub]H]cb`	Climate change experienced in the county has resulted to erratic rainfall/frequent droughts and shortage of water to sustain agricultural development. Development of water resources has been constrained by the geophysical location of the County (Arid Area) and the high cost of water mechanization. Over dependence on few available water resources has resulted to conflict of interests/needs. Water shortage in the county has further been contributed by poor water harvesting methods.
9byf[m	In absence of a policy framework to guide on use of clean energy sources, the green sources of energy within the county have remained unexploited despite the county having so much potential in generation of solar, wind and hydro-power. Despite the green energy potential, the high costs of installation of green energy plants incapacitates its exploration. Lack of connection to electricity supply within rural areas is majorly attributed to the high poverty rates for most rural residents and low power voltage lines that cannot meet the demand.
9Xi VU]cb`	There is low adult literacy level and low transition rate from primary to secondary school within the county due to retrogressive cultural practices, early pregnancies and high poverty levels.
<YUH`	Mortality rates (0-5) within the county are high. This is mainly contributed to the low value nutrition feeding. Due to poor sanitation and water unavailability, diarrhoea rates are high (6%) and diseases of the skin at 16% especially among children.
Dcj Yfmi	Due to high illiteracy levels within the county, unemployment is high among youths and thus high dependency ratio thus the vicious cycle of poverty. Land subdivision to uneconomical sizes have thus strengthened the cycle of poverty. High fertility rates in the county have been contributed by school drop-outs thus early pregnancies.
I fVUb`XYj Ycda Ybh UbX`<ci g]b[`	As the County aims to increase urban centres, this is crippled by the high urbanization in the county at 11.8% especially in areas along major transport corridors thus development outdoes the level of service provision leading to constraints in access to basic services and utilities such as water, sanitation and electricity.

	Uncoordinated planning has resulted into mushrooming of informal settlements within the county comprising of grass. Good rental housing within the county is expensive and affordable neighbourhoods experience water shortages frequently.
9bj]fcba YbhUbX' 7`ja UH'7\ Ub[Y'	The high temperatures coupled up with the erratic rain has contributed to the county being dry thus semi-arid. This has further constrained water sources replenishment and thus the frequent drying up of perennial rivers and water pans.
; cj YfbUbVV'	Approximately 5 cooperatives have collapsed since their inception after 2013. This has been majorly contributed by poor management and governance structure within the cooperatives thus the fall outs.

Part Two: The Plan

Chapter 4: Vision, Spatial Concept & Strategy

4.1. Framing Perspectives

The development of a spatial development framework for Makueni County is informed by three broader perspectives on territorial development, namely, the Kenya Vision 2030, the National Land use Policy, and the National Spatial Plan.

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Kenya Vision 2030

Kenya's development blueprint, the Vision 2030, summarized the collective aspiration of Kenya as a society and territorial entity. The vision aims;

“To transform Kenya into a newly *industrializing, middle income* country, providing a *high quality of life* to all its citizens by 2030 in a *clean and secure environment*”

The Vision is based on three key pillars:

1. Economic - pursues prosperity for all peoples and regions of Kenya
2. Social - seeks to build a cohesive and just society by upholding social equity both in terms of access to economic opportunity, sharing of benefits, access to basic services in a clean and safe environment
3. Political – upholds democratic, accountable, people-centered governance, the rule of law and the protection of individual freedoms

Makueni will play an important role in the realization of the Kenya Vision 2030, as follows;

1. *Agriculture* - The Vision 2030 places land in Makueni in the semi-arid category, meaning that the County's land is majorly of marginal productivity, courtesy of the harsh climatic conditions. It however observes that much of this land's carrying capacity remains largely under-exploited, and their potential, for both livestock and crop production, may be significantly enhanced if irrigated.
2. *Tourism* – Makueni County lies within an area rich in wildlife resources and therefore bears great potential for the actualization of the Vision 2030's economic pillar through tourism improvement sector aspirations. The vision, under the under-utilized parks initiative seeks to upgrade the standards of attractive but seldom visited parks, including the, Tsavo East, Tsavo West, and the Chyulu Hills, which are situated in South Eastern Kenya, and partly in Makueni County.
3. *Infrastructure* –The Vision 2030 aspires for Kenya to be positioned as the most efficient and effective transport hub of the East and Central African region, and subsequently seeks to firmly connect it through a network of roads, railways, ports, airports, and water ways, and telecommunications. The “Northern Corridor”, a rail/road spine linking the Mombasa, Nairobi and Malaba to Uganda and the Great Lakes region traverses across most of Makueni's territorial space. Makueni is also connected to the new LAPPSET corridor from

Lamu to Juba in South Sudan through the Kibwezi-Kitui-Garissa Road, and to Tanzania through the Emali-Loitokitok-Moshi Road. These connections are set for improvement under the Vision 2030's 50-year *Integrated National Transport Master Plan*, thereby making the County a gateway to the Region.

4. *Manufacturing* - Kenya aims to have a robust, diversified, and competitive manufacturing sector, which will be instrumental in supporting the country's social development agenda through the creation of jobs, the generation of foreign exchange, and by attracting foreign direct investment. This will be achieved partly by exploiting opportunities in value addition to local agricultural produce. Makueni County has a huge potential to contribute to this aspiration through the establishment of industrial and manufacturing zones based on food processing industries for its niche products - fruit, grain, and livestock produce.
5. *Energy* – Energy is one of the infrastructural enablers in the quest to attain the Vision 2030's social and economic pillars. Makueni County has great potential to enhance Kenya's energy supply through the development of its renewable energy sources, including the tapping of the Athi River's hydroelectric power potential and solar energy potential.

National Land use Policy

The Vision 2030 underscored the importance of land as a driver of rapid economic transformation, and as a critical resource for its pursuit of socio-economic transformation, and subsequently suggested the National Land use Policy as a framework;

“Optimal Productivity, Sustainability, Efficiency and Equity in the use of our Land and Territorial Space”

This, it seeks to achieve by;

1. Ensuring optimal utilization and productivity of land and related resources in a sustainable and desirable manner at all territorial levels
2. Promoting sound land use practice and mitigating against undesirable environmental consequences of land use activity
3. Preventing un-economic subdivision of land, easing the pressure on prime agricultural lands and fragile ecosystems, controlling the emergence of unplanned urban centres, and stemming urban sprawl and proliferation of informal settlements
4. Initiating a land reform agenda in pursuit of effective land administration, ensuring equitable distribution of and access to land, guaranteeing tenure security for all, incorporation of advanced land administration approaches and technologies, and enhanced and faster resolution of land disputes

The aspirations of the National Land use Policy are relevant to Makueni, especially given the County's challenging and fragile terrain and marginal nature of its land. The undulated uplands of Mbooni and Kilungu, and the midlands of Kaiti, Mukuyuni, Nunguni and Kalamba, host some of the steepest landscapes in Kenya. These areas are also the most settled areas in Makueni, and are prone to forest-clearance and cultivation-induced soil erosion degradation.

The County's marginal lowlands of Kibwezi East and West, parts of Wote and Kitise constitute approximately 80% of the county's total land surface where some parts of Makueni County.

The areas have the capability to support large scale livestock production and irrigated crop farming. But they are likewise prone to degradation due overstocking and denudation. The principles of the National Land Use Policy will be instrumental in towards innovating strategies to reverse degradation and conserve these lands.

National Spatial Plan

The Vision 2030 underscored the need to develop a *National Spatial Plan* as one of the flagship projects to assist in the socio-economic transformation, and which will form the basis upon which development activities in support of Vision 2030 will be anchored in the National territorial space

The NSP envisions;

“Coordinated, integrated and balanced spatial development of the country to promote the achievement of competitiveness, balanced development, prosperity and high quality of life for the citizens”

It seeks to achieve this by;

1. Providing a viable strategy for land development, and effectively guide physical development activities towards guaranteeing sustainable outcomes
2. Optimizing the development and utilization of infrastructure facilities and services
3. Providing a spatial template for anchoring all development initiatives under the vision 2030
4. Facilitating in the pursuit of aspirations related to the Vision 2030’s key priority sectors of agriculture, manufacturing, urbanization, and environmental management
5. Providing a broader framework for incorporating long-term development plans within the national spatial context

The unique location of Makueni County within Kenya’s territorial space, and along major infrastructural corridors demands the formulation and implementation of an innovative framework to enable the County to tap into and maximize on potential benefits accruing from its positioning. The development of a County Spatial Plan will not only be instrumental in guiding spatial development within Makueni, but will likewise strategically anchor the County within Kenya’ and the region. The Spatial Plan will also form the basis for the implementation of the National Land use Policy by providing a framework for preparation of detailed Land use plans.

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The above three frameworks are further clarified, interpreted and localized in terms relevant to Makueni County. This is achieved by means of two local frameworks as follows;

1. The first is the **A U _ i Y b] J] g] c b ' & \$ &)** ž which **adopts a sectoral planning approach** to facilitate allocation of resources to related activities in order to accelerate the desired growth by linking specific sectoral activities to outcomes.
2. The second is the **A U _ i Y b] 7 c i b h m i G d U h] U ' D ' U b ' & \$ ' \$**, which provides **a spatial, structural and strategic template** to anchor the programmatic interventions of key development sectors in the County’s territorial space, and in such a way as to ensure

spatial and distributional justice, as well as efficiency, efficacy and sustainability of outcomes.

Makueni Vision 2025

Makueni Vision 2025 is a long term development blue print for the Makueni County and aims at socio-economic transformation by the year 2025.

“A prosperous, value based county with high quality of life”

The vision is informed by the Global Sustainable Development Goals (SDGs), and anchored on aspirations of the Kenya Vision 2030, to which it seeks to respond. It has six principal pursuits;

1. Accelerated and inclusive economic growth and development;
2. Improved access to quality water and health services,
3. Access to quality education,
4. Increased job creation,
5. Increased household incomes, and
6. Sustainable food security.

The vision is clearly people-centred as communicated by its desired outcomes, and further embodied in it's now famous catchphrase, “**Kila Nyumba Cikalila**”, which underscores the need to guarantee “*opportunity for every household*”. The vision's aspiration is similar to that of the National Vision 2030 but its attainment is predicated on a set of clearly-stated and none-negotiable values which the County administration seeks to uphold;

1. Integrity and accountability.
2. Inclusiveness.
3. Equity and Fairness.
4. Patriotism.
5. Responsiveness.
6. Hard work, Creativity and innovation

Makueni Spatial Vision 2030

The Makueni Spatial Vision 2030, which shapes the County's spatial development perspective, is, in addition to drawing from the three national frameworks, likewise informed by views arising from an elaborate stakeholder process undertaken during the planning process, and which highlighted in the following concerns and aspirations;

The people of Makueni collectively expressed a variety issues of which they wanted the CSP to respond to. The issues, which varied from place to place, touched on the following key areas of concern include;

1. *Environment* - Destruction of water catchments/Deforestation/Land degradation/Soil erosion
2. *Transportation* - Poor accessibility and connectivity/Poor road conditions
3. *Infrastructure and Services* - Inadequate service supply grids/inadequate portable water supply
4. *Land* – land fragmentation/lack of tenure security/squatting/land disputes

5. *Social Facilities and Services* – Inadequate facilities/poor staffing and equipping/lack of disability facilities/lack of disaster management facilities and services
6. *Natural Resources* – un-regulated extraction/unexploited potential/diminishing forests/denudation of land
7. *Agriculture* – low productivity of land/inadequate crop variety/post-harvest losses/lack of support infrastructure/low level of industrialization/low rainfall/soil degradation/Inadequate extension services/poor farming techniques
8. *Tourism* – undeveloped tourism assets and potentials/inadequate infrastructure/low levels of visitation
9. *Urbanization* – encroachment upon public lands/lack of tenure security for plots/encroachment on road reserves/insecurity/drug abuse

It is instructive to note that all these concerns hinge on the manner in which the land resource, and its utilization, is managed. All human activities are anchored upon land and their impacts are felt thereof. Consequently, the derivation of benefits is much dependent on the extent to which land, as the primary resource and setting of nature's processes and human activity, is well managed.

Collectively, the issues raised and perspective on the appropriate responses point to the need conservation, development and sustainable exploitation of resources, expansion of access to infrastructure and services, integrated settlement planning, and integration of cross-cutting considerations such as disability, safety and security, disaster management and climate adaptation.

In addition therefore, to adopting the guiding references of the Kenya Vision 2030, the National Land Policy, the National Spatial Plan and the Makueni Vision 2025, Makueni's prosperity quest ultimately hinges upon the sustainable exploitation of its land and landed resources, and optimization of benefits accruing thereof. In this regard, the County Spatial Plan adopts the catchphrase "**Ardhi Fanikishi**" or "Every Acre Enables" in parallel to Makueni Vision 2025's "**Kila Nyumba CƎkalila**" to enlist both the participation of its resources and its peoples in the pursuit of "**a prosperous, value based county with high quality of life**". Consequently, the overarching vision for the County Spatial Plan is;

Optimal and sustainable utilization of Makueni County land to achieve a high quality of life for every household.

The catchphrase "**Every Acre Counts**" invokes an ideology of space that is geared towards optimizing the intrinsic and latent potentials of land as may be realized in its smallest unit of appropriation, and harnessing their best use towards realizing the people's aspirations on their desired living circumstance and condition of life. To this end, the people of Makueni gave their perspective on how this vision may be actualized in terms relevant to their key areas of concern as follows;

1. Protection and *Conservation* of the Environment
2. Development and *optimization* of Land potentials
3. Exploration and *sustainable exploitation* of natural resources
4. *Diversification* of agricultural produce, adoption of *sustainable and economically viable* farming practices and techniques and, improved marketing of produce and enhancement of *value addition* industrialization

5. Development of the County's tourism *potential*
6. *Improvement* of road accesses
7. *Expansion* of infrastructure service grids and supply of services
8. *Equitable and convenient distribution* of social facilities and services
9. *Planning* of urban centres, improvement of services and security
10. Development of *disability and disaster response* facilities and infrastructures

4.2. Spatial-Structuring Concepts

The County's territorial space is both the context and template within which the above responses may be structured in such a way as to achieve the desired effect in respect of expressed concerns. The historical peopling of Makueni's territorial space, and its habituation through human spatial practice, has progressively altered the intrinsic qualities of constitutive natural spaces in such a way as to affect their integral functioning and ability to sustain the very natural and human processes it is meant to support. A re-engineering of the territory and its embedded resources is therefore necessary, both for purposes of reversing the damage inflicted, and to make it fit for the purposes of delivering the pronounced aspirations of Makueni's peoples.

Such re-engineering will be achieved through territorial structuring framework based on land use management systems and modes of spatial practice that uphold values and principles that are both *restorative* and *facilitative*. This means that efforts to conserve land and landed resources ought not to diminish the capacity of man to derive benefits accruing thereof. And whereas therefore the adopted spatial development framework for Makueni County is geared towards addressing a number of weaknesses and threats associated with its existing spatial (territorial) structure, it has to start from the premise that not all is the matter.

A critical evaluation of the character and function of key structural components largely demonstrates that these, both in their individual capacities or when working as an integrated whole, bear certain qualities that may serve as building blocks of a formidable framing template and guiding reference in aid of the pursuit for a progressive County. Consequently, these qualities are embraced as sources of elaborate spatial-structuring concepts that will subsequently be deployed in a wholesome effort to restore the integrity of key territorial elements, enhancing their functioning, and adapt them to suit local spatial practice.

Four such concepts, which are shaped by Makueni's people's aspirations as informed by the *Kenya Vision 2030*, and as further localized through the *Makueni Vision 2025*, and which this plan seeks to realize through the *Makueni Spatial Vision 2030*, are proposed and embody the overall strategy of intervention.

8. The **DfchWfcf'7 cbWdh** of Sacred Nature-scapes – Areas Needing Protection
- 5 The **5 Wj Urcf'7 cbWdh** of Productive Culture-scapes - Specialized Production Areas
- 6 The **: fUa]b['7 cbWdh** of Connector Spines and Ribs – Regional Connectivity and Positioning for Competitiveness
- 7 The **9bUV'Yf'7 cbWdh** of Networked Hubs and Spokes – Territorial Access and Hinterland Penetration, Infrastructure Distribution, Settlement Structuring, Manufacturing and Commerce

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The synthesis of the existing spatial structure highlighted the fragile nature of the Makueni's land, both in terms of geophysical properties of *constitutive landforms* and embedded *ecologies and ecosystems* supported thereof. Of particular concern are;

1. The challenging topography of the County's northwest, as characterized by undulation and steepness of hills, and this, coupled with the fact of the area's watershed properties. The areas were identified as undergoing degradation, both of the land, and of the watershed, inflicted by the land use practices of an expanding local population.
2. The fragility of the recently formed volcanic field to the County's southwest and the associated ecosystem, both of which are threatened by encroaching human activity
3. The marginal nature of the County's land to the southeast, and which was likewise identified to be undergoing degradation as a result of the stripping of the land off its protective bush, brush and grass covering, thereby exposing the loose soils to rain and wind erosion.
4. The County's underground water aquifers, seasonal wetlands and surface water channels, which are under threat due to over-abstraction, siltation and uncontrolled sand harvesting.
5. Wildlife sanctuaries which are facing encroachment by human activities, leading to increased incidences of human-wildlife conflict.

The *protector concept of "sacred nature-scapes"* considers these five natural areas as critical for maintaining the balance between natural and human processes, and their integrated systemic integrity to be crucial for supporting life. Consequently, the plan treats these as sacrosanct spaces needing protection, and subsequently suggests a strategy to stem the encroachment, and where possible, restore these areas to their original state.

+ "&"& DfcXi Wj Y7i `hi fY!gWUdYg`

An evaluation of Makueni's land indicates the suitability of different areas for different activities, including agriculture, conservation and tourism, mining, settlement and commerce. And whereas the people of Makueni have sought to exploit potentials inherent thereupon, accruing benefits are yet to be fully realized. This is partly due to poor production practices and techniques, and the lack of the necessary facilitative infrastructure. The *activator concept of "productive culture-scapes"*, even while showcasing the promise of Makueni's land and landed resources, invokes the unique cultural traits that have long defined and shaped the peoples spatial practices. Consequently, it takes these as entry points of an exploitative strategy that seeks to maximize productivity within a management framework that fosters environmental stewardship.

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The analysis of Makueni's existing spatial structure underscored the County's unique positioning relative to Key international and national infrastructural thoroughfares, including, rail and road corridors, oil pipeline and energy transmission mains. These have not only served to securely anchor the County territorial space and connect it to broader territorial spheres, but likewise bring into proximity the services necessary to activate key economic sectors. The *framing concept of "connector spines and ribs"* while appreciating the opportunities that these assets portend, seeks to deploy these toward enhancing Makueni's competitiveness in the

region, both in terms of showcasing its suitability as an investment hub, and as instruments to enhance market access for local produce.

4.2.3 Enabling Concept

It would be impossible to activate Makueni's latent potentials without an elaborate scheme to facilitate the development of locally available resources, and enlist the participation of Makueni's people in the pursuit of the desired progressive society. The *enabler concept of "networked hubs and spokes"* seeks to do exactly that by deploying four elements, namely; means of territorial access and hinterland penetration, expansion of infrastructure distribution grids, settlements structuring through thoughtful siting, classification of and allocation of requisite functions, and provision of infrastructure and services to support manufacturing and commerce. This will also include the ordering of rural settlement patterns to reverse sprawl and make efficient the provision of services, and position rural urbanization as service and market centers. The strategy is geared towards integrating all these elements into a framework for activating production areas, facilitating non-agricultural vocations, enhancing incomes and improving the standards of life for Makueni people.

4.3 Territorial Restructuring Proposals

The above spatial concepts are further translated into strategies of intervention specific to each of the areas earlier identified as constituting the County's existing spatial structure. The strategies are subsequently translated into sector perspectives, which in turn are pursued through a variety of achievable sector-specific programmes and projects localized in specific areas. The spatial strategies are briefly summarized below and further elaborated in the next chapter.

4.3.1 Geophysical Structuring

The plan adopts the existing geophysical properties of the County territory as an entry point for formulating the County spatial development framework. Consequently, the three natural components (landforms, drainage and ecology) are integrated into one apparatus that will serve as a primary organizing element in a strategy of "structuring by nature". The strategy entails delineating all the areas within the County that are prone to degradation (steep hill slopes, riparian), hazard prone areas (scarps, volcanic fields), environmentally sensitive areas (wetlands, wildlife habitats). Specific intervention measures are then suggested in relation to each of the areas as follows;

Landforms

1. The Uplands - afforestation, agro-forestry, terracing, gabions, protection of springs and wetlands
2. The Midlands - Promote sustainable cultivation practices
3. The Lowlands - Controlled water abstraction, afforestation, pasture development
4. Chyulu Hills - Afforestation, tourism promotion, wildlife conservation.
5. The Yatta Plateau – Backdrop to be exploited for tourism promotion

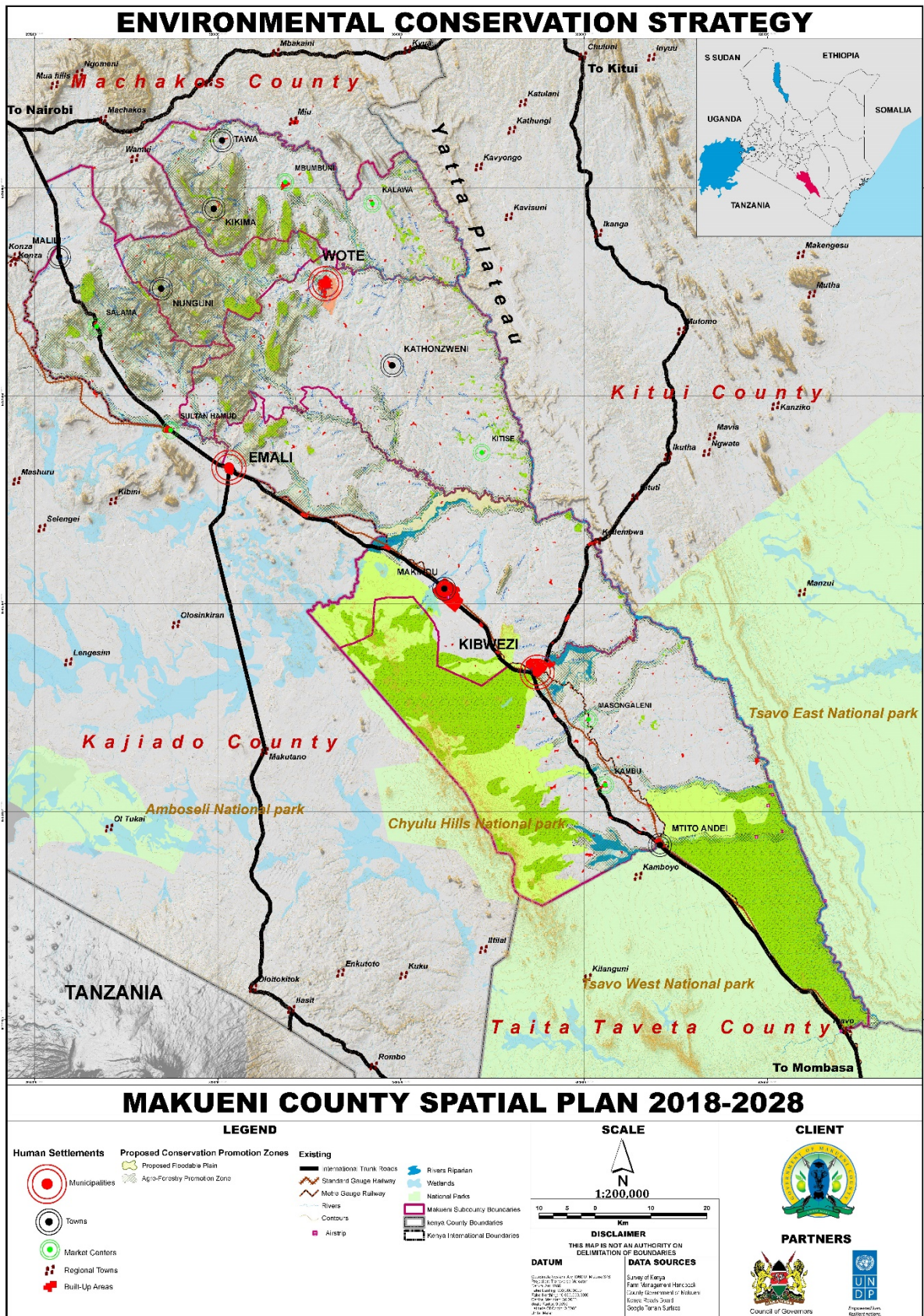


Drainage

1. Streams and Small Rivers – Riparian buffering, afforestation, and water abstraction control.
2. Large rivers - Riparian buffering, afforestation, controlled water abstraction, sustainable sand harvesting.
3. Springs and Wetlands - Protection, wetland conservation, controlled water abstraction.

Ecology

1. Forests - Fence all gazette forests, introduction of wildlife, introduction of forest tourism, planting of indigenous trees, develop a forest management plan.
2. Bushland - Afforestation, re-zone for biofuel production, planting of drought resistant woodlots,
3. Grasslands - Pasture development, ranching promotion,
4. Barren land – Ban farming activities, designate as wildlife conservancies

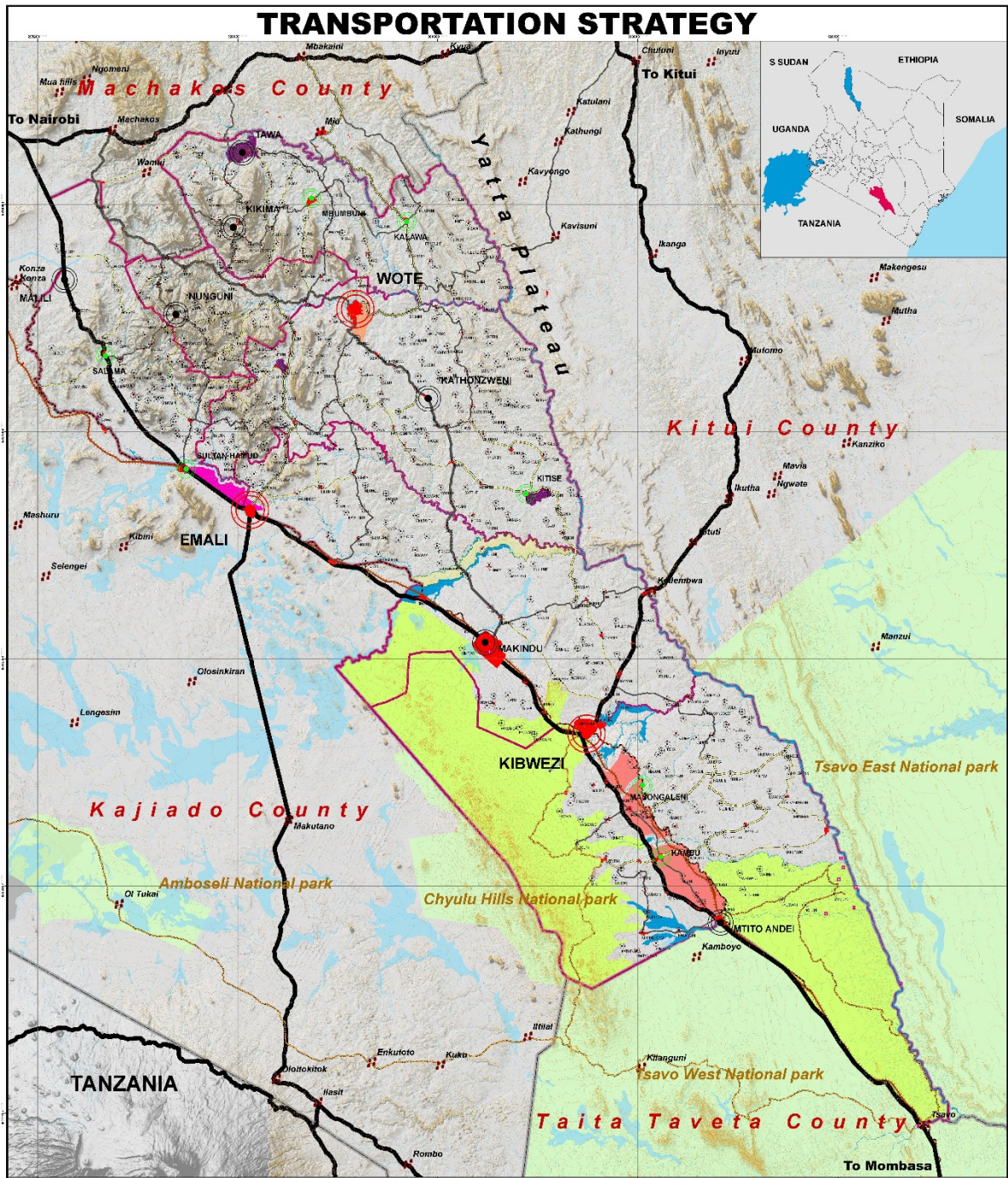


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The plan builds on the existing transportation structure to enhance the County's region connectivity to external territories and places and improve penetration and permeability into the County territory through road accesses and circulation channels. The regional connectors shall continue playing their critical role facilitating County linkages with external domains. The railroad strand shall continue to serve its primary function as an anchoring spine, and the point from which major County arterials proceed into the hinterland. , subsequently opening it. The dense feeder network of rural roads shall selectively be upgrading to assist in directing rural settlement patterns and facilitating production activities in the interior. The following specific proposals are proposed in relation to each level in the transportation system.



1. Regional Connections - Upgrading (A109/ Kibwezi-Kitui, A109/ Makindu-Wote, A109/Emali-Ukia, C99 (Emali-Ukia-Machakos), C101(Itangini-Kikima), C99 (Mukuyuni-Tawa), Wote-Kalawa-Machakos-Kitui
2. The Railroad Corridors - Improve intermodal connectivity, develop a logistics terminus, reduce stop overs and regularize settlement interval, establish disaster management centres, upgrade the interchanges.
3. County Arterials – Improve to bitumen standards
4. County Feeders - improve road condition through murraming
5. Airports and Airstrips – Upgrade Makindu Airstrip to airport, renovate airstrips within game parks



MAKUENI COUNTY SPATIAL PLAN 2019-2029

LEGEND		SCALE	CLIENT
Human Settlements Municipalities Towns Market Centers Local Centers Regional Towns Built-Up Areas	Proposed Economic Development Zones Proposed Enterprisezone Proposed Agro-processing Zone Proposed Industrial zone Proposed Special Economic Zones Proposed Extension of National Park	 1:200,000 0 5 10 20 Km DISCLAIMER THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES DATUM WGS 1984 UTM Zone 39S Datum: WGS 1984 Projection: UTM Spheroid: WGS 1984 Datum Shift: 0 Units: Meter Datum Year: 1984	 COUNCIL OF GOVERNORS PARTNERS United Nations Development Programme
Proposed Transportation Linkages Proposed Upgrade to National Linkage Road Proposed Upgrade to County Linkage Roads Proposed Tourism Circuit Roads Proposed Upgrade to Class D Roads	Proposed Transportation Linkages Proposed Upgrade to National Linkage Road Proposed Upgrade to County Linkage Roads Proposed Tourism Circuit Roads Proposed Upgrade to Class D Roads		

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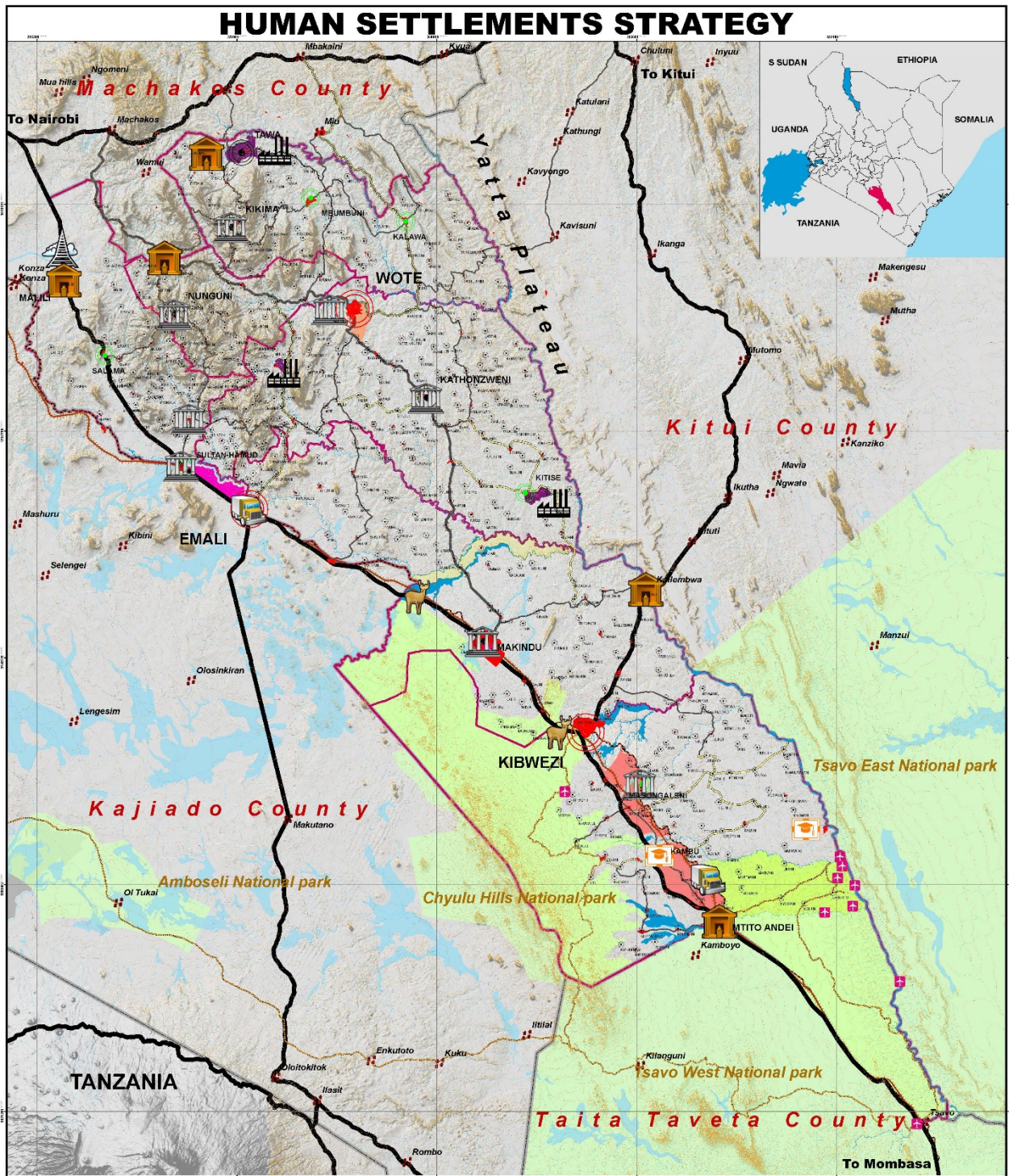
Urbanization is key to the human settlement strategy. Essentially, the Plan seeks to encourage a steady movement to urban areas and clustered rural settlements as a means to forestall encroachment on fragile areas and ecologies, safeguard the integrity and productivity of agricultural land, enhance access to services, improve convenience with regard to access to consumer goods, position the county for industrialization, and improve security.

1. Corridor Urbanization - Undertake Classification, promote functional differentiation and specialization, encourage necklace (interval) rather than linear urbanization, prepare plans and undertake development control, upgrade services, ready for future growth through land banking



2. Interior Urbanization - Designate Wote, Kibwezi and Emali as municipalities, and Tawa, Kikima, Nunguni and Makindu as towns, improve service provision
3. Rural Settlements - Encourage clustering of settlements, create compact villages, promote cottage industrialization.





MAKUENI COUNTY SPATIAL PLAN 2019-2029

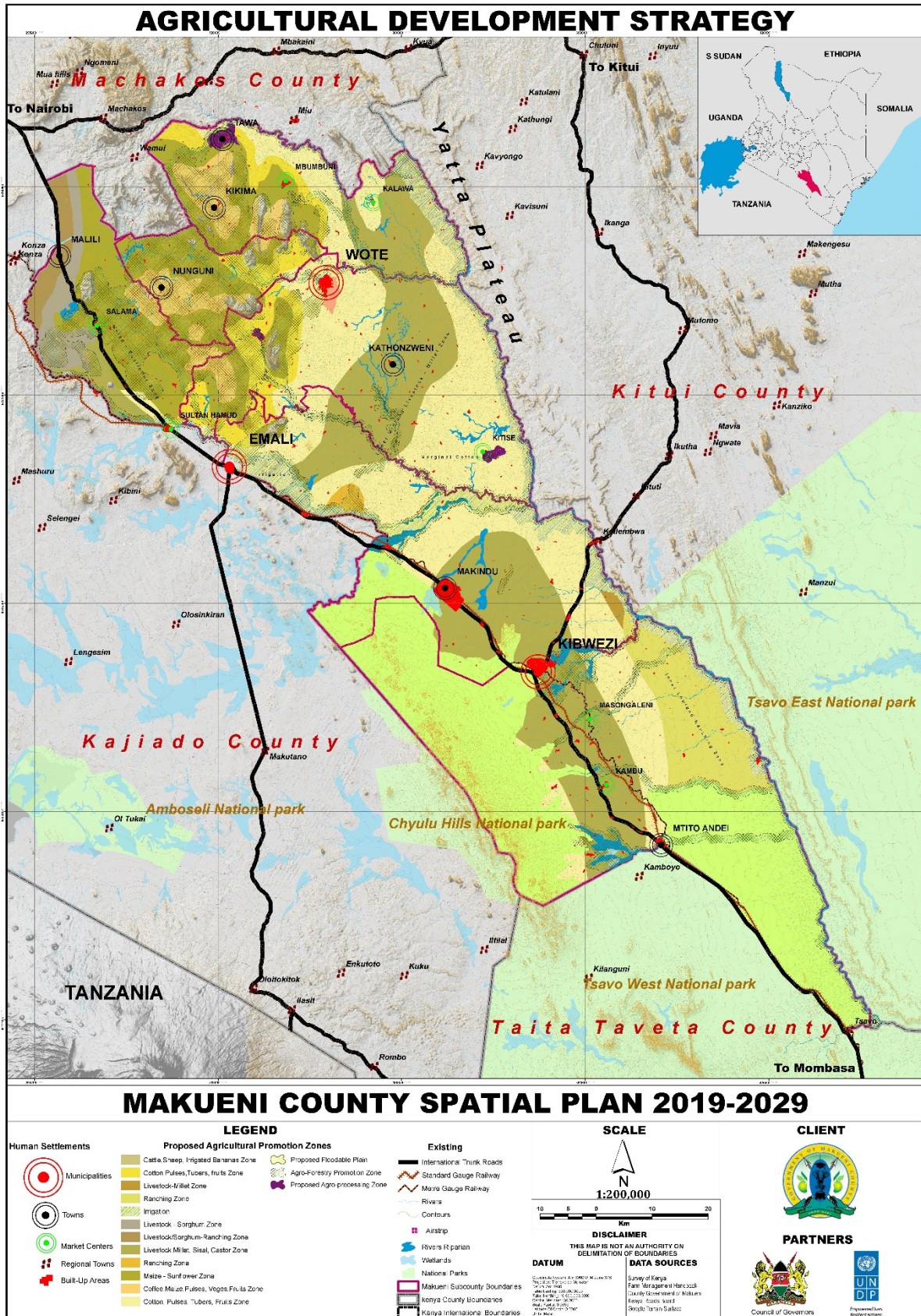
LEGEND		SCALE	CLIENT
		<p>SCALE</p> <p>1:200,000</p> <p>0 5 10 20 Km</p>	<p>CLIENT</p>
		<p>DISCLAIMER</p> <p>THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES</p>	<p>PARTNERS</p> <p>Council of Governors</p>
		<p>DATUM</p> <p>WGS 84</p>	<p>DATA SOURCES</p> <p>Survey of Kenya</p> <p>Land Management Handbook</p> <p>County Government of Makueni</p> <p>Kenya Roads Board</p> <p>Google Terrain Surface</p>
		<p>Local Access</p> <p>Rivers</p> <p>Contours</p> <p>Proposed Floodable Plain</p> <p>Wetlands</p> <p>National Parks</p> <p>Proposed Extension of National Park</p> <p>Built-Up Areas</p> <p>Rivers Riparian</p> <p>Makueni Subcounty Boundaries</p> <p>Kenya County Boundaries</p> <p>Kenya International Boundaries</p>	

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Agriculture is a key component of Makueni's economic revival. The plan designates areas of differentiated agricultural activity based on potential of such areas to support those activities. Six key agricultural production activities are identified as constitutive of Makueni's agricultural sector and as building blocks of a formidable strategy for an agrarian revolution.

1. Apiculture - Cooperative processing, packaging, marketing of honey, establish a honey making factories, commercial bee farms, extension services
2. Fruits and Coffee - establish commercial orchards, promote variety in fruit production, establish fruit collection and market centers, improve road connectivity between farms and collection/ marketing/processing centers, expand capacity of existing processing plants, establish cold fruit storage, extension services, irrigation.
3. Cotton, Sisal, Sericulture – promote commercial production of cotton, establish collection and marketing centers, extension services, build processing plants
4. Grain Production - Promote commercial production, increase variety, promote climate smart agriculture, construct storage facilities, establish collection and marketing centers, extension services, enhance value-addition industrialization
5. Irrigated horticulture - promote irrigation along River Athi, Muooni, Kambu, Kiboko, Kaiti, Thwake and Mtito Andei.
6. Meat, dairy, poultry and fisheries - establish commercial ranches, land consolidation, pasture development, establish livestock yards in every lowland ward center, construct modern abattoir, establish hides and skin collection centres, construct a tannery, construct a meat processing plant, construct milk cooling and processing plants



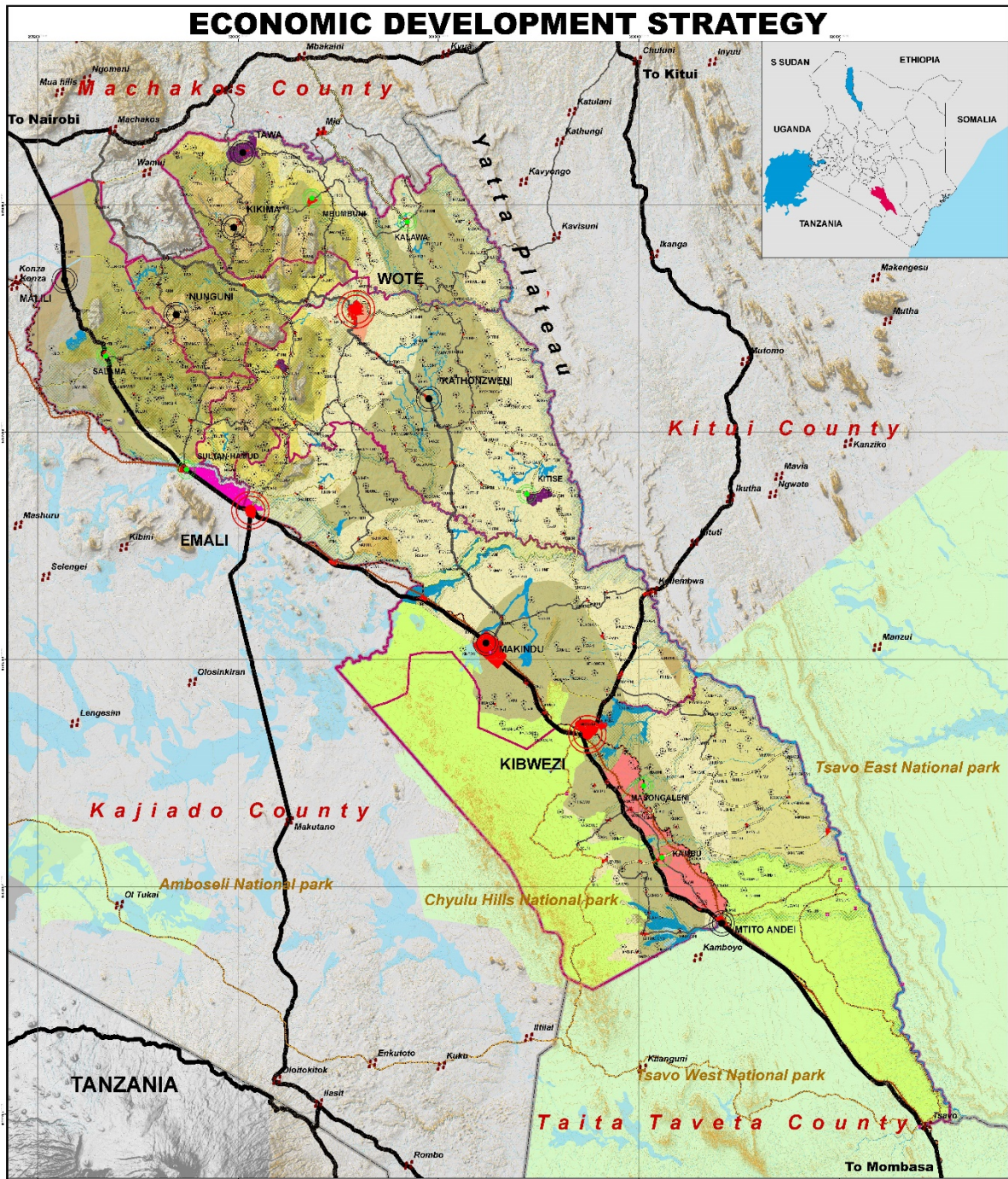


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The hallmark of the economic development strategy is the promotion of value-addition industrialization targeting the processing and conversion of extracted raw materials and agricultural produce. This will subsequently form a backbone for an export-oriented trade and thriving urban-based commerce. Targeted interventions shall be directed towards establishing, along the Mombasa-Malaba infrastructure band, a special economic zone (Mtito Andei-Kibwezi stretch), and industrial zone (Emali-Sultan Hamud stretch), agro-processing zones in the interior (Tawa, Kalawa, Kitise), an enterprise zone in Wote, while activating a vibrant tourism economy within protected areas (Chyulu and Ngai Ndeithya).



1. Industry and Manufacturing – Establish agro-processing and manufacturing industries in rural and urban areas, respectively, establish handcraft centres, establish a kaolin market, designate areas for jua-kali industry.
2. Trade and Commerce - Establish specialized trade centres, grain markets, establish jua-kali products markets in selected market centres.
3. Tourism - Expand existing parks, establish conservancies, create a conservation area around Chyulu hills, expand Ngai Ndethya National Reserve and Kibwezi forest reserve, protect wetlands for biodiversity, promote investment in tourism facilities, establish sanctuaries for crocodiles and hippo sanctuaries, establish snake parks, establish museum, catalogue heritage sites, construct cultural centers, design a tourism circuit that connects Chyulu, Tsavo and Ngai Ndethya National Parks.



MAKUENI COUNTY SPATIAL PLAN 2019-2029

LEGEND				SCALE	CLIENT
Human Settlements Municipalities Towns Market Centres Local Centres Regional Towns Built-Up Areas	Proposed Economic Development Zones Proposed Enterprise Zone Proposed Agro-processing Zone Proposed Industrial Zone Proposed Special Economic Zones Proposed Extension of National Park Proposed Transportation Linkages Proposed Upgrade to National Linkage Road Proposed Upgrade to County Linkage Roads Proposed Tourism Circuit Roads Proposed Upgrade to Class D Roads	Proposed Agricultural Promotion Zones Cattle/Sheep - Irrigated Bananas Zone Cotton/Pulses/Tubers, Fruits Zone Livestock-Millet Zone Ranching Zone Irrigation Livestock - Savannah Zone Livestock/Sorghum-Ranching Zone Livestock/Millet, Sesal, Castor Zone Ranching Zone Maize - Sunflower Zone Cotton/Maize/Pulses, Vegetables/Fruits Zone Cotton, Pulses, Tubers, Fruits Zone Proposed Floodable Plain Agro-Forestry Promotion Zone	Infrastructure: Thrift Roads National Trunk Roads County Arterial roads Economic Gauge Railway Meter Gauge Railway Local Access Roads Rivers Canals Wetlands National Parks Municipal Boundaries County Boundaries Kenya Internal and Boundaries	SCALE 1:200,000 N 10 5 0 5 10 20 Km DISCLAIMER THIS MAP IS NOT AN AUTHORITY ON DELIMITATION OF BOUNDARIES DATUM WGS 84 UTM Zone 39S Datum: WGS 84 Projection: UTM Units: Meter Datum: WGS 84 Projection: UTM Units: Meter	CLIENT PARTNERS Council of Governors Representative Institutions

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1. Consumer Services - Expand service (communication and ICT, energy, water supply) provision in all urban centers
2. Waste management - construct sewer treatment plants in large towns, establish solid waste recycling plant
3. Expand access to social services – education, health
4. Institutional infrastructure – enhance security, expand access to administrative services
5. Sports and Recreation – construct stadia in major towns





Conservation Zones

1. Forestry/Agroforestry Zone - afforestation, agro-forestry, terracing, gabions, protection of springs and wetlands - Promote sustainable cultivation practices
2. Riparian Zones - Riparian buffering, afforestation, and water abstraction control
3. Wildlife Conservation Zone - Afforestation, tourism promotion, wildlife conservation.

Agriculture Zones

1. Coffee Growing Zone – reinvention of the coffee sector, construction of value addition industries, control of land subdivision
2. Cotton/Sisal Growing Zone – land consolidation
3. Dairy/Intensive Mixed Farming - promote sustainable cultivation practices, improvement of animal husbandry, intensification of production, technology assisted production
4. Irrigation Horticulture Zone- proper soil conservation strategies, efficient water use.
4. Livestock/Ranching Zone – land consolidation, pasture development

Industrial Zones

1. Proposed Industrial Zone – proper waste management, infrastructure development
2. Proposed Agro-processing Zone – proper waste management, development of complementary functions

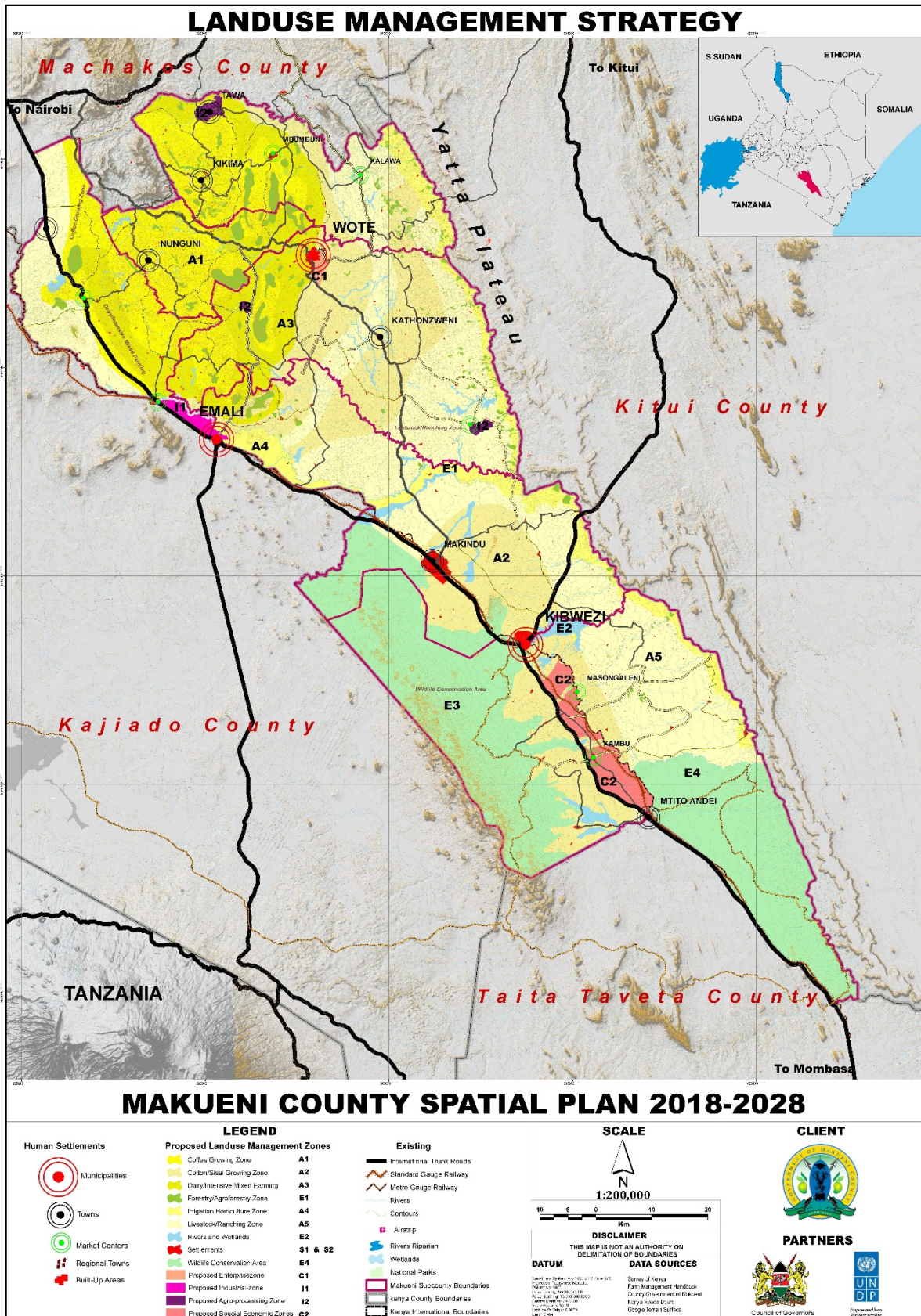
Commercial Zones

1. Proposed Enterprise Zone – promote branding, proper planning
2. Proposed Special Economic Zones – promote mix-use land use paradigm

Settlement Zones

1. Urban Areas – proper planning, upgrading of services
2. Rural Settlements – clustering around small urban centers, promote as service centers and hubs for cottage industrialization

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7 cbgYfj U]cb` NcbY'	E1. Forestry/Agroforestry Zone	<ul style="list-style-type: none"> • Mbooni • Kilungu 	<ul style="list-style-type: none"> • Undulated terrain with steep slopes • Watershed with numerous springs 	<ul style="list-style-type: none"> • Afforestation • Agro-forestry • Low-impact agriculture 	<ul style="list-style-type: none"> • Terracing, gabions, • Protection of springs and wetlands • Promote sustainable cultivation practices
	E2. Riparian Zone	<ul style="list-style-type: none"> • Along major rivers • wetlands 	<ul style="list-style-type: none"> • Inclined slope and loose sandy soils 	<ul style="list-style-type: none"> • Afforestation • Agroforestry 	<ul style="list-style-type: none"> • Riparian buffer demarcation and gazettement • Water abstraction control • Sand harvesting control
	E3. Protected Area	<ul style="list-style-type: none"> • Chyulu Hills 	<ul style="list-style-type: none"> • Dormant volcanic area • Varied terrain from undulating hills to gently inclined scrubland 	<ul style="list-style-type: none"> • Ecological conservation. • Eco-tourism promotion 	<ul style="list-style-type: none"> • Demarcation and gazetting • Targeted afforestation • Re-establishment of brush and grass cover
	E4. Wildlife Zone	<ul style="list-style-type: none"> • Ngai Ndeithya 	<ul style="list-style-type: none"> • Gently-inclined scrubland • Limited land cover • Poor soils not suitable for cultivation 	<ul style="list-style-type: none"> • Ecological conservation. • Eco-tourism promotion 	<ul style="list-style-type: none"> • Demarcation and gazettement • Re-establishment of brush and grass cover • No settlement activity
5 [f]W`hi fY' NcbYg'	A1. Coffee Growing Zone	<ul style="list-style-type: none"> • Kilungu 	<ul style="list-style-type: none"> • Undulated terrain with steep slopes • Watershed with numerous springs 	<ul style="list-style-type: none"> • coffee cultivation 	<ul style="list-style-type: none"> • control of land subdivision • coffee plantations to be used as land cover on steep slopes • Min Land size 4ha.
	A2. Cotton/Sisal Growing Zone	<ul style="list-style-type: none"> • Kathonzweni • Kibwezi 	<ul style="list-style-type: none"> • Gently-inclined scrubland • Scrubland savannah 	<ul style="list-style-type: none"> • Cotton and Sisal plantations • Livestock rearing 	<ul style="list-style-type: none"> • Control of land subdivision • Land consolidation • Min Land size 10ha
	A3. Dairy/Intensive Mixed Farming Zone	<ul style="list-style-type: none"> • Mbooni, • Tawa, • Kalawa, 	<ul style="list-style-type: none"> • Undulated terrain of moderate slope • Good soils 	<ul style="list-style-type: none"> • Mixed farming • Dairy farming • Fruit cultivation 	<ul style="list-style-type: none"> • sustainable cultivation practices • intensification of production • technology assisted production

		<ul style="list-style-type: none"> • Kathonzweni • Kilungu • Kalamba 	<ul style="list-style-type: none"> • Moderate availability of water 		<ul style="list-style-type: none"> • Min land size 2ha
	A4. Irrigation Horticulture Zone-	<ul style="list-style-type: none"> • Along major rivers • Identified lowlands and wetlands 	<ul style="list-style-type: none"> • Gently-inclined riparian areas • Flat poorly drained areas 	<ul style="list-style-type: none"> • Irrigated Agriculture 	<ul style="list-style-type: none"> • Proper soil conservation strategies • Efficient water use • Control use of farming chemicals. • Min land size 4ha
	A5. Livestock/Ranching Zone	<ul style="list-style-type: none"> • Kathonzweni • Kibwezi 	<ul style="list-style-type: none"> • Gently inclined to flat terrain • Savanna grasslands 	<ul style="list-style-type: none"> • Pasture development • Livestock Ranching • Bee-keeping 	<ul style="list-style-type: none"> • Land consolidation • Targeted afforestation • Controlled grazing • Min land size 40ha
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	I2. Proposed Agro-processing Zone	<ul style="list-style-type: none"> • Kalamba • Tawa • Kitise 	<ul style="list-style-type: none"> • Gently inclined to flat terrain 	<ul style="list-style-type: none"> • Agro-processing Industries 	<ul style="list-style-type: none"> • Demarcation and land banking • Proper planning • Pollution control and waste management
7 ca a YfWU᐀ NcbYg᐀	C1. Proposed Enterprise Zone	<ul style="list-style-type: none"> • Wote town • Kikima town • Nunguni town 	<ul style="list-style-type: none"> • Major Population & Civic center perched within a scenic backdrop 	<ul style="list-style-type: none"> • Commerce and trade • Administration • Civic functions • Social Services and facilities • Recreation and hospitality 	<ul style="list-style-type: none"> • Proper planning • Targeted ranching • Landscaping and enhancement of outdoor spaces • Min land size 0.045ha
	C2. Proposed Special Economic Zones	<ul style="list-style-type: none"> • Mtito Andei-Kibwezi stretch 	<ul style="list-style-type: none"> • Gently-inclined terrain • Rocky soils unsuitable for Agriculture • Infrastructure nervus 	<ul style="list-style-type: none"> • Industrial processing • Complementary industrial activities 	<ul style="list-style-type: none"> • Proper planning • Demarcation and land banking • Proper planning • Branding and Urban design

				<ul style="list-style-type: none"> • Support commercial enterprise 	<ul style="list-style-type: none"> • Pollution control and waste management • Min land size 2ha
GYhiYa Ybhi NcbYg'	S1. Urban Areas	<ul style="list-style-type: none"> • Along A109 • Along major County accesses 	<ul style="list-style-type: none"> • Linear development along major transport corridors 	<ul style="list-style-type: none"> • Urban settlement development 	<ul style="list-style-type: none"> • Proper planning • Prevent linear sprawl • Upgrading of services • Min land size 0.045ha
	S2. Rural Settlements	<ul style="list-style-type: none"> • Entire County 	<ul style="list-style-type: none"> • Rural dispersal 	<ul style="list-style-type: none"> • Villages and service center development 	<ul style="list-style-type: none"> • Promote clustering around small urban centers, promote as service centers and hubs for cottage industrialization • Min land size 1ha (uplands), 4ha (midlands), 10ha (lowlands) •

Chapter 5: Development Perspectives

The spatial concepts outlined in the previous chapter present the various options for development of Makueni County on its space. This chapter presents various development model trajectories that can be adopted to organize the County space. In addition, detailed sectoral strategies have been proposed in this chapter aiming at domesticating the CSP vision within the various sectors, to ensure (1) optimal utilization of land/ resources; (2) high quality of life (3) for every household.

The CSP will provide a framework for land to deliver convenient access to quality services for everyone, while land playing a facilitative role in aiding sectors to create meaningful opportunities for everyone to participate in building a vibrant economy. The proposals herein are aimed at enabling the various sectors to take advantage of the framework created by the CSP for spatial order, the creation of spatial justice and increased opportunities for sector prosperity within the 10 years of plan operation.

5.1 Development Models

Over the plan period (2019-2029), development in Makueni can take three distinct paths of growth:

- Conservation-led growth,
- Agro-industrial growth, or,
- Urbanization and trade-led growth.

5.1.1 Conservation-led Growth Model

The conservation development model seeks to promote sustainable utilization of Makueni County's natural resources and harnessing of the potential posed by the natural environment to catalyze all economic sectors. This model looks at all the elements of natural resources, such as:

- Land resource
- Geological resources (such as soils, minerals)
- Water resources (such as underground and surface water)
- Forest resources
- Green energy resources (such as solar, wind and hydro-power)
- Wildlife and other scenic resources

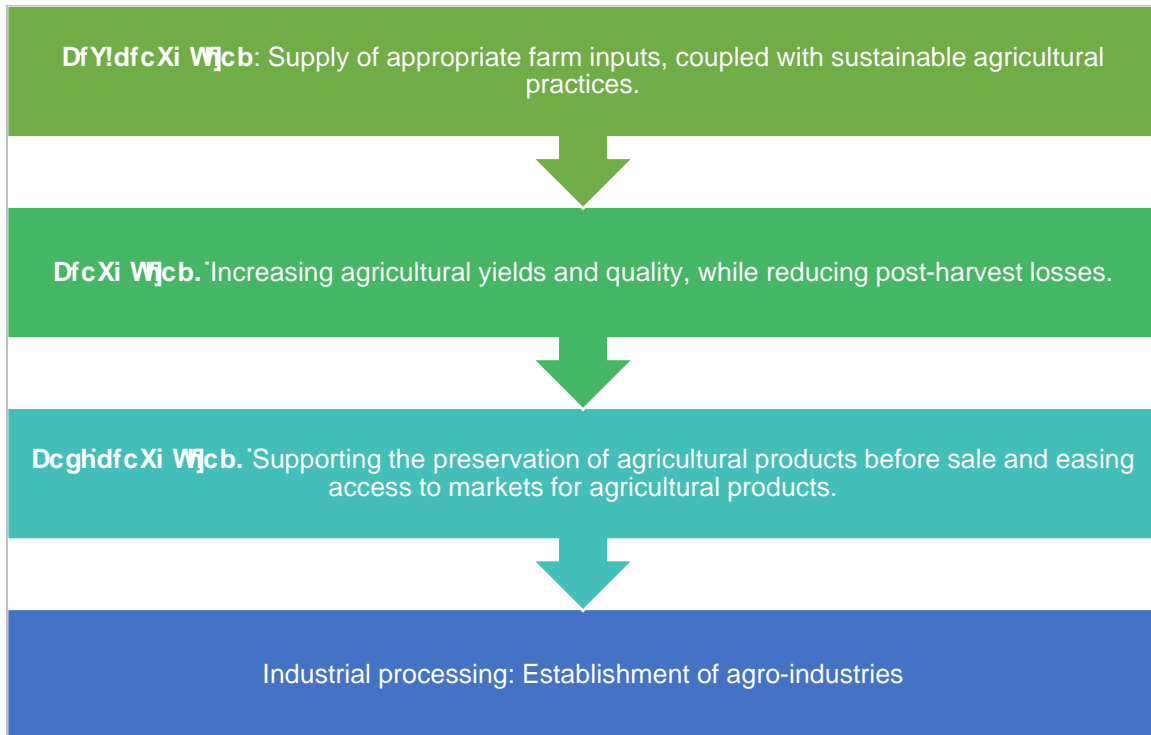
The aim of this model is to:

- Halt further degradation of ecological fragile areas.
- Facilitate sustainable extraction of natural resources.
- Harness the untapped natural resources for improved livelihoods and economic growth.

3.2.2.2. Agro-industrial development model

This model acknowledges the importance of the agricultural sector to Makueni County. The agro-industrial development model seeks to transform the agricultural sector through targeted interventions at all points of the agricultural value-chain.

3.2.2.2.1. Supply of appropriate farm inputs, coupled with sustainable agricultural practices



3.2.2.3. Urbanization, trade and commerce development model

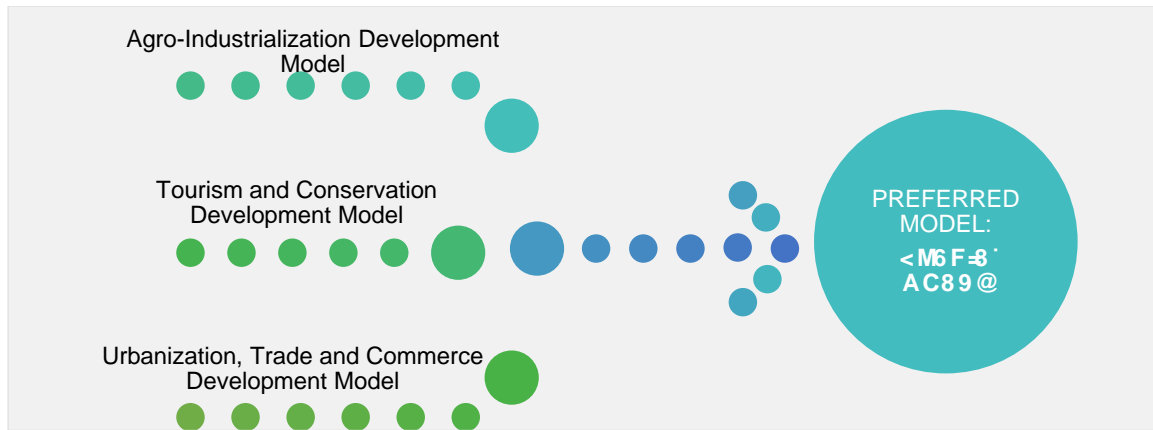
The urbanization, trade and commerce development model seeks to create a system of planned urban areas that will serve as hubs for commerce. This model seeks to:

- Delineate the edges of urban centers.
- Develop a hierarchy of county urban centers.
- Assign functions to urban centers, based on their predominant specialization or potential, based on available resources (both natural and man-made).
- Facilitate trade and commerce through a planned network of market infrastructure and an enabling environment to do business.

5.1 Preferred Development Model

The Makueni CSP adopts a hybrid development model that takes the strengths of each of the three distinct development models, creating a sustainable development trajectory over the next decade.

5.1.1 The Hybrid Development Model



The hybrid model seeks to:

1. Promote the revitalization of Makueni's rural areas through agro-industrialization, supported by regional zonation of agricultural specialization and a network of industrial facilities.
2. Awaken the marginal zones of Makueni by promotion of wildlife tourism, with conservation serving to halt further degradation of the lowland's natural environment, while diversifying the economic activities within that region.
3. Catalyze the County by a system of planned, specialized, urbanized trade and commerce hubs that will jump-start the economy of Makueni by:
 - o Providing an internal network of markets for county produce/ services.
 - o Creating hubs for export of county produce/ services to the region.

The enabling sector for achievement of the aims of the preferred development model is infrastructure and service utilities that will support agro-industrialization, tourism and conservation and productive urbanization. The section below details the various strategies that need to be put in place, per sector, to actualize the desires of the preferred/ hybrid model.

5.2 Sector Development Strategies and Flagships

The sector strategies and flagships, under the preferred development model, have been detailed out in five major categories:

1. Environment and natural resource strategy
2. Agricultural development strategy
3. Economic development strategy
4. Settlement development strategy

- 5. Transportation development strategy
- 6. Infrastructure and services development strategy

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The interventions on natural resource seeks to realize sustainable development goals numbers 6, 7, 13, 15 which aims at ensuring access to water and sanitation for all; affordable, reliable, sustainable and modern energy for all; combat climate change and its impacts and sustainably manage forests, combat desertification, halt biodiversity loss, halt and reverse land degradation. The spatial structure of the proposed strategies for environmental conservation is illustrated in map 27.

Forests



<p>DchYbhU`.</p> <ul style="list-style-type: none"> • Tourism promotion • Economic development <p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Forest degradation and encroachment • Climate change 	<p>Dc`]WYg.`</p> <ul style="list-style-type: none"> • Increased forest cover • Sustainable forest resource utilization • Biodiversity preservation <p>GfUHY[]Yg.`</p> <ul style="list-style-type: none"> • Afforestation to increase the County tree cover to 20%: (10% dedicated forest cover and 10% agro-forestry). • Promotion of agro-forestry in all farms within the County through sensitization programs and: <ul style="list-style-type: none"> ○ Supply of drought-resistant tree seedlings to farmers in Kibwezi East and West sub-counties, as well as Nguu, Kathonzweni, Emali, Mathau, Kikumini, Mavindini and Kitise wards. ○ Supply of fast-growing tree seedlings to farmers for agro-forestry in Mbooni and Kilome sub-counties, as well the highly productive zones of Makueni sub-county. • Diversifying forest uses and benefits.
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	<ul style="list-style-type: none"> • Re-afforestation of all degraded forests. • Promotion of forest tourism such as nature trails. • Protection of all gazetted forests to curb forest encroachment and minimize human wildlife conflict.
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Rivers and wetlands



<p>DchYbhU.</p> <ul style="list-style-type: none"> • Hydropower generation • Irrigation potential • Tourism potential <p>7\ U`Yb[Yg.</p> <ul style="list-style-type: none"> • Riparian degradation and encroachment • Climate change 	<p>Dc`jWYg.</p> <ul style="list-style-type: none"> • Sustainable water resource utilization • Riparian biodiversity preservation <p>GfUH[jYg.</p> <ul style="list-style-type: none"> • Finalization of construction of the Thwake Dam. • Construction of dams at strategic areas along the river belts (along River Athi, Muooni, Kambu, Kiboko, Kaiti, Thwake and Mtito Andei). • Afforestation of all riparian land within the County using appropriate tree species. • Protection of endangered springs. • Controlled abstraction of water from the streams and springs within the County. • Control sand harvesting from the major and small rivers in the County. • Restriction of development along wetlands. • Protection of the biodiversity within wetlands (both flora and fauna).
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Hilly Areas



DchYbhU:

- Agricultural production (crop and livestock farming)
- Scenic tourism promotion
- Wind energy generation

7\ U`Yb[Yg:

- Soil erosion
- Inadequate tree cover

Dc`JWYg:

- Soil erosion control
- Sustainable natural resource utilization

GfUH[JYg:

- Establish one terracing and soil training centre at Nunguni
- Promotion of agro-forestry in all farms within this zone.
- Afforestation using indigenous trees along slopes county-wide.
- Promotion of terracing along all steep sloping areas within this zone.
- Promotion of the construction of gabions to control gully erosion.
- Establishment of wind energy generation farms at areas with high wind speeds.

Bushlands



DchYbhU:

- Agricultural production (crop and livestock farming)
- Bio-fuel production

Dc`JWYg:

- Sustainable natural resource utilization
- Soil erosion control

<p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Soil erosion • Inadequate tree cover 	<p>GfUM[]Yg.`</p> <ul style="list-style-type: none"> • Afforestation using drought-resistant woodlots. • Promotion of agro-forestry in all farms within this zone. • Promotion of terracing along all sloping areas within this zone. • Promotion of bio-fuel production.
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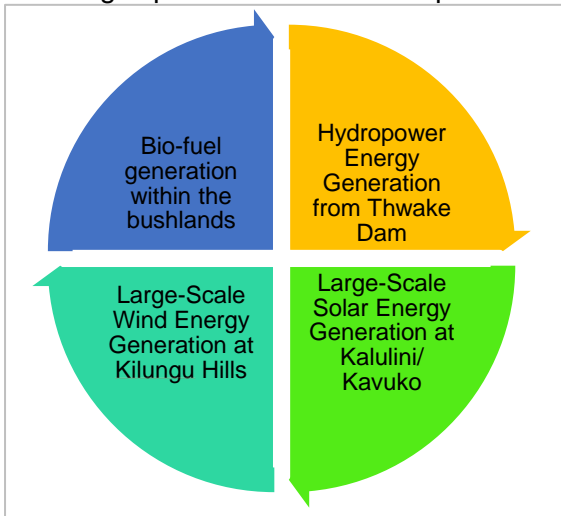
Savannah Grasslands



<p>DchYbU.`</p> <ul style="list-style-type: none"> • Wildlife tourism potential • Livestock farming • Solar energy generation <p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Soil erosion • Inadequate tree cover • Human-wildlife conflict 	<p>Dc`JY`Yg.`</p> <ul style="list-style-type: none"> • Gully erosion control • Sustainable natural resource utilization <p>GfUM[]Yg.`</p> <ul style="list-style-type: none"> • Construction of gabions to control gully erosion. • Promotion of large-scale ranching and pasture development. • Establishment of wildlife conservancies in wildlife rich zones. • Afforestation using drought-resistant woodlots • Establishment of large-scale solar energy generation farms at areas with high solar intensity. • Improve infrastructural connectivity within this region to support wildlife tourism. • Fencing of wildlife parks and reserves to minimize human-wildlife conflict.
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Environment Conservation Flagship Project: Renewable Energy Generation

This flagship will have 4 sub-components:



Green energy will be promoted through the readily available natural resources in the County: solar (particularly in the lowlands), hydropower (from the major rivers), bio-fuel (in the middle zones) and wind energy generation in the hilly areas.

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Kenya Vision 2030 and Makueni Vision 2025 identifies agriculture as a key driver in the County economy. The sector contributes over 78% of the household income in the County and employs a large proportion of the rural population. According to the Economic Survey 2017 in the country the sector contributes 25% to the Gross Domestic Product (GDP) and a further 27% through manufacturing, distribution and service sectors and accounts for over 65% of the export earnings. Overall, the sector provides food to the population, raw materials to the industries and generates foreign exchange earnings. The spatial structure of the proposed strategies for agricultural development is illustrated in map 30.



	<p>Dc`JWYg.`</p> <ul style="list-style-type: none"> • Regional specialization/ zoning • Infrastructural development to support agricultural development • Increased productivity • Value-chain enhancement • Irrigated agriculture promotion to awaken the sleeping plains • Enhanced agricultural support and research services/ intensification of extension services • Promotion of climate smart agriculture • Modernization of agriculture • Promotion of agricultural institutional linkages
<p>DchYbqU.`</p> <ul style="list-style-type: none"> • Food security • Economic development <p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Low agricultural and livestock productivity attributed to low adoption of technology and limited access to inputs • Inadequate extension services. • High incidences of crop and livestock pests and diseases. • Low value addition • Land fragmentation into uneconomical sizes. • Weak and inappropriate land use policies • Erratic rainfall/frequent droughts and shortage of water to 	<p>(a) Crop Agriculture</p> <p>GfUM[Yg.`</p> <ul style="list-style-type: none"> • Promotion of intensive commercialized crop farming particularly of grains (such as maize and other legumes), vegetables and cash crops (such as coffee, sorghum and millet) within the highland areas Mbooni and Kilome sub-counties). • Promotion of intensive horticulture (of fruits such as mango and oranges) within the middle zone (Makueni and Kaiti sub-counties). • Enhancement of cotton and sisal farming in the middle zone, supported by the introduction of sericulture (Makueni and Kaiti sub-counties). • Control of soil erosion to minimize soil loss county-wide. • Control sub-division of land within the highly productive crop agricultural zone (Mbooni and Kilome sub-counties). • Construction of dams for irrigation at strategic areas along the river belts (along River Athi, Muooni, Kambu, Kiboko, Kaiti, Thwake and Mtito Andei). • Establish fruit collection and market centers at Itangini, Kalamba, Tawa, Mbuvo, Emali, Kibwezi. • Construction of a large-scale value-addition industry for grains, vegetables and fruits in Kibwezi. • Operationalization of dead/ inactive industries (the tannery in Wote, the grain incubation centre in Mukuyuni and the cotton ginnery in Wote). • Establishment of an agricultural showground in Makindu. • Provision of regular, reliable and relevant extension services to crop farmers County-wide. • Provision of farm inputs (such as fertilizer, pesticides, certified seeds and herbicides) at subsidized prices. • Promotion of the planting of drought-resistant crop varieties, particularly in the lowlands (Kibwezi West and East sub-counties). • Promotion of the use of ICT for climate information and extension services. • Expand the capacity of the existing crop processing plants such as the Kalamba Mango Processing Industry. • Promote the adoption and use of modern farming technologies.

<p>sustain agricultural development.</p>	<ul style="list-style-type: none"> • Promote the use of kitchen gardens and small-scale irrigation at households using harvested water through farm ponds and water storage tanks. • Promotion of the mechanization of agriculture. • Enhance access to affordable credit facilities. • Promote farmers' service clinics to support the supply of inputs and provision of expert services. • Strengthen the farmer cooperatives through training and incentives. • Establish inspectorate unit to ensure quality of inputs, imports/exports. • Promotion of agricultural research and training. • Promote agricultural institutional linkages within the County.
<p>(b) Livestock Agriculture</p>	
	<p>Ghũũĩ JYg.</p> <ul style="list-style-type: none"> • Promotion of dairy agriculture, as well as sheep within the highland areas (Mbooni and Kilome sub-counties). • Promotion of large-scale livestock ranching within the lowlands (Kibwezi west and East Sub counties). • Promotion of consolidation of small-scale farms into large-scale ranches within the lowlands (Kibwezi west and East Sub counties). • Promotion of commercial pasture development within the middle zones and lowlands (Makueni, Kaiti, Kibwezi west and East Sub counties). • Control of livestock numbers to avoid over-grazing. • Construction of water infrastructure such as water pans within the lowlands (Kibwezi west and East Sub counties). • Establishment of one livestock yard in every lowland ward centre (Mtito Andei, Kambu, Masongaleni, Komboyoo, Maikuu, Kalulini and Kibwezi). • Construction of five modern abattoir and hides and skin collection centers (one at Kikima, Mbuvo, Ulilinzi, Itangini, Komboyoo). • Construction of one large-scale tannery and a meat processing plant at Kibwezi town. • Establishment of nine milk collection centers (in Nunguni, Mbumbuni, Kathonzweni, Kikima, Kola, Kilala, Kibwezi, Kasikeu and Masongaleni). • Establishment of one milk cooling plant in Kikima. • Promotion of land consolidation in the lowlands (Kibwezi west and East Sub counties). • Promotion of the use of ICT for climate information and extension services. • Promotion of the rearing of drought-resistant livestock breeds, particularly in the lowlands (Kibwezi west and East Sub counties). • Provision of regular, reliable and relevant extension services to livestock farmers County-wide. • Provision of farm inputs (such as pesticides and herbicides) at subsidized prices. • Establishment of a veterinary laboratory in Wote.

	<ul style="list-style-type: none"> • Establish a livestock disease surveillance system. • Strengthen collaboration between agencies dealing with livestock and zoonotic diseases as a way of enhancing livestock production. • Enhance access to affordable credit facilities • Promote farmers' service clinics to support the supply of inputs and provision of expert services. • Rehabilitation of denuded areas and ranches. • Support range rehabilitation management and pasture development. • Operationalization of dead/ inactive industries. • Establishment of an agricultural showground in Makindu. • Strengthen the farmer cooperatives through training and incentives. • Establish inspectorate unit to ensure quality of inputs, imports/exports. • Introduce a variety of livestock farming courses/disciplines at the Agricultural Training Centre (ATC) at Kwa Kathoka. • Promote agricultural institutional linkages within the County.
	<p><i>(c) Apiculture</i></p>
	<ul style="list-style-type: none"> • Establishment of commercial bee farms in the lowlands (Kibwezi west and East Sub counties). • Establishment of one large-scale honey processing factory in Kibwezi town. • Promotion of the collection, packaging and marketing of honey through cooperatives. • Provision of regular, reliable and relevant extension services to bee farmers. • Promotion of the use of ICT for all bee farmers. • Promote appropriate honey production technology and increase hive products to enhance honey production in the County. • Establishment of an agricultural showground in Makindu. • Strengthen the honey farmer cooperatives through training and incentives. • Establish inspectorate unit to ensure quality of inputs, imports/exports.
	<p><i>(d) Fisheries</i></p>
	<ul style="list-style-type: none"> • Support the establishment of small-scale fish ponds in farms along the irrigation belt. • Provision of regular, reliable and relevant extension services to fish farmers. • Promotion of the harvesting, collection, preservation and marketing of fish through cooperatives. • Establishment of an agricultural showground in Makindu. • Strengthen the farmer cooperatives through training and incentives. • Establish inspectorate unit to ensure quality of inputs, imports/exports.

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The spatial structure of the proposed strategies for economic development is illustrated in map 31.

<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #4a7ebb; color: white; padding: 5px; margin-bottom: 5px;">Tourism</div> <div style="background-color: #4db6ac; color: white; padding: 5px; margin-bottom: 5px;">Trade and commerce</div> <div style="background-color: #4db6ac; color: white; padding: 5px; margin-bottom: 5px;">Industry</div> <div style="background-color: #4db6ac; color: white; padding: 5px;">Mining</div> </div> <p>DchYbhU.'</p> <ul style="list-style-type: none"> • Large-scale job creation • Income generation • Poverty reduction <p>7\ U`Yb[Yg.'</p> <ul style="list-style-type: none"> • Inadequate infrastructural facilities. • High cost of credit and limited access to credit. • The rural based cottage industries face low adoption of technology for value addition • Price fluctuations. • Poor transport infrastructure development. • Poor linkages to markets for products. 	<p>Dc`JWYg.'</p> <ul style="list-style-type: none"> • Economic zone specialization • Diversification of economic activities • Infrastructural development to support economic development <p>(a) Tourism</p> <div style="text-align: center;"> </div> <p>Tourism is earmarked as one of the six key growth sectors of the economic pillar of Vision 2030 due to the important role the sector plays in economic development. Makueni County is positioned within the southern tourist circuit in the country, efforts will be made to promote tourism in Tsavo West National Park, Historical sites; AIC historical site in Kalamba, Iviani in Mtito Andei, Sikh Temple in Makindu, Kibwezi graves, Cultural centres; Mukamba cultural centre in Kibwezi, Recreational centres; Makongo, Game reserves; Chyullu hills in Kibwezi, Caves; Kisula Handcraft centres; Kiboko, Emali, Mbui Nzau, Sanctuaries in Makindu, Industrial; Kalamba ; Forests; Nzau, Adventure tourism; Springs; Masamukye springs Nguu Masumba, Kiboko springs in Kiboko.</p> <p>GfUM[JYg.'</p> <p>(a). Wildlife tourism:</p> <ul style="list-style-type: none"> • Fence the borders of the wildlife parks and reserves to minimize human-wildlife conflict. • Map the wildlife migratory routes and zone them for conservation. • Create a conservation area around Chyulu hills. • Expand Ngai Ndethya, Kisumbu national conservancy and Kibwezi forest reserve
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	<ul style="list-style-type: none"> • Promote three County wildlife tourism gateways (at Mtito Andei, Konza and Kiaoni/ Kalulini). • Branding of Makindu and Mtito Andei as the tourism hubs of the County. • Promote investment in tourism facilities by the private sector. • Establish a crocodile sanctuary, a hippo sanctuary and two snake parks at Kiboko. • Identify wildlife tourism roads and improve them (such as the Mtito Andei-Manzui road). • Improve and revive Makindu airstrip. • Strict enforcement of the existing regulation safeguarding protected areas; encroachment, poaching, discourage settlement • Create land banks for development of tourism facilities at identified gateway towns. • Promote domestic tourism by providing incentives and subsidies • Invest in ICT infrastructure and capitalize on online marketing to publicize wildlife tourism sites <p><u>(b). Cultural Tourism:</u></p> <ul style="list-style-type: none"> • Establish one museum of Makueni with a cultural centre on the Akamba history in Makindu town. • Preservation of cultural heritage sites in Makueni. • Establishment of two large-scale handicraft centres in Makindu and Mtito Andei towns. • Identify cultural tourism roads and improve them. • Promote domestic cultural tourism by providing incentives and subsidies (such as to schools for educational tours). • Invest in ICT infrastructure and capitalize on online marketing to publicize cultural tourism sites. • Promote indigenous culture through cultural days and support to cultural groups. • Promote establishment of show ground in Makindu. • Promotion of rural tourism through home stays. <p><u>(c). Adventure Tourism:</u></p> <ul style="list-style-type: none"> • Introduce cable cars in Makongo and Nzau areas. • Promotion of ecotourism. • Identify adventure tourism roads and improve them. • Promote domestic adventure tourism by providing incentives and subsidies. • Invest in ICT infrastructure and capitalize on online marketing to publicize adventure tourism sites. • County government to partner with private farms to offer more innovative products in existing tourism sites.
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(d). Other Tourism Forms:

- Promote the following forms of tourism:
 - Medical tourism- such as the Makueni Mother and Child Hospital in Wote.
 - Industrial tourism- such as to the Kalamba Mango Processing Plant.
 - Railway road tourism- such as tourism to the Standard Gauge Railway stations and to railway history museum at Makindu (on the lunatic express).
 - Agri tourism
 - Conference tourism
 - Religious tourism
 - Sports tourism

(b) Industry



Kenya aims to be an industrialized middle-income level country by 2030. Industrialization is a key driver in achievement of the goals and the objectives of Vision 2030. The County is characterized by low industrialization with focus on cottage industries and agro-processing. To take advantage of the geographic and locational advantage of the County around the Mombasa – Nairobi transnational highway and the SGR traversing the County, strategic investments will be promoted to spur industrialization in the County.

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- Construction of agro-processing industries:
 - One large-scale value-addition industry for grains, vegetables and fruits in Kibwezi.

	<ul style="list-style-type: none"> ○ Five modern abattoir and hides and skin collection centers (one at Kikima, Mbuvo, Ulilnzi, Itangini, Komboyoo). ○ One large-scale tannery and a meat processing plant at Kibwezi town. ○ One milk cooling plant in Kikima. ○ One large-scale honey processing factory in Kibwezi town. ● Expansion of the capacity of the existing crop processing plants such as the Kalamba Mango Processing Industry. ● Identification of inland container ports zone along the major transit corridors - between Emali and Sultan Hamud. ● Establishment of jua-kali industry in Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni urban centers. ● Establishment of one ceramics industry (using kaolin) at Nunguni. ● Branding Kibwezi, Sultan Hamud, Kalamba, Kikima, Mbumbuni, Kathonzweni and Itangini as agro-industrial hubs/zones. ● Investment in physical infrastructure to connect the industrial zones to raw material production sites. ● Development of incentives and subsidies to attract private sector investment in industry. ● Creation of land banks for development of industrial facilities at identified agro-industrial towns. ● Develop and implement policy on commerce and industrialization development. ● Map out and operationalize industrial zones. ● Agglomeration of industrial activities within identified industrial zones. ● Develop human capital through Technical and Vocational Education Training (TVET) within identified industrial zones. ● Develop incubation hubs for entrepreneurial development within identified industrial zones. ● Invest in intensive development of support infrastructures such as warehouses, roads, parking lots ● Formulate and implement Makueni County specific policy on PPP in urbanization and industrialization.
	<p align="center">(c) Trade and Commerce</p>
	<p>Gifunji Yg.</p> <ul style="list-style-type: none"> ● Construction of two large-scale modern fruit markets at Emali and Itangini. ● Construction of one large-scale grain fruit market at Kibwezi.

- Construction of two handicraft centers in Makindu and Mtito Andei towns.
- Construction of juakali sheds (for sale of juakali products) in all Wote, Kibwezi, Emali and Konza/Malili, Mtito Andei, Kambu, Makindu, Sultan, Kasikeu, Kikima, Tawa and Kathonzweni towns.
- Promotion of the formation of trade cooperatives to organize marketing, savings and loans.
- Provision by the County of training on entrepreneurship, savings and scaling-up of businesses.
- Enhancement of the business environment.
- Development of incentives and subsidies to attract private sector investment in commerce.
- Promote establishment of showground.

(d) Mining

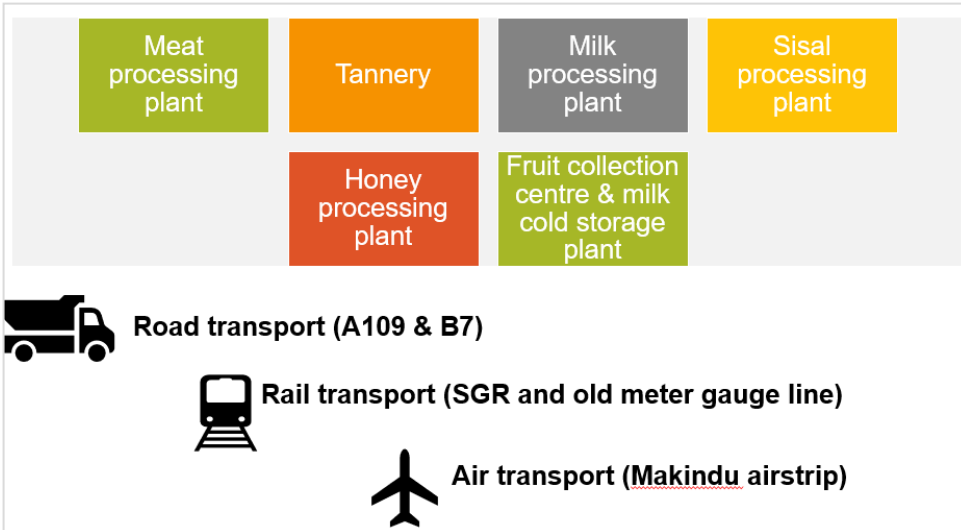


- Commissioning of a detailed geological survey to determine the extent and commercial viability of mineral resources.
- Establishment of one ceramics industry (using kaolin) at Nunguni.
- Partner with existing and new private mining companies for large scale commercial extraction and processing of minerals.
- Partner with private gemstone dealers to establish mineral value addition industries
- Capacity build the existing County Sand Authority to regulate sand harvesting in the County.
- Ensure all mineral exploration and extraction is regulated.
- Assess opportunities presented by geographical location of the County to neighbouring mineral producing counties and establish areas of partnership.
- Promote small scale miners in the County.

Agricultural and Economic Sector Flagship Project: Kibwezi Agro-Processing Zone

Construction of a large-scale tannery and a meat processing plant at Kibwezi, complete with a large-scale grain processing plant and fruit collection center with cold storage facilities. In addition, it is proposed that a honey processing factory and a sisal processing plant also be constructed at Kibwezi. These facilities will have access to a myriad of transportation options: rail (through the SGR), road (through the A109 and B3 highways) and air (through the adjacent Makindu airstrip).

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The spatial structure of the proposed strategies for settlement development is illustrated in map 29.

(a) Urban Development and Housing	
<p>DchYbhjU.'</p> <ul style="list-style-type: none"> Market for hinterland produce Hubs for service provision Centres for innovation Hubs for economic development <p>7\ U`Yb[Yg.'</p> <ul style="list-style-type: none"> Rural-urban migration. Inadequate guiding policies and legal framework guiding urbanization. Inadequate urban infrastructural facilities. Weak enforcement of development control 	<p>Dc`jWYg.'</p> <ul style="list-style-type: none"> Hierarchical development of centres Allocation of unique functions/ brands based on urban centre competitive advantages High quality of urban life Urban prosperity <p>GfUM[]Yg.'</p> <ul style="list-style-type: none"> Classification of urban areas into: <ul style="list-style-type: none"> Tier 1 Urban Areas (City). Tier 2 Urban Areas (Municipalities). Tier 3 Urban Areas (Towns). Tier 4 Urban Areas (Urban Centers). Preparation and approval of detailed urban plans for: <ul style="list-style-type: none"> The towns along the A109 and B7 highways (Mtito Andei, Maikuu, Kibwezi, Makindu, Kiboko, Simba, Emali, Sultan Hamud, Salama, Konza, Kaulini and Kiaoni). The integration of the proposed Konza Technopolis City to the surrounding hinterland within Makueni County.

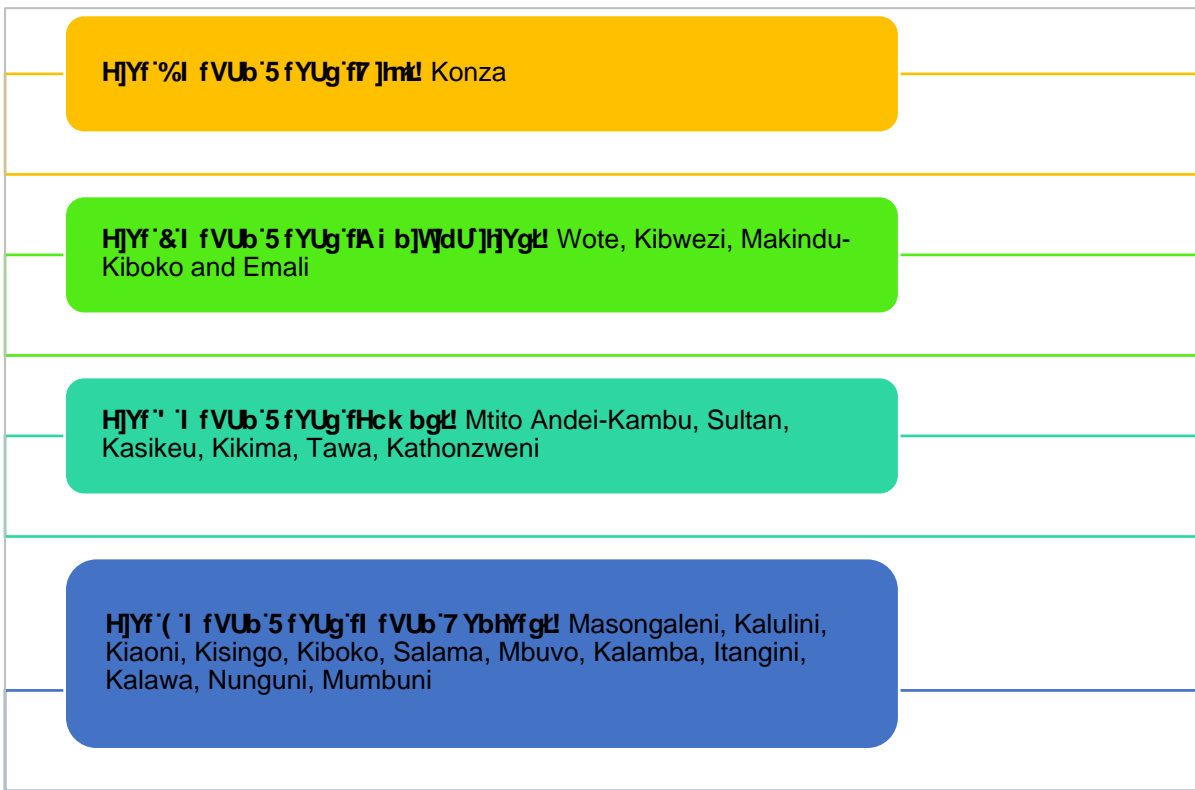
<p>plan and policies in place</p>	<ul style="list-style-type: none"> ○ The municipalities of Wote, Kibwezi, Makindu-Kiboko and Emali. ○ The towns of Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni. ○ The urban centers of Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni. ● Branding the following urban area with the following unique functions: <ul style="list-style-type: none"> ○ Administrative towns (Wote, Kathonzweni, Kikima, Kasikeu, Nunguni, Makindu, Masongaleni) ○ Gateways (Mtito Andei, Malili, Tawa, Kiaoni) ○ Agro-industrial towns (Kibwezi, Sultan Hamud, Kalamba, Kikima, Mbumbuni, Kathonzweni and Itangini) ○ Commercial towns (All, with Emali being branded as the main commerce hub for the County) ○ Tourism towns (Kiboko, Kibwezi) ○ Transport/ cargo-logistics towns (Emali, Kibwezi and Mtito Andei) ○ Technopolis (Konza) ○ University towns (Kambu, Konza) ○ Model green towns: (Kalulini/ Kisayani and Kavuko for solar and Kalawa/ Katangini for hydropower generation towns). ● Land banking in all the Tier 1 to 4 urban areas. ● Upgrade services in the various urban areas based on the hierarchical category, as outlined in the Urban Areas and Cities Act (UACA). ● Protection of public land county-wide. ● Enhanced urban aesthetics, safety and security county-wide. ● Development of functional framework for enforcement, monitoring and implementation of urban plans (system development control). ● Development and enhancement of requisite housing and infrastructure to promote urbanization. ● Promotion of urban safety through: <ul style="list-style-type: none"> ○ Construction of disaster management stations in all Tier 1 and 2 urban areas (Konza, Wote, Kibwezi, Makindu-Kiboko and Emali), as well as in all industrial zones (Sultan Hamud, Kalamba, Kikima, Mbumbuni, Kathonzweni and Itangini). ○ Upgrading/ Construction of fully-fledged police stations in all Tier 1, 2 and 3 urban areas (Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni). ○ Development of fully-fledged police posts in all Tier 4 urban areas (Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni).
(b) Rural Development	
DchYbHjU.	Dc`jWYg.

<ul style="list-style-type: none"> • Food security <p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Land fragmentation. • Sparsely population distribution in the lowlands. • Inadequacy of County land laws and policies. • Incidences of landlessness and squatters (living in poorly planned settlement schemes). 	<ul style="list-style-type: none"> • Rural revitalization • Protection of agricultural land • Improved service delivery <p>GfUu[]Yg.`</p> <ul style="list-style-type: none"> • Promotion of the clustering of rural settlements to reduce sprawl into rich agricultural land. • Enhance rural road network by upgrading existing roads and opening new areas. • Development and implementation of an agricultural land use policy, plan and legislation based on the updated agro-ecological zones. • Developing a comprehensive Geographical Information System (GIS) based database on land information. • Strengthening security of tenure in unadjudicated/ untitled areas. • Control land sub-division. • Initiating land use reform program.
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Settlement Sector Flagship Project: Classification of Urban Areas

The classification of urban areas proposed in this CSP can lead to a network of properly organized and serviced settlements. It is proposed that urban areas be classified in the following 4 categories:

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Using the Urban Areas and Cities Act (UACA), service provision is proposed to be aligned to the hierarchy of the urban areas as per the structure above. The urban edges for the various urban areas have been illustrated on map 28.

) "&)" HfUbgdcfHUjcb`GYWcf`8 Yj Ycda Ybh`

Transportation is an enabler of socio-economic development in any country. The aim of proposals in this sector is to revitalize, re-organize and take advantage of existing transportation infrastructure to catalyze optimal use of County land, for economic prosperity and a high quality of life for every household. The spatial structure of the proposed strategies for transportation development is illustrated in map 28.

(a) Road Transport	
<p>DchYbhjU.`</p> <ul style="list-style-type: none"> • Corridors of development • Transportation of market produce • Economic development • Accessibility for service delivery <p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Road are majorly earthen and impassable during the rainy season. 	<p>Dc`jWYg.`</p> <ul style="list-style-type: none"> • Enhanced road transport connectivity • Intermodal connectivity • Transport safety • Equitable access to transportation services • Reduced traffic interference by settlements along major transportation corridors/ Reduction of stop overs through regularized settlement interval. <p>GhfUHY[]Yg.`</p> <ul style="list-style-type: none"> • Completion of the upgrading to bitumen standards of the Kibwezi-Athi River Bridge road (A9/ B64) from gravel. • Periodic maintenance of the Wote-Makindu road (B60). • Routine maintenance of the Wote-River Athi road (B60). • Performance based road maintenance contracting (PBC) for the Katumani-Ukia-Wote road (B60) and Mombasa Road (A8). • Tarmacking of missing links (Emali-Kalamba-Ukia road, Sultan Hamud-Kasikeu-Nunguni road, Itangini-Miu road, Salama-Nunguni-Kola road, Salama-Kiu road, Wote-Katangini-Kalawa road, Kibwezi-Masongaleni-Ulilinzi-Athi Salama road). • Levelling and gravelling of all centre connectors within the rural areas. • Establishment of bridges and drifts- (guided by a detailed feasibility study) along rivers Athi, Muooni, Kambu, Kiboko, Kaiti, Thwake and Mtito Andei. • Levelling and murraming of the Mtito Andei-Manzui road (tourism road). • Upgrading of the road interchanges along A109, B7 and at junctions within the Tier 1, 2 and 3 urban areas (Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni). • Establishment of transport disaster management centers in all Tier 1 and 2 urban areas (Konza, Wote, Kibwezi, Makindu-Kiboko and Emali). • Commissioning of detailed feasibility studies on road and NMT path designs for connecting the SGR stations to bus/ vehicular and air termini at Emali, Kibwezi, Mtito Andei and Makindu. • Construction of logistics termini at Emali, Kibwezi and Mtito Andei. • Development of road transport safety programs to sensitize the community county-wide. • Establishment of termini for NMT in all urban areas (such as boda boda sheds).

(b) Rail Transport	
<p>DchYbhjU.</p> <ul style="list-style-type: none"> • Connectivity for exports • Tourism potential <p>7\ U`Yb[Yg.</p> <ul style="list-style-type: none"> • Under-utilization of rail transport. 	<p>Dc`jWYg.</p> <ul style="list-style-type: none"> • Railway transport promotion • Intermodal connectivity <p>GfUH[Yg.</p> <ul style="list-style-type: none"> • Promotion of rail tourism (history of the lunatic express, old railway sites and the SGR line and new railway stations). • Promotion of inter-modal connectivity through a direct linkage to road transportation, and the Makindu airstrip.
(c) Air Transport	
<p>DchYbhjU.</p> <ul style="list-style-type: none"> • Connectivity for exports • Tourism potential <p>7\ U`Yb[Yg.</p> <ul style="list-style-type: none"> • Under-utilization of air transport in County. • Poor condition of the Makindu airstrip 	<p>Dc`jWYg.</p> <ul style="list-style-type: none"> • Air transport promotion. <p>GfUH[Yg.</p> <ul style="list-style-type: none"> • Revival of the Makindu airstrip to acceptable standards. • Construction of modern terminus buildings at the Makindu airstrip. • Promotion of the Makindu airstrip for tourism (such as for visitors to the Tsavo).
(d) Non-Motorized Transport	
<p>DchYbhjU.</p> <ul style="list-style-type: none"> • Improved rural access/ connectivity. • Reduced carbon emissions <p>7\ U`Yb[Yg.</p> <ul style="list-style-type: none"> • Inadequate NMT infrastructure. • High level of boda boda accidents 	<p>Dc`jWYg.</p> <ul style="list-style-type: none"> • Equity in access to transportation • NMT safety and security <p>GfUH[Yg.</p> <ul style="list-style-type: none"> • Promotion of the use of NMT modes. • Designation of routes for NMT infrastructure (such as cycling lanes on all major roads all Tier 1, 2 and 3 urban areas). • Establishment of termini for NMT in all urban areas (such as boda boda sheds). • Promotion of the use of NMT safety attire such as reflective jackets and helmets Countywide.


Transportation Sector Flagship Project: Key Missing Links

There are 7 roads that if upgraded would be game-changers in Makueni County, and thus should be prioritized:


- Tarmacking of Emali-Kalamba-Ukia road.
- Tarmacking of Itangini-Miu road.
- Tarmacking of Salama-Nunguni-Kola road.
- Tarmacking of Salama-Kiu road.
- Tarmacking of Wote-Katangini-Kalawa road.
- Tarmacking of Kibwezi-Masongaleni-Ulilinzi-Athi Salama road
- Levelling and murraming of the Mito Andei-Manzui road

) "8" * -bZUgIfi Wi fYUbX'GYfj JWg'GYWcf'8 Yj Y cda YbhGfUH[m

Infrastructure is a key driver of socio-economic development in any country. The SDGs, Kenya Vision 2030 and Makueni Vision 2025 identify infrastructure as a foundational driver in the economic development. The focus is mainly on generation and distribution of energy, access to clean and safe water and sport development. Improving on the infrastructure helps reduce poverty and increased access to public services.

(a) Water and Sanitation	
<p>DchYbhjU.</p> <ul style="list-style-type: none"> • Enabling factor for industry and commerce • Support for the agricultural sector • Improved quality of life for households <p>7\ U`Yb[Yg.</p> <ul style="list-style-type: none"> • Water scarcity. • Long average distance to the nearest water point (8 Kms). • Heavy reliance on unimproved water sources (64.3%). • Destruction of the water catchment areas. 	<div style="text-align: center;">  </div> <p>Dc`JWYg.</p> <ul style="list-style-type: none"> • Improved access to water • Functional waste management and sanitation systems <p>GhfUH[JYg'fK UHfL.</p> <ul style="list-style-type: none"> • Development of a water sector master plan for the entire County. • Construct mega and medium sized dams along the major rivers for irrigation and flood control. • Finalize the construction of Thwake Mega dam in collaboration with the national government. • Completion of the construction of proposed dams at Kwa-ndundu, Mbumbuni and Mutalani. • Expand existing water projects (like Nolturesh to Makindu and Wote). • Increase water machination capacities of water projects; Nolturesh, KIMAWASCO, WOWASCO. • Reduce the average distance to water points (from 8 Km to 3 Km) • Promotion of water harvesting (increase volume harvested to over 73 million m³ per year). • Promotion of water re-use and recycling, particularly in the urban areas. • Increase technical capacity of water department and increase budgetary allocation on water distribution. • Protect all water towers through developing water resource governance and management regulations and enforcement policy. <p>GhfUH[JYg'fGUb]HU]cbL.</p> <ul style="list-style-type: none"> • Development of a sanitation sector master plan for the entire County. • Effective and efficient waste management systems in urban centres that adoption of modern technologies and strategies.

	<ul style="list-style-type: none"> Develop and promote PPP strategy in waste management and recycling.
(b) Energy	
<p>DchYbhU.</p> <ul style="list-style-type: none"> Large potential for tapping on the green energy generation Economic development Safety and security <p>7\ U`Yb[Yg.</p> <ul style="list-style-type: none"> Poor distribution and connectivity to electricity (5.7% of households using electricity as the main lighting source). Lack of a policy on green energy generation and distribution. 	<p>Dc`jYg.</p> <ul style="list-style-type: none"> Promote generation, supply and use of green energy. <p>GfUH[Yg.</p> <ul style="list-style-type: none"> Development of an energy sector master plan for the entire County. Develop County specific energy generation and distribution policy. Finalize the construction of Thwake Mega dam in collaboration with the national government (will generate 17.6 megawatts of electricity). Promote use of clean forms of energy especially solar, wind and bio-fuel power. Promote public/ private sector partnerships with private Independent Power Producers for clean energy generation (to establish solar and wind farms in Kibwezi East Sub County, with surplus solar energy to national grid). Development of biogas in areas where dairy industry is practiced and in public institutions. (such as Kavuko in Kilome).
(c) ICT	
<p>DchYbhU.</p> <ul style="list-style-type: none"> Potential to drive growth in County economic sectors. Information dissemination. <p>7\ U`Yb[Yg.</p> <ul style="list-style-type: none"> Low penetration of ICT in the County remains low. Inadequate infrastructural facilities to support ICT development. 	<p>Dc`jYg.</p> <ul style="list-style-type: none"> Increased penetration of ICT. <p>GfUH[Yg.</p> <ul style="list-style-type: none"> Development of an ICT sector master plan for the entire County. Construction an ICT hub in Wote for promotion of innovation. Promotion of the use of ICT for agribusiness, commerce and industry, revenue generation and procurement processes. Automation of County government services (such as procurement, licensing, development control and digitization of land records). Promotion of innovation in ICT.
(d) Education	
<p>DchYbhU.</p> <ul style="list-style-type: none"> Improved employability/ ability for the population to access income generation activities. 	<p>Dc`jYg.</p> <ul style="list-style-type: none"> Enhanced access to education. Improved literacy levels. <p>GfUH[Yg.</p> <ul style="list-style-type: none"> Establishment of twenty-three adult literacy centres (in (Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-Kambu, Sultan,

<p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Low adult literacy level` • Low transition rate from primary to secondary school` 	<p>Kasikeu, Kikima, Tawa, Kathonzweni, Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni and Mumbuni).</p> <ul style="list-style-type: none"> • Establish fully equipped technical and vocational institutions which will spur growth of cottage industries. • Development and upgrading of education and training infrastructure. • Establishment of a public boarding school for visually, hearing and speech impaired children.
<p>(e) Health</p>	
<p>DchYbhU.`</p> <ul style="list-style-type: none"> • Improved productivity from a healthy and growing working force. • Improved quality of life for residents. <p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • High infant mortality rates` • Long distances to health facilities • Inadequate personnel and equipment in health facilities (such as drugs, ambulances & staff housing)` • Limited facilities for persons with special health needs such as the mentally ill. 	 <p>Dc`JYg.`</p> <ul style="list-style-type: none"> • Improved access to healthcare. • Improved medical training and research. <p>GfUy[JYg.`</p> <ul style="list-style-type: none"> • Establishment of three mental health units (in Mukuyuni, Kaumoni and Makindu). • Setting up of a medical training university in Kibwezi. • Construction of a medical trauma hospital at Enzai (Kilome sub-county). • Upgrading of dispensaries and health centres. • Invest in equipping all the health facilities.`
<p>(f) Community Facilities</p>	
<p>DchYbhU.`</p> <ul style="list-style-type: none"> • Equitable society • Secure environment • Potential for relaxation and promotion of innovation <p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Limited facilities for marginalized persons (such as 	<p>Dc`JYg.`</p> <ul style="list-style-type: none"> • Improved Social infrastructure` <p>GfUy[JYg.`</p> <ul style="list-style-type: none"> • Establishment of six gender-based violence recovery centres (Nunguni, Kathonzweni, Malili, Tawa, Makindu and Kambu) in addition to the newly opened one at Wote. • Establishment of one public home for orphans and rehabilitation of street children in Wote. • Establishment of six elderly care centres Ulilinzi, Nguu, Kitise, Tawa, Mukaa and Komboyoo). • Construction of two stadiums (proposed stadium at Ngakaa in Makindu and a mini stadium in Makindu).

<p>women fleeing domestic violence, the aged, orphans and street children).’</p> <ul style="list-style-type: none"> • Inadequate public recreational facilities • Inadequate police posts’ 	<ul style="list-style-type: none"> • Establishment of twenty-three talent and innovation centres at (Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni, Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni and Mumbuni). • Upgrading/ Construction of eleven fully-fledged police stations (in Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni). • Development of twelve fully-fledged police posts (in Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni).
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Infrastructural Sector Flagship Project: Key Missing Links



The key flagship for the infrastructural sector should be the finalization of the construction of the Thwake Dam. The large-scale dam will provide:

- Water for irrigation.
- Energy- 17.6 megawatts of electricity.
- Job creation during construction and from operationalization
- Opportunities for educational tourism (such as by schools to view the dam).

5.3 Perspectives on Cross-Cutting Issues

Climate change and disaster risk reduction, gender, age and disability are key challenges, cutting across all sectors. Various strategies and measures have been proposed to mainstream these aspects across sectors.

<p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Difficulty in planning climate-sensitive activities such as agriculture. • Possibilities of unforeseeable climate disasters such as flash floods and prolonged droughts. • Economic losses • Poverty creation 	<p>Dc`]M]Yg.`</p> <ul style="list-style-type: none"> • Promotion of climate change mitigation • Promotion of climate-smart agriculture • Climate-proofing of infrastructure` • Sharing of timely climate information • Reduction of disaster risk <p>GhfUH[]Yg'UbX'A YUgi fYg.`</p> <ul style="list-style-type: none"> • Increase of carbon sinks in the County through by increasing County tree cover to 20% through: <ul style="list-style-type: none"> • Re-forestation and rehabilitation of forests to increase the dedicated forest cover to 10%. • Promotion of agro-forestry in the highlands and middle zones to increase planted forest cover to 10%. • Establishment of drought-resistant woodlots in the middle and lower zones in the County. • Promotion of the use of renewable energy through: <ul style="list-style-type: none"> • Establishment of large-scale solar energy generation farms at areas with high solar intensity such as at Kalulini and Kavuko. • Promotion of bio-fuel production and utilization in the bushlands. • Establishment of wind energy generation and utilization farms at areas with high wind speeds such as at the Kilungu Hills. • Construction of mega and medium sized dams in the lower and middle zones (for irrigation minimizing the impacts of water scarcity and flood control). • Promotion of water harvesting. • Promotion of water re-use and recycling, particularly in the urban areas. • Promotion of the planting of drought-resistant crop varieties, particularly in the lowlands. • Promotion of the rearing of drought-resistant livestock breeds, particularly in the lowlands. • Strengthening of roads through construction of reinforced bridges along spots of heavy flooding during the rainy season. • Mapping of hotspots of possible climate disasters (such as flood plains). • Training of residents of climate hotspot areas on measures of climate change adaption. • Integration of updated climate information into the already developed Digi-Farm mobile application (providing access to timely and relevant climate information and solutions) to all farmers. • Regular dissemination of anticipated climatic conditions by the County through local radio stations, with proposed adaptation solutions. • Establishment of disaster management centres in all Tier 1 urban areas.
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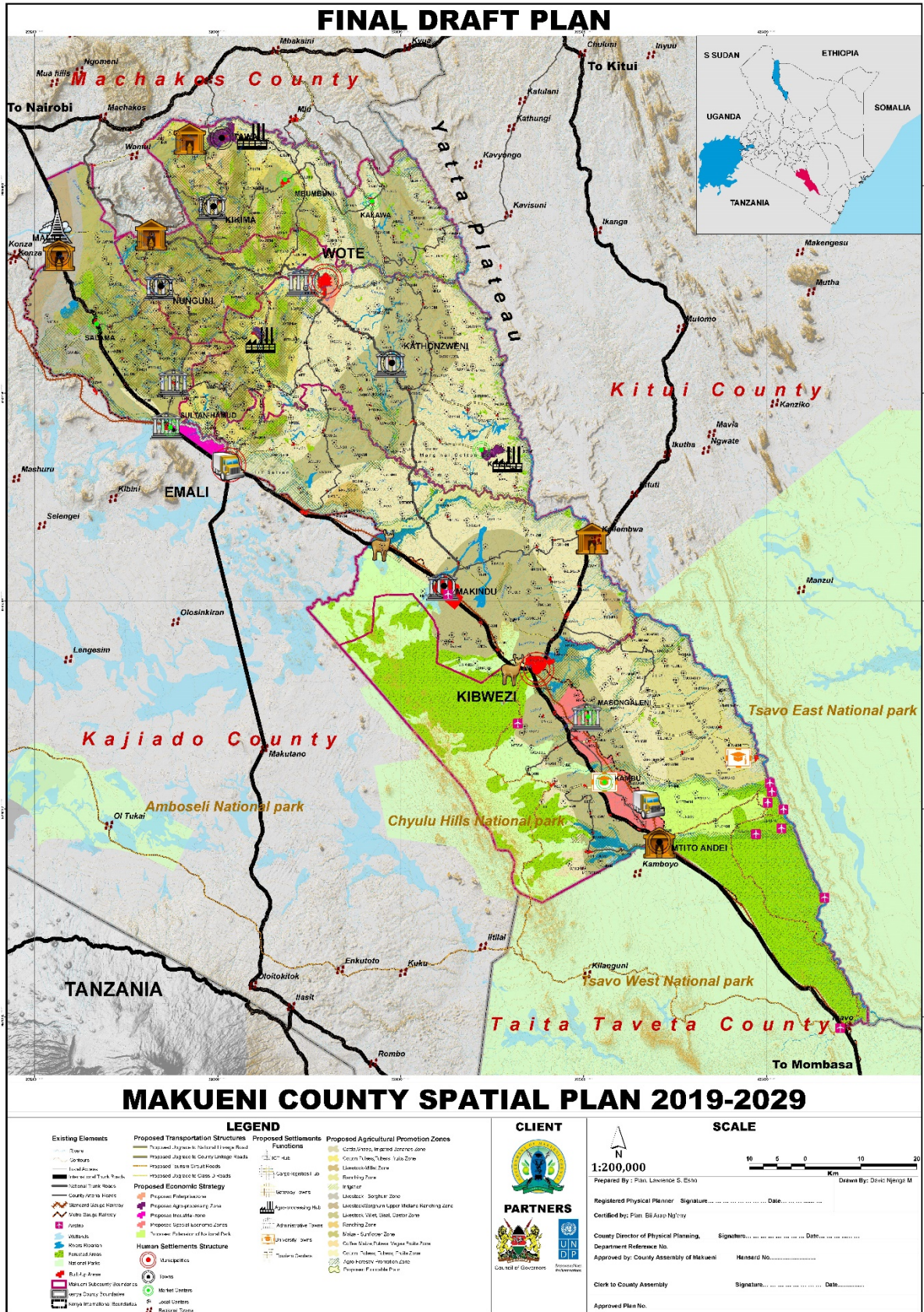
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<p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Gender violence • Inadequate public facilities for persons living with disability, elderly persons orphans and street children. 	<p>Dc`]M`Yg.`</p> <ul style="list-style-type: none"> • Reduced marginalization of vulnerable groups. <p>GfUH[]Yg'UbX'A YUgi fYg.`</p> <ul style="list-style-type: none"> • Establishment of gender-based violence recovery centers in all sub-county headquarters (Nunguni, Kathonzweni, Malili, Tawa, Makindu and Kambu) in addition to the newly opened one at Wote. • Establishment of a mental health unit in Mukuyuni, Kaumoni and Makindu. • Establishment of elderly care centres at Ulilinzi, Nguu, Kitise, Tawa, Mukaa and Komboyoo. • Establishment of a public home for orphans and rehabilitation of street children in Emali. • Construction of a public boarding school for visually, hearing and speech impaired children in Wote. • Mandatory participation of representatives of women, the elderly and PWDs in all county decision-making processes.
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<p>7\ U`Yb[Yg.`</p> <ul style="list-style-type: none"> • Bureaucracies in accessing public services. • Poor urban governance 	<p>Dc`]M`Yg.`</p> <ul style="list-style-type: none"> • Accessible governance services • Strengthened urban governance <p>GfUH[]Yg'UbX'a YUgi fYg.`</p> <ul style="list-style-type: none"> • Setting up of relevant urban management boards for all Tier 1, 2, and 3 urban centres. • Automation of County government services (such as procurement, licensing, development control, revenue collection and digitization of land records). • Mandatory participation of representatives of women, the elderly and PWDs in all county decision-making processes.
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Part Three: The Realization

6.1 Overview

The implementation of the County Spatial Plan will be a key step towards optimal use of every acre of land in the County, making the county competitive both nationally and regionally and improving the livelihoods of every household as envisaged in the County's Vision 2025. It will provide a coordinating framework for the sectors to operate. The purpose of the implementation matrix is to provide a guide on the implementation of the County Spatial Plan to ensure the achievement of its objectives. It identifies activities associated with the implementation of the plan and ties them with responsible actors, resources and timeframes adequate for their execution.

6.2 Institutional Framework for Implementation of the CSP

The proposals in the CSP will be implemented through various approaches which include:

- Preparation of urban and action area spatial plans to integrate and conform to the proposals of the County Spatial Plan.
- Assimilation of the CSP policies to the other plans, projects and programs.
- Formulation of policies, regulations and standards to guide development control.
- Participation of all stakeholders.

The scope of projects proposed under the Makueni CSP fall within the mandate of a wide range of national government agencies and county government departments. Additionally, others have an impact on the private sector or on ongoing initiatives by non-governmental/donor institutions. In this regard, a multi-layered institutional framework has been proposed for implementation, incorporating all levels of stakeholder institutions, with the aim of co-production.

It is proposed that implementation be done through a two-tier system, with one tier comprising of the county-level stakeholders, and the next tier incorporating national-level agencies with operations within Makueni County (Figure 18 below). The two tiers will have feedback mechanisms based on a system of reporting to gauge the CSP implementation progress and challenges experienced in achieving various proposed projects within the timelines stipulated in the Plan.

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- The County Secretary
- The County Executive Committee Member for Lands, Mining, Housing, Physical Planning and Urban Development
- All county assembly lands committee members
- The Heads of all County Departments (Chief Officers)
- Two representatives from the private sector members in the County
- Two representatives from non-governmental organizations operating in the County
- Special groups: One representative of persons with disability, one representative of a county-wide women's group and one representative of a county-wide youth group.

It is proposed that this team meet three times in a year and should prepare one implementation status report per year, for presentation to the Inter-Agency CSP Implementation Team.



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It is proposed that this team should be made up of:

- The Governor
- The County Secretary
- All County Executive Committee Members
- All other members of the CSP Multi-sectoral Implementation Team
- One representative from all national agencies operating within Makueni County (such as NEMA, KENHA, KURA, KERRA, KFS, KWS, KoTDA).
- One representative from all county-level infrastructural service providers (such as WOWASCO, KIMAWASCO and Kenya Power).

It is proposed that this team meets bi-annually and should prepare one implementation status report per year.

During the fourth year from the approval of the Makueni CSP (the year 2023), it is proposed that a County CSP Appraisal Workshop be held. The aim of this forum will be to engage a wide scope of stakeholders, as well as the general public to assess the level of achievements of the CSP, as well as identify any challenges in implementation of the plan during the first 4 years. The output of this workshop will be a resolution to either retain the CSP as is, or to undertake minor or major amendments of the Plan.

6.3 Implementation Matrix

HUBS AND SPOKES

7 CB79DH NCB9.	GHF5H9; 9G.	DFC; F5A.	DFC>97HG.	57HCFG.	CI H7CA9.	HA9!: F5A9.		
						G cfH Hfa .	AYXji a ! Hfa .	@b[! Hfa .
HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)	Classification of urban areas	Categorization of Konza as a Tier 1 Urban Areas (City).	<ul style="list-style-type: none"> Preparation and approval of a detailed urban area plan for the integration of the proposed Konza Technopolis City to the surrounding hinterland within Makueni County. 	MCG (Department of Land and Physical Planning) KoTDA (Konza Technopolis Development Authority)	<ul style="list-style-type: none"> Organized spatial development in the areas surrounding Konza City. 			
		Categorization of Wote, Kibwezi, Makindu-Kiboko and Emali as Tier 2 Urban Areas (Municipalities).	<ul style="list-style-type: none"> Preparation and approval of detailed urban plans for the municipalities of Wote, Kibwezi, Makindu-Kiboko and Emali. 	MCG (Department of Land and Physical Planning)	<ul style="list-style-type: none"> Organized spatial development in the Tier 2 Urban Areas (Municipalities). 	<i>*Quick-win</i>		
		Categorization of Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni as Tier 3 Urban Areas (Towns).	<ul style="list-style-type: none"> Preparation and approval of detailed urban plans for the towns of Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni. 	MCG (Department of Land and Physical Planning)	<ul style="list-style-type: none"> Organized spatial development in the Tier 3 Urban Areas (Towns). 			

<p>HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)</p>		<p>Categorization of Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni as Tier 4 Urban Areas (Urban Centres).</p>	<ul style="list-style-type: none"> Preparation and approval of detailed urban plans for the urban centers of Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni. 	<p>MCG (Department of Land and Physical Planning)</p>	<ul style="list-style-type: none"> Organized spatial development in the Tier 4 Urban Areas (Urban Centres). 			
	<p>Allocation of specialized functions to urban areas</p>	<p>Branding of Tier 1, 2, 3 and 4 urban areas</p>	<ul style="list-style-type: none"> Promotion of Konza as a Technopolis in line with proposals under Kenya Vision 2030. 	<p>MCG (Department of Land and Physical Planning)</p>	<ul style="list-style-type: none"> Increased specialized investment in Makueni County's urban areas. Increased awareness within the region of the various county brands. 			
			<ul style="list-style-type: none"> Branding Mtito Andei, Konza, Tawa, Kiaoni and Kola as the gateways into Makueni County. 	<p>KoTDA (Konza Technopolis Development Authority) Kenya</p>				
			<ul style="list-style-type: none"> Branding of Wote, Kathonzweni, Kikima, Kasikeu, Nunguni, Makindu, Masongaleni as administrative hubs. 	<p>Railways National Government Ministries of Water and Energy Kenya</p>				
		<ul style="list-style-type: none"> Branding Kibwezi, Sultan Hamud, Kalamba, Kikima, Mbumbuni, Kathonzweni and 	<p>Tourism Board</p>					

<p>HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)</p>			Itangini as agro-industrial hubs/ zones.					
			<ul style="list-style-type: none"> Branding of Emali as the commercial hub of the County. 			*Quick-win		
			<ul style="list-style-type: none"> Branding of Makindu and Mtito Andei as the tourism hubs of the County. 			*Quick-win		
			<ul style="list-style-type: none"> Branding of Emali, Kibwezi and Mtito Andei as transport/ cargo-logistics hubs of Makueni County. 			*Quick-win		
			<ul style="list-style-type: none"> Branding of Kambu and Konza as university towns. 					
			<ul style="list-style-type: none"> Branding of Kalulini/ Kisayani and Kavuko as model green towns for solar energy generation. 					
<p>HUBS AND SPOKES (This concept refers to</p>			<ul style="list-style-type: none"> Branding of Kalawa/ Katangini as model hydropower generation towns (Thwake-Hydro-power). 					

specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)			<ul style="list-style-type: none"> Promotion of the various specialized town brands on the County website, on social media and on paid publicized advertisements. 			*Quick-win		
	Provision of services to Tier 1, 2, 3 and 4 urban centres based on the hierarchical category, as outlined in the Urban Areas and Cities Act (UACA), as well as in the and rural areas	Protection of public land	<ul style="list-style-type: none"> Detailed documentation of all public land within Makueni County. 	MCG (Department of Land and Physical Planning) NLC (National Land Commission)	<ul style="list-style-type: none"> Available public land for service facilities and investment. 	*Quick-win		
			<ul style="list-style-type: none"> Repossess and revert all illegally acquired land. 					
			<ul style="list-style-type: none"> Land banking in all the Tier 1, 2, 3 and 4 urban centres. 					
		Ensure adequate and clean water and sanitation supply.	<ul style="list-style-type: none"> Commissioning of the preparation of a water and sanitation sector master plan for the entire County. 	MCG (Department of Water WRA NEMA National Government (Ministry of Water) Water Service Providers	<ul style="list-style-type: none"> Improved access to clean water. Improved sanitation in urban areas. 	*Quick-win		
	<ul style="list-style-type: none"> Finalize the construction of Thwake Mega dam in collaboration with the national government. 							
HUBS AND SPOKES								

<p>(This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)</p> <p>HUBS AND SPOKES</p>			<ul style="list-style-type: none"> • Completion of the construction of proposed dams at Kwa-ndundu, Mbumbuni and Mutalani. 	<p>(Nolturesh, WOWASCO & KIMAWASCO)</p>				
			<ul style="list-style-type: none"> • Promotion of water harvesting. 					
			<ul style="list-style-type: none"> • Promotion of water re-use and recycling. 					
			<ul style="list-style-type: none"> • Expand existing water projects like Nolturesh to Makindu and Wote. 					
			<ul style="list-style-type: none"> • Increase water machination capacities of water projects; Nolturesh, KIMAWASCO, WOWASCO. 					
			<ul style="list-style-type: none"> • Increase technical capacity of water department and increase budgetary allocation on water distribution. 					
			<ul style="list-style-type: none"> • Adoption of effective and efficient waste management systems in urban centres. 					

(This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)			<ul style="list-style-type: none"> • Develop and promote PPP strategy in waste management and recycling. 					
			<ul style="list-style-type: none"> • Construction/ improvement of water services infrastructure to Tier 1, 2, 3 and 4 urban centres as outlined in the Urban Areas and Cities Act (UACA). 					
		Ensure adequate and affordable access and supply of energy	<ul style="list-style-type: none"> • Commissioning of the preparation of an energy sector master plan for the entire County. 	MCG (Department of Energy) National Government (Ministry of Energy) Kenya Power Private Sector	<ul style="list-style-type: none"> • Improved uptake of green energy. • Reduced prices of energy. 			
			<ul style="list-style-type: none"> • Develop County specific energy generation and distribution policy. 					

<p>HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)</p>			<ul style="list-style-type: none"> Running of community awareness programs promoting the use of green energy (solar, wind and biofuel) countywide. 					
			<ul style="list-style-type: none"> Mainstreaming the use of solar energy in all households and development projects. 			*Quick-win		
			<ul style="list-style-type: none"> Promotion of building architecture that maximize solar tapping throughout the County. 					
			<ul style="list-style-type: none"> Promote public/private sector partnerships with private Independent Power Producers to establish solar and wind farms in Kibwezi East Sub County, with surplus solar energy to national grid. 					

<p>HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)</p>			<ul style="list-style-type: none"> Engagement of stakeholders to promote the consolidating of small solar farms to increase capacity of tapping solar energy. 					
			<ul style="list-style-type: none"> Development of biogas in areas where dairy industry is practiced and in public institutions. (such as Kavuko in Kilome). 					
			<ul style="list-style-type: none"> Finalize the construction of Thwake Mega dam in collaboration with the national government (will generate 17.6 megawatts of electricity). 					
			<ul style="list-style-type: none"> Construction/ improvement of energy services infrastructure to Tier 1, 2, 3 and 4 urban centres as outlined in the Urban Areas and Cities Act (UACA). 					

HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)		Enhance the penetration of ICT	<ul style="list-style-type: none"> • Development of an ICT sector master plan for the entire County. 	MCG (Department of ICT) Private Sector	<ul style="list-style-type: none"> • Wider access to ICT countywide. • Improved access to county services/ reduced bureaucracy. • Increased innovation in ICT. 			
			<ul style="list-style-type: none"> • Construction an ICT hub in Wote for promotion of innovation. 					
			<ul style="list-style-type: none"> • Commissioning of the development of ICT applications to be used for agribusiness, commerce and industry, revenue generation and procurement processes. 			*Quick-win		
			<ul style="list-style-type: none"> • Commissioning of the development of ICT applications to be used for automation of County government services (such as procurement, licensing, development control and digitization of land records). 			*Quick-win		
HUBS AND SPOKES		Ensure access to appropriate and affordable urban	<ul style="list-style-type: none"> • Develop and Promote Public Private Partnership (PPP) strategy in housing 	MCG (Department of Land and Physical	<ul style="list-style-type: none"> • Adequately planned urban areas. 			

<p>(This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)</p> <p>HUBS AND SPOKES (This concept refers to specialized,</p>		housing within the County.	and other social amenities.	Planning, the Department of Housing)	<ul style="list-style-type: none"> Improved quality of life in urban areas. 			
		<ul style="list-style-type: none"> Promote modern building technologies. 						
		<ul style="list-style-type: none"> Promote innovation and invention in housing development. 						
		Ensure access to education facilities within the County.	<ul style="list-style-type: none"> Establishment of adult literacy centres in all Tier 1, 2, 3 and 4 urban centres (Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni, Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni and Mumbuni). 	MCG (Department of Education). National Government (Ministry of Education) KALRO KoTDA	<ul style="list-style-type: none"> Improved adult literacy. Improved access to education for disabled children. Relevant and applicable tertiary education 	*Quick-win		
	<ul style="list-style-type: none"> Establishment of a public boarding school for visually, hearing and speech impaired children in Wote. 				*Quick-win			

well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)			<ul style="list-style-type: none"> Improvement of the Agricultural Training Centre (ATC) at Kwa Kathoka into an institution offering various livestock farming courses/disciplines. 											
			<ul style="list-style-type: none"> Establishment of fully equipped technical and vocational institutions which will spur growth of cottage industries. 											
			<ul style="list-style-type: none"> Construction/ improvement of education facilities to Tier 1, 2, 3 and 4 urban centres as outlined in the Urban Areas and Cities Act (UACA) such as establishment of a university in Konza City. 											
			Ensure improved access to health facilities and services.						<ul style="list-style-type: none"> Establishment of a mental unit in Mukuyuni, Kaumoni and Makindu. 	MCG (Department of Health).	<ul style="list-style-type: none"> Improved access to health facilities and services. Enhanced medical research. 	*Quick-win		
									<ul style="list-style-type: none"> Establishment of a medical training university at Kibwezi. 					
			HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban											

nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)			<ul style="list-style-type: none"> Construction of a medical trauma hospital at Enzai (Kilome sub-county).* 		<ul style="list-style-type: none"> Improved network of health facilities. 	*Quick-win		
			<ul style="list-style-type: none"> Invest in equipping all the health facilities in Makueni County. 					
			<ul style="list-style-type: none"> Construction/ improvement of health facilities to Tier 1, 2, 3 and 4 urban centres as outlined in the Urban Areas and Cities Act (UACA) such as appropriate upgrading of dispensaries and health centres. 					
	HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban	Ensure improved access to community facilities	<ul style="list-style-type: none"> Establishment of gender-based violence recovery centres in all sub-county headquarters (Nunguni, Kathonzweni, Malili, Tawa, Makindu and Kambu) in addition to the newly opened one at Wote. 	MCG (Department of Gender, Youth and Social Services).	<ul style="list-style-type: none"> Reduced cases of neglect of the elderly, orphans and street children. Improved quality of life for women/ men affected by gender violence. Improved access to public recreational facilities. 			
						<ul style="list-style-type: none"> Establishment of a public home for orphans and 		
						*Quick-win		

nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)			rehabilitation of street children in Wote.		<ul style="list-style-type: none"> Enhanced innovation. Promotion of talent. 			
			<ul style="list-style-type: none"> Establishment of elderly care centres at Ulilinzi, Nguu, Kitise, Tawa, Mukaa and Komboyoo. 			*Quick-win		
			<ul style="list-style-type: none"> Establishment of a public home for orphans and rehabilitation of street children in Emali. 			*Quick-win		
			<ul style="list-style-type: none"> Construction of stadiums (proposed stadium at Ngakaa in Makindu and a mini stadium in Makindu). 					
			<ul style="list-style-type: none"> Establishment of talent and innovation centers at (Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni, Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni and Mumbuni). 					
HUBS AND SPOKES (This concept refers to specialized, well-planned and well-								

<p>serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)</p> <p>HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system</p>	<p>Enhanced urban aesthetics, safety and security</p>	<p>Enhanced development control</p>	<ul style="list-style-type: none"> • Introduction of automated systems for enforcement, monitoring and implementation of urban plans. 	<p>MCG (Department of Land and Physical Planning)</p>	<ul style="list-style-type: none"> • Reduced bureaucracy in development control processes (development application, decision-making and enforcement). 			
		<p>Strengthened security and safety within urban areas</p>	<ul style="list-style-type: none"> • Construction of disaster management stations in all Tier 1 and 2 urban areas (Konza, Wote, Kibwezi, Makindu-Kiboko and Emali), as well as in all industrial zones (Sultan Hamud, Kalamba, Kikima, Mbumbuni, Kathonzweni and Itangini). 	<p>MCG (Department of Land and Physical Planning) The National Government (Ministry of Interior and National Coordination)</p>	<ul style="list-style-type: none"> • Improved policing within the urban areas. • Heightened disaster response ability 			
			<ul style="list-style-type: none"> • Upgrading/ Construction of fully-fledged police stations in all Tier 1, 2 and 3 urban areas (Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni). 					

<p>of transport development corridors to the rural hinterland and external markets)</p> <p>HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland</p>			<ul style="list-style-type: none"> Development of fully-fledged police posts in all Tier 4 urban areas (Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni). 					
	Enhanced transport connectivity	Tarmacking and maintenance of national/ regional connector roads	<ul style="list-style-type: none"> Completion of the ongoing upgrading of the A9/B64 (Kibwezi-Kitui road) to bitumen standards (Kibwezi-Athi Bridge: 27km) 	KENHA (Kenya National Highways Authority)	Improved intra-county connectivity. Improved connectivity of the County to regional markets. Improved transport efficiency.	*Quick-win		
			<ul style="list-style-type: none"> Periodic maintenance of the B60 Wote-Makindu road: 70km 	KENHA				
			<ul style="list-style-type: none"> Routine maintenance of the B61 Wote-Makindu road: 70km 	KENHA				
			<ul style="list-style-type: none"> Performance based road maintenance contracting (PBC) for the B60 Katumani-Ukia-Wote road (Kola-Wote: 40km) 	KENHA				
		<ul style="list-style-type: none"> Performance based road maintenance contracting (PBC) for the A8 Mombasa road 	KENHA					

and external markets)	HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport		(189km within Makueni County)					
		Tarmacking of roads along missing links	• Tarmacking of Emali-Kalamba-Ukia road (41.24km)	KERRA (Kenya Rural Roads Authority) MCG (Department of Transport and Public Works)	Improved intra-county connectivity. Improved connectivity within the County to local markets. Improved transport efficiency.	*Quick-win		
			• Tarmacking of Itangini-Miu road.					
			• Completion of the tarmacking of Sultan Hamud-Kasikeu-Nunguni road					
			• Tarmacking of Salama-Nunguni-Kola road (33.45km)					
			• Tarmacking of Salama-Kiu road (13.68km).					
			• Tarmacking of Wote-Katangini-Kalawa road (29.6km)					
			• Tarmacking of Kibwezi-Masongaleni-Ulilinzi-Athi Salama road.			*Quick-win		
Upgrading of rural connectors	• Levelling and murraming of the Mito Andei-Manzui road (tourism road).	KERRA MCG (Department of	Improved intra-county connectivity. Improved transport efficiency.					

development corridors to the rural hinterland and external markets)			<ul style="list-style-type: none"> • Levelling and gravelling of all centre connectors within the highlands. 	Transport and Public Works)				
		Improvement of bridges and drifts	<ul style="list-style-type: none"> • Construction of bridges and drifts in key areas (guided by a detailed feasibility study) along the following rivers: <ul style="list-style-type: none"> ○ Athi, ○ Muooni, ○ Kambu, ○ Kiboko, ○ Kaiti, ○ Thwake ○ Mtitio Andei 	MCG (Department of Transport and Public Works) National Government Ministry of Transport & Infrastructure KENHA KERRA	Improved intra-county connectivity. Improved transport efficiency.			
	HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes	Enhanced transport safety	Construction of road and rail transport safety infrastructure	<ul style="list-style-type: none"> • Establishment of transport disaster management centers in all Tier 1 and 2 urban areas. 	MCG (Department of Transport and Public Works) KENHA	Faster response to transport disasters. Reduced accidents at major junctions. Improved connectivity.		

connected by a proper system of transport development corridors to the rural hinterland and external markets)			<ul style="list-style-type: none"> Upgrading of the road interchanges along A109, B7 and at junctions within the Tier 1, 2 and 3 urban areas (Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni). 	KERRA Kenya Railways				
	Improvement of NMT transport safety		<ul style="list-style-type: none"> Promotion of the use of NMT safety attire such as reflective jackets and helmets Countywide. 	MCG (Department of Transport and Public Works) KENHA KERRA	Improved NMT safety.			
			<ul style="list-style-type: none"> Designation of routes for NMT infrastructure (such as cycling lanes on all major roads all Tier 1, 2 and 3 urban areas). 					
			<ul style="list-style-type: none"> Establishment of termini for NMT in all urban areas (such as boda boda sheds). 					
HUBS AND SPOKES (This concept refers to								

specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the rural hinterland and external markets)	Improved inter-modal connectivity	Construction of inter-modal connecting and supportive infrastructure	<ul style="list-style-type: none"> Commissioning of detailed feasibility studies on road and NMT path designs for connecting the SGR stations to bus/vehicular and air termini at Emali, Kibwezi, Mtito Andei and Makindu. 	MCG (Department of Transport and Public Works; Department of Lands and Physical Planning) Kenya Railways KENHA	Improved inter-modal connectivity				
			<ul style="list-style-type: none"> Construction of logistics termini at Emali, Kibwezi and Mtito Andei. 						
	HUBS AND SPOKES (This concept refers to specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the	Reduced traffic interference by settlements along major transportation corridors	Revival of Makindu Airstrip	<ul style="list-style-type: none"> Rehabilitation of the tarmac at the Makindu airstrip to acceptable standards. 	KAA (Kenya Airports Authority) MCG (Department of Transport and Public Works)				
				<ul style="list-style-type: none"> Construction of modern terminus buildings at the Makindu airstrip. 					
specialized, well-planned and well-serviced urban nodes connected by a proper system of transport development corridors to the	Reduced traffic interference by settlements along major transportation corridors	Preparation of urban plans for all towns along the A109 and B7 highways.	<ul style="list-style-type: none"> Undertake the planning of all the towns along the A109 and B7 highways (Mtito Andei, Maikuu, Kibwezi, Makindu, Kiboko, Simba, Emali, Sultan Hamud, Salama, Konza, Kaulini, Kiaoni). 	MCG (Department of Lands and Physical Planning) KENHA	Approved plans of all towns along the A109 and B7 highways. Enhanced development control along highway centers (along the 'necklace')				

rural hinterland and external markets)	Promotion of rail tourism	Establishment of rail tourism infrastructure	<ul style="list-style-type: none"> Construction of a railway history museum at Makindu (on the lunatic express and the SGR). 	MCG Kenya Railways Kenya Tourism Board	County revenue from rail tourism			
<p>THE GREEN LUNGS (This concept covers the forested areas, predominantly in Mbooni and Kilome, areas and around the Chyulu Hills).</p> <p>THE GREEN LUNGS (This concept covers the forested areas, predominantly in Mbooni and Kilome, areas</p>	Increased forest cover	Afforestation and re-afforestation of all degraded forests.	<ul style="list-style-type: none"> Preparation of forest management plans for all gazetted forests. 	KFS MCG Farmers cooperatives	<ul style="list-style-type: none"> 10% of the County land cover being dedicated forests. 10% of the County land cover being under agro-forestry. Decreased forest encroachment Minimized human wildlife conflict. Completed forest management plans 			
			<ul style="list-style-type: none"> Fencing of all gazetted forests 					
			<ul style="list-style-type: none"> Mapping of forest degradation hotspots 					
			<ul style="list-style-type: none"> Planting of indigenous trees at forest degradation hotspots 					
			<ul style="list-style-type: none"> Supply of drought-resistant tree seedlings to farmers in Kibwezi East and West sub-counties, as well as Nguu, Kathonzwi, Emali, Mathau, Kikumini, Mavindini and Kitise wards. 			*Quick-win		
<ul style="list-style-type: none"> Supply of fast-growing tree seedlings to farmers for agro-forestry in Mbooni and Kilome sub-counties, as well the highly productive zones of Makueni sub-county. 	*Quick-win							

and around the Chyulu Hills).			<ul style="list-style-type: none"> Establishment of a bursary scheme from forest resource utilization to benefit needy students from areas adjacent to forests. 						
			<ul style="list-style-type: none"> Development of community awareness programs on benefits of forest resources. 						
	THE GREEN LUNGS (This concept covers the forested areas, predominantly in Mbooni and Kilome, areas and around the Chyulu Hills).	Diversification of forest revenue streams'	Promotion of forest tourism '	<ul style="list-style-type: none"> Commissioning of detailed feasibility studies on appropriate wildlife species that can be introduced into the forested areas. 	MCG (Department of Trade and Tourism) KFS KWS Kenya Tourism Board	<ul style="list-style-type: none"> Increased tourism numbers in forests. Increased forest tourism revenue. 			
				<ul style="list-style-type: none"> Introduction of appropriate wildlife into forests to attract tourists. 					
				<ul style="list-style-type: none"> Promotion of adventure tourism in forests (such as nature trails) on social media, the County website and through paid publicized advertisements. 					

THE CRYING HILLS (This concept covers areas within the Mbooni and Kilungu Water towers, surrounding the following major towns within the region: Kikima, Nunguni).	Controlled soil erosion	Promotion of soil conservation	<ul style="list-style-type: none"> Enhancement of community training programs on the appropriate and standardized methods of terracing within the steep sloping areas of the County. 	MCG (Department of Agriculture) Farmers cooperatives	<ul style="list-style-type: none"> Reduced siltation of rivers. Increased uptake of appropriate soil erosion control techniques. Presence of a terracing and soil training center at Nunguni. 			
			<ul style="list-style-type: none"> Enhancement of community awareness programs on benefits of soil erosion control. 					
			<ul style="list-style-type: none"> Establishment of a terracing and soil training centre at Nunguni. 					
			<ul style="list-style-type: none"> Establishment of a large-scale wind power generation farm at the Kilungu Hills. 					
THE CRYING HILLS (This concept covers areas within the Mbooni and Kilungu Water towers, surrounding the following major towns within the			<ul style="list-style-type: none"> Encasing of endangered springs. 	MCG (Department of Environment and Natural Resources) NEMA	<ul style="list-style-type: none"> Increased number of protected springs. Increased number of community 			
			<ul style="list-style-type: none"> Banning of any harvesting of sand along the minor tributaries. 					

region: Kikima, Nunguni).			<ul style="list-style-type: none"> Enhancing community awareness programs on benefits of riparian protection and management. 	WRA	<ul style="list-style-type: none"> forums on riparian conservation. Elimination of sand harvesting along the minor tributaries. 			
	Controlled Water Abstraction.	Regulation of water abstraction	<ul style="list-style-type: none"> Licensing of any abstraction of water from the streams and springs within the County (other than that aimed for domestic use). 	MCG (Department of Environment and Natural Resources) NEMA WRA	<ul style="list-style-type: none"> Increased water volumes downstream. 			
ARTERIES AND THE SPONGE (This concept covers all major rivers and wetlands in the County)	Sustainable utilization of water resources	Irrigation and flood control	<ul style="list-style-type: none"> Finalization of construction of the Thwake Dam. 	MCG (Department of Water and the Department of Environment and Natural Resources) National Government Ministry of Water NEMA WRA	<ul style="list-style-type: none"> Operationalization of the Thwake Dam. Increased number of medium and small size dams. Reduced incidences of river flooding downstream. Organized and sustainable sand harvesting sites along the major and small rivers in the County. 			
			<ul style="list-style-type: none"> Commissioning of a detailed feasibility study along the following major rivers: Athi, Thwake, Muuoni, Kambu, Kiboko, Kaiti, and Mtito Andei, to establish the viability and suitable locations for medium and small sand dams. 					
			<ul style="list-style-type: none"> Construction of medium-sized and small dams at spots identified by the 					

ARTERIES AND THE SPONGE (This concept covers all major rivers and wetlands in the County)			detailed feasibility studies.					
			<ul style="list-style-type: none"> Promote transboundary cooperation to implement new water projects. 					
			<ul style="list-style-type: none"> Stricter licensing of any sand harvesting from the major and small rivers in the County. 					
			<ul style="list-style-type: none"> Controlled harvesting of sand from wetlands for desilting prior to the rainy season. 					
			<ul style="list-style-type: none"> Enhanced community awareness programs on benefits of riparian protection and management. 					
THE HINTERLAND	Improve land titling processes	Reduction of land titling bureaucracies	<ul style="list-style-type: none"> Titling of the un-surveyed land in the rural areas. 	MCG (Department of Lands and	<ul style="list-style-type: none"> Increased numbers of land owners with title deeds. 			

THE HINTERLAND (This concept refers to the rural hinterlands of Makueni County)*			<ul style="list-style-type: none"> • Sensitization measures to discourage land fragmentation in the rural areas to free land for agricultural use. 					
			<ul style="list-style-type: none"> • A consultative county-wide process to determine minimum land holding sizes per agro-ecological zone. 					
			<ul style="list-style-type: none"> • Initiating a land use reform program. 					
			<ul style="list-style-type: none"> • Prepare and implement zoning guidelines to ensure effective land use in the rural human settlement areas. 					
			<ul style="list-style-type: none"> • Map out and prohibit development in environmentally sensitive areas. 					
	Improve service provision in rural areas	Upgrading of rural roads and basic infrastructural services	<ul style="list-style-type: none"> • Enhance rural road network by upgrading existing roads and opening new areas, to murrum standard. 	MCG (Department of Lands and Physical Planning;	<ul style="list-style-type: none"> • Improved quality of rural life. • Improved rural connectivity. 			

			<ul style="list-style-type: none"> Provide basic social services such as health care, education, water services at the rural centres. 	Departments of Transport, Education, Water and Health)				
<p>THE PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP aims to promote)</p>	Promotion of tourism	<p>Diversification of tourism revenue streams:</p> <ul style="list-style-type: none"> Wildlife tourism Cultural Tourism Eco-tourism Sports tourism Medical tourism Religious tourism Industrial tourism Agri tourism Conference tourism Railway road tourism Sports tourism 	<ul style="list-style-type: none"> Aggressive marketing of the circuit regionally and internationally 	<p>KFS KWS MCG National Museums of Kenya</p>	<ul style="list-style-type: none"> Increased tourism numbers Increased tourism revenue 	*Quick-win		
			<ul style="list-style-type: none"> Introduction of three County wildlife tourism gateways at Mtito Andei, Konza and Kiaoni/ Kalulini. 					
			<ul style="list-style-type: none"> Mapping of the wildlife migratory routes and zone them for conservation. 					
			<ul style="list-style-type: none"> Establishment of museum of Makueni and the Akamba history and a cultural centre in Makindu town. 					
			<ul style="list-style-type: none"> Establishment of large-scale handicraft centres in Makindu and Mtito Andei towns. 					

<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP aims to promote)</p>			<ul style="list-style-type: none"> • Introduction of cable cars in Makongo and Nzau areas. 					
			<ul style="list-style-type: none"> • Identification of nature trails and hill climbing activities 					
		Infrastructure development	<ul style="list-style-type: none"> • Investment in ICT infrastructure and capitalize on online marketing to publicize tourism sites. 	KENHA KERRA MCG (Department of Transport and Public Works) KAA	<ul style="list-style-type: none"> • Improved connectivity of the County to tourism sites 			
			<ul style="list-style-type: none"> • Mapping of tourism missing links and upgrading for tourism development. 					
			<ul style="list-style-type: none"> • Upgrading of airstrips to required standards. 					
		Promote PPPs and domestic tourism	<ul style="list-style-type: none"> • Introduction of incentives and subsidies e.g. lower taxes. 	MCG (Department of Tourism) Kenya Tourism board	<ul style="list-style-type: none"> • Increased tourism numbers • Increased tourism facilities 			
			<ul style="list-style-type: none"> • Promote investment in tourism facilities by the private sector. 					
			<ul style="list-style-type: none"> • Education and awareness campaigns on tourism destination sites. 					

<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP aims to promote)</p>		Environmental and cultural conservation	<ul style="list-style-type: none"> • Preservation of cultural heritage sites in Makueni. • Strict enforcement of the existing regulation safeguarding protected areas. 	National Museums of Kenya MCG KFS KWS	<ul style="list-style-type: none"> • Presence of cultural heritage sites • Rich tourism attraction sites 				
	Promotion of industrial growth	Designation of agro industrial zones	<ul style="list-style-type: none"> • Establishment of fruit collection and market centres at Itangini, Kalamba, Tawa, Mbuvo, Emali, Kibwezi. 	MCG Farmers co-operatives Private sector Kenya industrial Estates TVET	<ul style="list-style-type: none"> • Increased job opportunities • Increased revenue 	*Quick-win			
			<ul style="list-style-type: none"> • Establishment of livestock yards in every lowland ward center (Mtito Andei, Kambu, Masongaleni, Komboyoo, Maikuu, Kalulini and Kibwezi). 				*Quick-win		
			<ul style="list-style-type: none"> • Construction of modern abattoir and hides and skin collection centres at Kikima, Mbuvo, Ulilinzi, Itangini, Komboyoo. 						
			<ul style="list-style-type: none"> • Construction of a large-scale tannery 						

<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP aims to promote)</p>			and a meat processing plant at Kibwezi.					
			<ul style="list-style-type: none"> Establishment of milk collection centres in Nunguni, Mbumbuni, Kathonzweni, Kikima, Kola, Kilala, Kibwezi, Kasikeu and Masongaleni. 			*Quick-win		
			<ul style="list-style-type: none"> Establishment of a milk cooling plant in Kikima. 					
			<ul style="list-style-type: none"> Promotion of land consolidation in Kibwezi west and East Sub counties. 					
			<ul style="list-style-type: none"> Construction of tannery processing industries in Kibwezi. 					
			<ul style="list-style-type: none"> Construction of honey processing industries in Kibwezi. 					
			<ul style="list-style-type: none"> Expansion of the capacity of the existing crop processing plants such as the Kalamba Mango Processing Industry. 					

<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP aims to promote)</p>			<ul style="list-style-type: none"> • Development of incentives and subsidies to attract private sector investment in industry. 					
		Revival of dead industries	<ul style="list-style-type: none"> • Operationalize the tannery in Wote. 					
			<ul style="list-style-type: none"> • Operationalize the grain incubation centre in Mukuyuni. 					
			<ul style="list-style-type: none"> • Operationalization of the cotton ginnery in Wote. 					
		Designation of cottage industry areas	<ul style="list-style-type: none"> • Establishment of jua-kali industry in Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni urban centers. 					
		Infrastructure and skill development	<ul style="list-style-type: none"> • Introduction of Technical and Vocational Education Training (TVET) courses based on industrial needs. 			<ul style="list-style-type: none"> • Skilled population • Conducive business environment 		
<ul style="list-style-type: none"> • Development of urban and rural physical infrastructure (roads, water, electricity). 								

<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP aims to promote)*</p>			<ul style="list-style-type: none"> • Identification of inland container ports zone along the major transit corridors - between Emali and Sultan Hamud. 					
			<ul style="list-style-type: none"> • Development of incubation hubs. 					
	Sustainable mineral exploration	Feasibility studies	<ul style="list-style-type: none"> • Undertaking of detailed geological survey to determine the extent and commercial viability of mineral resources. 	<p>MCG NEMA Local community Private sector</p>	<ul style="list-style-type: none"> • Controlled mineral exploration • Increased job opportunities • Developed mining industry 			
			<ul style="list-style-type: none"> • Mapping the mineral potential areas. 					
		Promotion of mining industry	<ul style="list-style-type: none"> • Formulation of mineral exploration policy. 					
			<ul style="list-style-type: none"> • Partnership with existing and new private mining companies. 					
		<ul style="list-style-type: none"> • Establishment of a ceramics industry (using kaolin) at Nunguni. 						

<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP aims to promote)</p>			<ul style="list-style-type: none"> • Introduction of incentives and subsidies to encourage investment in the industry. 					
			<ul style="list-style-type: none"> • Capacity build the existing County Sand Authority to regulate sand harvesting in the County. 					
			<ul style="list-style-type: none"> • Identification of markets for existing mineral resources. 					
	Improvement of business environment	Development of Markets and its support infrastructure	<ul style="list-style-type: none"> • Construction of large-scale modern fruit markets at Emali and Itangini. 	MCG MSEA Chamber of Commerce	<ul style="list-style-type: none"> • Fully fledged markets • Increased revenue 			
			<ul style="list-style-type: none"> • Construction of large-scale grain fruit market at Kibwezi. 					
			<ul style="list-style-type: none"> • Construction of handicraft centers in Makindu and Mtito Andei towns. 					

<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP aims to promote)</p>			<ul style="list-style-type: none"> Construction of juakali sheds (for sale of juakali products) in Wote, Kibwezi, Emali and Konza/Malili, Mtito Andei, Kambu, Makindu, Sultan, Kasikeu, Kikima, Tawa and Kathonzweni towns. 			*Quick-win					
			<ul style="list-style-type: none"> Construction of waste disposal, drainage system, public toilets, storage facilities in all markets in the county. 			*Quick-win					
			<ul style="list-style-type: none"> Installation of street and security lights in all markets in the county. 			*Quick-win					
			Business development			<ul style="list-style-type: none"> Formation of trade cooperatives to organize marketing, savings and loans. 	MCG MSEA Chamber of Commerce	<ul style="list-style-type: none"> Increased number of businesses Increased access to business financing Harmonized business licensing 			
						<ul style="list-style-type: none"> Preparation of a trade policy in the County. 					
						<ul style="list-style-type: none"> Capacity building the youth and women on business and financial management in the County. 					
	<ul style="list-style-type: none"> Establishment of one stop shop licensing in the County. 										

<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP aims to promote)</p>			<ul style="list-style-type: none"> Improvement of the physical infrastructure e.g. roads, electricity 					
	Value-chain maximization	Technology advancement in agriculture	<ul style="list-style-type: none"> Promotion of the use of ICT for all crop, livestock and bee farmers. 	MCG KALRO National Irrigation board Private sector Financial institutions Farmer cooperatives	<ul style="list-style-type: none"> Improved livestock breeds Enhanced farm management practices Increased crop productivity Increased honey production 			
			<ul style="list-style-type: none"> Introduction of agricultural mechanization. 					
			<ul style="list-style-type: none"> Capacity building of farmers on emerging trends in crop and livestock production. 					
			<ul style="list-style-type: none"> Investment in commercially subsidized farming machinery. 					
			<ul style="list-style-type: none"> Promotion of appropriate honey production technology and increase hive products to enhance honey production in the County. 					
	Development of industries	<ul style="list-style-type: none"> Establishment of agro-industries and collection centres. 	MCG (Department of Agriculture; Department of Trade and Industry)	<ul style="list-style-type: none"> Value addition Increased job opportunities 				
		<ul style="list-style-type: none"> Revival of non-operational industries. 						

<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP</p>		<p>Identification and sustainable exploitation of livelihood zones</p>	<ul style="list-style-type: none"> Promotion of dairy agriculture, as well as sheep within the highland areas. 	<p>MCG (Department of Agriculture and Department of Water)</p>	<ul style="list-style-type: none"> Designated livelihood zones 			
			<ul style="list-style-type: none"> Promotion of large-scale livestock ranching within the lowlands (Kibwezi East and West sub-counties, as well as Nguu, Kathonzweni, Emali, Mathau, Kikumini, Mavindini and Kitise wards). 					
			<ul style="list-style-type: none"> Promotion of consolidation of small-scale farms into large-scale ranches within the lowlands (Kibwezi East and West sub-counties). 					
			<ul style="list-style-type: none"> Construction of water infrastructure such as water pans to support livestock rearing within the lowlands. 					
			<ul style="list-style-type: none"> Promotion of commercial pasture development within the middle zones and lowlands. 					

aims to promote)		Promotion of climate smart Agriculture	<ul style="list-style-type: none"> Promotion of the rearing of drought-resistant livestock breeds, particularly in the lowlands. 	MCG (Department of Agriculture; Department of ICT; Department of Trade & Industry) National Government (Ministries of Agriculture and Water)	<ul style="list-style-type: none"> Climate change resilience Food security 			
			<ul style="list-style-type: none"> Development of a County mobile application that can be downloaded by all crop and livestock farmers, providing access to updated climate information. 			*Quick-win		
			<ul style="list-style-type: none"> Promotion of the planting of drought-resistant crop varieties, particularly in the lowlands. 					
		Promotion of agricultural irrigation projects	<ul style="list-style-type: none"> Establishment of small-scale fish ponds in farms along the irrigation belt. 		<ul style="list-style-type: none"> Irrigation lead agriculture Improved crop and fish production 			
			<ul style="list-style-type: none"> Promotion of small-scale irrigation at households using harvested water through farm ponds and water storage tanks. 					
		PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and						

economic growth landscape options this CSP aims to promote)			<ul style="list-style-type: none"> Construction of dams at strategic areas to promote irrigation along the river belt (along River Athi, Muooni, Kambu, Kiboko, Kaiti, Thwake and Mito Andei). 					
	Improve access to farm inputs		<ul style="list-style-type: none"> Provision of farm inputs (such as pesticides and herbicides) at subsidized prices. 	MCG (Department of Agriculture)	<ul style="list-style-type: none"> Improved crop productivity 			
			<ul style="list-style-type: none"> Provision of certified seeds at subsidized prices. 					
			<ul style="list-style-type: none"> Encouraging research in farm inputs e.g. improved seed varieties in the whole county 					
Improving efficiency and effectiveness of extension service provision		<ul style="list-style-type: none"> Increasing number of extension officers in the whole county. 	MCG (Department of Agriculture)	<ul style="list-style-type: none"> Effective and efficient extension services Improved crop, livestock, bee and fish production 				
		<ul style="list-style-type: none"> Establishment of a veterinary laboratory to enhance disease control and food quality assurance in Wote. 						

<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP aims to promote)</p>			<ul style="list-style-type: none"> Promotion of farmers' service clinics to support the supply of inputs and provision of expert services. 						
	<p>Improve access to agricultural credit and marketing infrastructure</p>		<ul style="list-style-type: none"> Encourage development of co-operatives. 	<p>MCG (Department of Agriculture; Department of Trade)</p>	<ul style="list-style-type: none"> Improved access to markets Improved access to credit facilities 				
			<ul style="list-style-type: none"> Construction of modern markets. 						
			<ul style="list-style-type: none"> Capacity building on how to access affordable credit facilities e.g. MFIs. 						
	<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape)</p>			<ul style="list-style-type: none"> Establish inspectorate unit to ensure quality of inputs, imports/exports. 	<p>MCG (Department of Agriculture) KEPHIS</p>	<ul style="list-style-type: none"> Increased number of farmer cooperatives 			
				<ul style="list-style-type: none"> Establishment of an agricultural showground that will enhance the marketing of Makueni produce in Makindu. 					
				<ul style="list-style-type: none"> Strengthening the farmers' cooperatives through training and incentives. 					
		<p>Promotion of disease-free zones:</p>		<ul style="list-style-type: none"> Establishment of a livestock disease surveillance system especially in the lower zones to curb disease 	<p>MCG (Department of Agriculture) KALRO</p>	<ul style="list-style-type: none"> A disease-free zone 			

<p>options this CSP aims to promote)</p>			<p>outbreaks and provide quick management strategies.</p>					
<p>PRODUCTIVE SCAPES (This concept refers to the diverse agricultural and economic growth landscape options this CSP</p>			<ul style="list-style-type: none"> • Collaboration between agencies dealing with livestock and zoonotic diseases. 					

aims to promote)								
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Chapter 7: Capital Investment Plan

7.1 Overview

The County Government of Makueni is constitutionally required to plan, fund, design and construct infrastructural assets such as transport and health infrastructures that will enable the County economy to flourish. However, the infrastructural investment desires for Makueni County exceed the available resources hence the need for the County to appraise and prioritize the needs of the County. The County Government must identify and prioritize the most beneficial investments for the County Government and its people and as well as the economy to flourish.

The Capital Investment Plan (CIP) is a five-year plan for the funding of major purchases, land acquisitions, construction and restoration projects. This CIP is not a funding nor project authorization process, rather, a planning tool intended to:

1. Identify all capital needs anticipated for five years
2. Plan, schedule, and implement capital projects
3. Identify appropriate actors to fund selected development projects
4. Estimate the impact of capital projects on the operating budget
5. Inform the public about proposed investments

This CIP identifies anticipated public infrastructure and investment projects, as well as a financing approach and describe the county's policies and financial abilities to manage the investment needs associated with its spatial development and built environment. The CIP serves as a reference guide for the County Government and the County Assembly of Makueni when considering not only the allocation of funds to develop, or maintain the county's existing capital assets, but also to plan for capital projects' long-term financing so that funds are available when needed. In this case, it provides a link between the County Government of Makueni's strategic vision, its County Spatial Development Plan, and its annual budget.

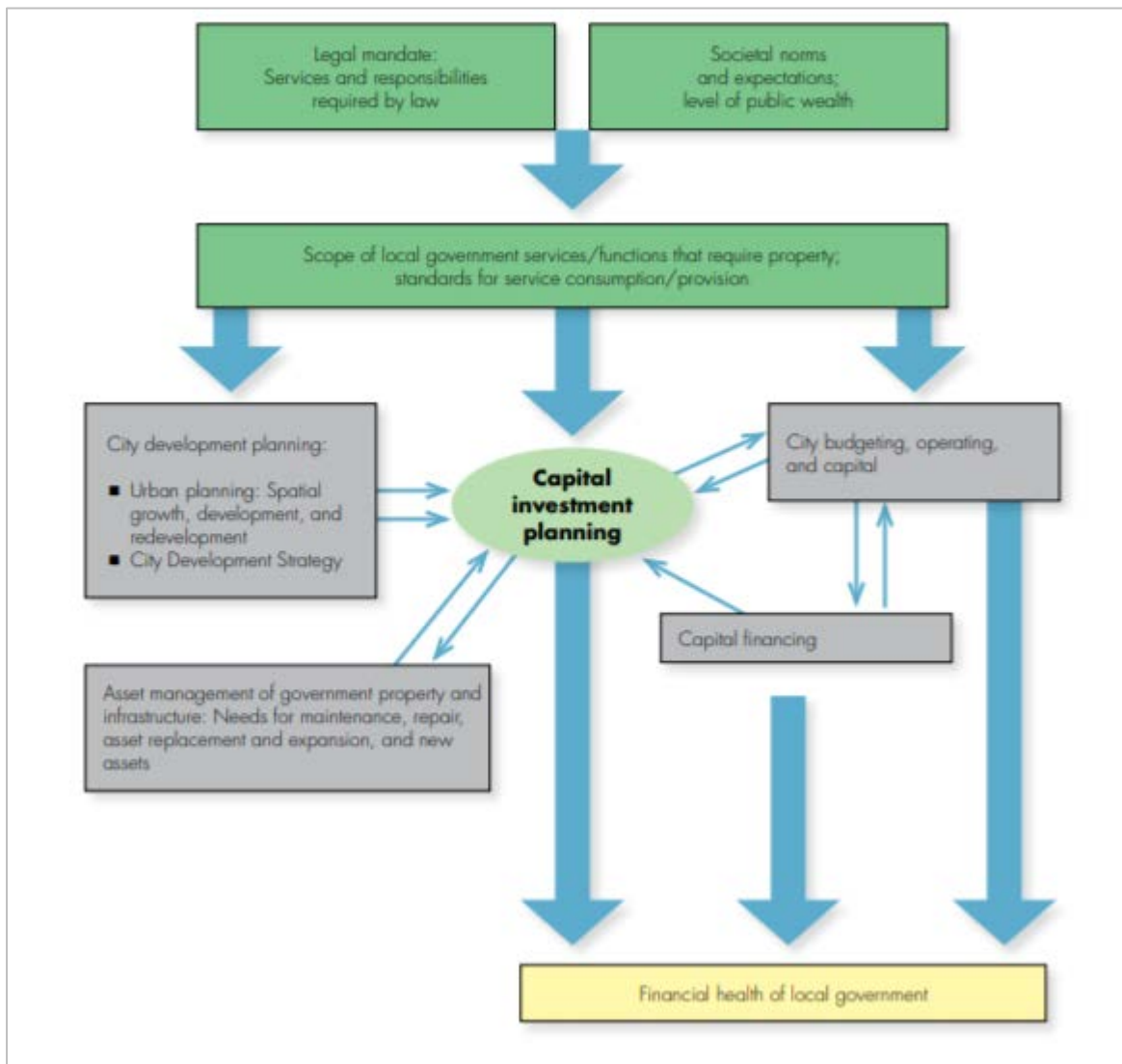
Generally, projects included in the CIP are expected to cost at least KSh 5 million (KSh 5M - \$) based on the proposals developed in the CSP. The CIP is divided into two phases and each project has an implementation and monitoring timeframe. The CIP projects include urban planning, designing, construction, and maintenance of infrastructural assets that enable Makueni County and its people as well as the economy to flourish such as the construction of health facilities, schools, and administrative offices.

7.1.1. Existing Infrastructure

The County's existing infrastructure stock, including road networks, electricity supply, institutional infrastructure, social and community facilities may constitute the bare minimum that may be used to put the County to initiate the much-needed economic transformation. A lot however, remains to be done to improve access, conditions and functional efficiencies of key infrastructures like roads and electricity supplies, while some such as water supplies and energy sources need to be developed. Hence the County need to create an investment

framework that ensures sustainable development in the County that would enhance the welfare of the people of Makueni.

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Source: World Bank Urban Development Series, 2011

The Figure above depicts how the Capital Investment Plan relates to other activities within Makueni County Government. The Green boxes show the Legal mandate, societal expectation and economic factors that are a fundamental base in development of the CIP. While the grey boxed show interrelated factors that provide input to the CIP such as projects, sources of funding and financing. And finally, the yellow box shows a very important aspect of CIP: -Decisions related to capital investment, city budgeting, and financing all directly impact the County’s financial health and its future ability to fund services for its communities.

7.1.2. a d'Ya Ybh]b['h Y'7 Ud]H U ' - b j Y g h a Y b h i D ' U b '

The Capital investment Plan (CIP) implementation in Makueni County shall;

1. Guide future asset management and financial management in the context of the County functions and activities
2. Advance the process of acquiring, holding, managing, operating, and disposing of capital assets (such as land, buildings, infrastructure facilities and networks, movable property) and other assets needed for attaining the county government's development agenda.
3. Provide detail descriptions of each proposed development project, as well as financial data regarding planned expenditures and revenues.
4. Establish the complete budget for a capital project including revenue sources and total expenditures it however does not authorize projects or appropriate funds for implementation of any project.
5. Be activated through the approval of the Makueni County Spatial Plan 2018-2028 by the County Assembly of Makueni to trigger initialization of each identified capital project.
6. The CIP shall be incorporated in the Makueni County's 2019/20 annual operating budget and shall need to be integrated in the Makueni County Integrated Development Plan 2017-2020 during its mid-term review. In addition, the county government needs to plan for and incorporate the after-acquisition life cycle costs of new or renovated assets in budget forecasts during the plan implementation period.
7. Be informed by and will inform other planning efforts within Makueni County, including the Integrated Urban Development Plans (IUDPs), Resource Area Management Plans, and the South Eastern Kenya Economic Bloc (SEKEB) Development proposals.
8. Hold a public review process of the Makueni CSP, the public review process dates will be planned and information by the County, during which this CIP will incorporate input from elected leaders, county technical officials, business groups and other key stakeholders about other priority projects that best facilitate the sustainable development of Makueni County and require funding for planning, construction or both.

The Makueni CSP once approved becomes a living document authorizing the financing and implementation of the selected CIP projects for the life of the project. The Plan shall be regularly reviewed, with adjustments and amendments made as required by the County Government of Makueni in case a project later exceeds the initial budget estimate or is completed under-budget. Annual updates will reflect the most current funding levels and the status of projects.

7.1.3. 8 Yj Ycd]b['R Y7 Ud]tJ' -bj Ygha YbhD`Ub`

This Capital Investment Plan (CIP) is based upon strategic priorities that;

1. Support and enhance agro-industrial development,
2. Promote Tourism and Biodiversity Conservation and;
3. Enable sustainable development of human settlement and urbanization
4. Stimulate profitable trade and commerce in Makueni County

In developing this CIP, all proposed Makueni County capital investments were considered together, and funding programs were developed and sized taking all capital needs into account. The strategic location, economic opportunities and development potential in Makueni County require the County Government of Makueni to refer to a comprehensive investments' framework guiding investment in infrastructure and other social improvement assets that enable the optimal and sustainable exploitation of Makueni county resources for the improved welfare of households in the county. The intended infrastructural and social facilities

development and investment for Makueni County requires more capital than the available revenue generation by the county Government, as indicated on Table 30. Hence, necessitating prioritization of the most beneficial investments that will actualize gainful agro-production and tourism, sustainable urbanization, efficient mobility, accessible healthcare, worthwhile trade and commerce and broad-based prosperity.

Projects were selected from the Plan Implementation Matrix which, incorporated public input and detailed all known project ideas including strategy, proposal, timeline, relevant actors and expected outcome of implementing a project.

The County's capital planning process using, the projects identified in the implementation matrix, was undertaken after generating the Makueni County Spatial Plan Implementation Matrix. The Plan Implementation Matrix was objectively prepared after considering impacts of different development models across various sectors and county wards to determine the most effective development proposals and useful projects that should strategically be implemented to achieve the vision of Makueni County. The proposed development projects were then taken through a thorough review and prioritization after which some catalyzing projects were selected based on multiple factors including:

1. Urgency of need
2. Significance in achieving the CSP Strategic goals and objectives
3. Scope of service
4. Community priority and impact
5. Financial feasibility

The CIP is refined and projects to be funded in the over the CIP fiscal period are selected and costed based on actual project development standards and guidelines, as indicated in the Costing Criteria (Section 7.5), which have generally been adopted.

The Makueni CSP Capital Investment Plan (total of 5 years - 2019 to 2024) identified projects with a total capital expenditure of KES 19,937,528,290. Some of the capital projects relate to Renovation and/or Replacement of existing infrastructure; some relate to Growth Related or New Assets; and others relate to Urban Planning, Studies and Other projects.

7.2. Funding the Capital Investment Plan

The 2018/19 Capital Budget will represent the funding for the first year of the CIP. Projects in the first year of the plan generally represent the County's most immediate investment priorities. Projects that are included in the plan are stated as priorities but are not guaranteed for funding as the plan reflects the stated needs within the County. In this regard, the CIP is intended to be a fluid document that will be subject to change each year as priorities are re-assessed and as additional information on funding streams become more defines. The mobilization of these funds is critical if the County Government of Makueni will have to contribute to the overall goals of accelerating economic growth in Makueni County. The following are some of the sources of funds for the Capital Investment Plan:

- a) National Government County transfers;
- b) County taxes and revenues from assets, valuation roll, among other forms of revenue generation;

- c) Development Partners (DP) funding e.g. WWF, ICRAF, DANIDA, WORLD BANK; and the African Development Bank (ADB) among others;
- d) Private and related collaborative sources (Public Private Partnerships - PPPs, etc.)
- e) The local community through CBOs, CSOs, SACCOs etc.

7.2.1. ; c j Yfba YbhcZ? YbnUfl c?LBUjcbU` : i bX]b[``

According to the Annual County Government Budget Implementation Review Report by the Office of the Controller of Budget, the County's FY 2017/18 Approved Supplementary Budget is Kshs.9.67 billion, comprising of Kshs.6.1billion (63 per cent) and Kshs.3.58 billion (37per cent) allocations for recurrent and development expenditure respectively. To finance the budget, the County expected to receive Kshs.6.83 billion (70.5 per cent) as equitable share of revenue raised nationally, Kshs.738.34 million (7.9 per cent) as total conditional grants, generate Kshs.600 million (6.2 per cent) from own source revenue Sources, Other expected revenue Kshs.187.84 (1.9 per cent) million, and Kshs.1.32 billion (13.7per cent) cash balance from FY 2016/17.

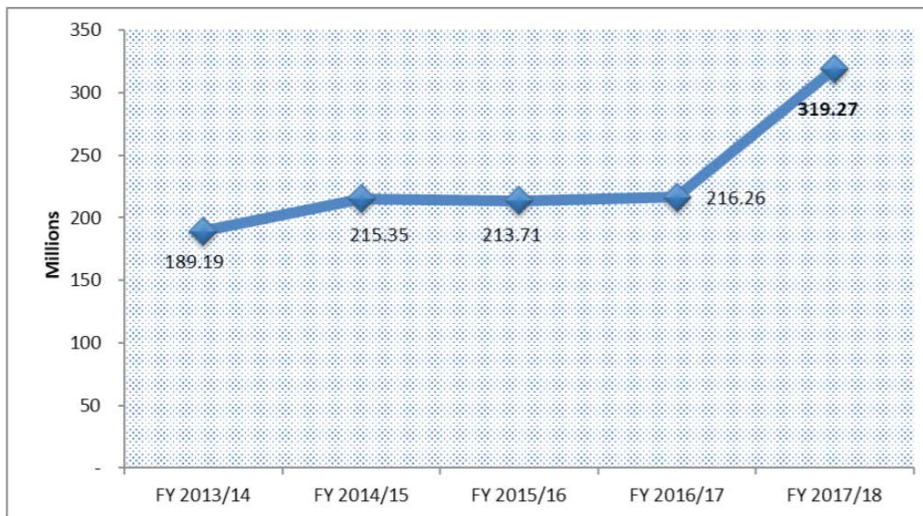
The conditional grants contained in the CARA, 2017 comprise of Kshs.26.72 million (3.5 per cent) from DANIDA, Kshs.47.39 million (6.2 per cent) for the World Bank Kenya Devolution Support Programme, Kshs.104.28 million (13.5per cent) as World Bank loan for Transforming Health System for Universal Care Project, Kshs.66 million (8.6 per cent) as European Union (EU) grant for Devolution Support, Kshs.95.74 million (12.4 per cent) for leasing of Medical Equipment, Kshs.254.35 million (33 per cent) for Road maintenance Fuel Levy, Kshs.19.44 million (2.5 per cent) for User Fee foregone, Kshs.64.13 million (8.3 per cent) for Village youth polytechnics, Kshs.42.07 million(5.5 per cent) as other conditional grants and Kshs.50 million (6.5 per cent) as World Bank Loan for National Agricultural & Rural Inclusive Project. The County also budgeted to receive Kshs.20 million as grant for Kenya Urban Development Support Programme which is not contained in the CARA, 2017.

As eluded above, these amounts are still not enough to sustain the various capital projects advanced in this Plan considering the recurrent expenditure also takes quite a huge chunk of the monetary allocation from the National Government.

7.2.2. 7 ci bhmi; c j Yfba YbhcZAU_i Ybj`

During the FY 2017/18, the County received Kshs.6.82 billion as equitable share of revenue raised nationally, Kshs.495.24 million as total conditional grants, raised Kshs.319.27 million as own source revenue, and had a cash balance of Kshs.1.32 billion from FY 2016/17. The total available funds amounted to Kshs.8.96 billion. Figure 19 shows the quarterly trend in local revenue collection from the first quarter of FY 2013/14 to the fourth quarter FY 2016/17.

Table 1: Own source revenue generated in FY 2017/18



Source: Makueni County Treasury, 2017

The total own source revenue generated in FY 2017/18 amounted to Kshs.319.26 million, representing an increase of 47.6 per cent compared to Kshs.216.25. million generated in FY 2016/17 and was 53.2 per cent of the annual target.

Table 2: Breakdown of Own source revenue generated in FY 2017/18

Bc	7 cbX]h]cbU'; fUbh	7 5 F 5 ž&\$%+ 5 bbi U'5`cWU]cb]b' ? gl gŁ	5 Wi U'fYWW]d]g']b: M&\$%+##%]b' ? gl g''	5 Wi U'F'YWW]d]g' Ug'DYFWb]U] Y'cZ 5 bbi U''
1	Road Maintenance Fuel Levy Fund	254,349,334	254,349,334	100
2	Leasing of Medical Equipment	95,744,681	-	-
3	Kenya Devolution Support Programme (KDSP)	47,396,651	47,396,651	100
4	Compensation for User Fee Foregone	19,435,760	19,435,760	100
5	DANIDA Grant	26,715,347	26,715,347	100
6	Development of Youth Polytechnics	64,131,527	64,131,527	100
7	Conditional Allocation - Other Loans & Grants	42,068,488	-	-
8	World Bank Loan for Transforming Health System for universal Care Project	104,284,318	32,588,849	31
9	World Bank Loan for National Agricultural & Rural Inclusive Project	50,000,000	50,609,855	101
10	EU Grant	66,000,000	-	-
HcIU'		++\$2/8* 2/\$* '\$	- &* ž((ž + (' \$	* ('

Source: Makueni County Treasury, 2017

The County Government has not been able to invest sufficiently in equipment and other capital assets. However, the County can budget to finance critical infrastructural investments in several ways which may contribute to capital sources. The County can dedicate local taxes and licence fees to capital projects. Such taxes and fees usually charged to developers should be used to fund necessary extensions of public infrastructure or impact fees attributed to the need for additional infrastructure caused by the new development. This will however need policy and legislation to support effective enforcement. Surplus from the annual operating budget either from own-source revenues or saving or from general transfers from National Government can also be a source for capital expenditures. Service utility users' contribution mostly one-time input can be a substantial funding source, e.g. Water Connection charges. Furthermore, for infrastructure systems that provides user paid services like water and sewerage, some part of the user fee should constitute a dedicated source for capital investment, paying for capital components of maintenance costs for restoration and recapitalization. Contributing to the infrastructure implementation cost also builds citizens' sense of ownership and contributes to citizens' selecting priority projects and controlling implementation.

County revenue and funds dedicated to implementing this plan should be well managed in a special Reserve Funds established through a formal county resolution. This fund would accumulate specific earmarked resources identified for the development and maintenance of essential capital assets and cannot be used for other purposes. The special fund can either be dedicated to a specific infrastructure system or group of properties like roads and streets or water, sewerage, and rainwater harvesting. This reserve should be protected by local regulations from use from other purposes and supervised independently by a special board. The special fund can be either dedicated to a specific infrastructure system or group of properties like roads and streets or water, sewerage, and rainwater harvesting. This reserve should be protected by local regulations from use for other purposes and supervised independently by a special board that incorporated key stakeholders and managed by a professional authority. Moreover, these special funds should be readily available only for capital investment projects as identified by this plan.

The Makueni County Spatial Plan has considered and planned for all land in the County and recommended public use land to be reserved for future development. The County can avail public land to pragmatic investors to ensure that they effectively develop required capital investments recommended for the respective zoning boundaries. The plan also makes recommendations that discourage unnecessary expropriation of land from sitting tenants when availing public land for development.

7.2.3. 8 Yj Ycda YbhDUfHbYfg'fB DGL'

The County Government of Makueni can obtain grant fund from specialized donor-funded entities as an important source of capital expenditure funding. Such programmes as the World Bank Funded- Kenya Informal Settlement Improvement Program that is designed to support specific types of projects in the counties. Makueni County hosts world respected biodiversity and heritage sites and consequently attracted world organizations willing to finance efforts that ensure biodiversity conservation, heritage, cultural livelihoods promotion as well as environmental protection. WWF, Nature Kenya, UNESCO among others alluded to above are

such organizations that may be sources of grant funds to finance capital investments effect that their respective causes and mandates.

7.2.4. **Dfjj UY'Di V'JWUfIbYfg\ Jdg'fDDDGL'**

Public-Private Partnerships are based on a contractual relationship between the Government and the private partner (which can be a consortium of private entities). Private-sector developers can take certain risks that the County Government might not withstand when undertaking a project and yet the county might benefit from the innovations and efficiency of the private sector in implementing capital projects. Private partners in PPPs can play several roles in implementing capital investment projects, which include providing financing, expertise, and efficiency; and, if a PPP is well structured, then a sure implementation procedure is imminent.

Well-structured PPP contracts protect public budgets from the risks of budget overruns and funding drying up before project completion. This is so because project costs and funding for the entire project are stipulated in the PPP contract, before project implementation commences. Some PPP projects can be completely financially self-sufficient and do not require public funding like a fisherman's' wharf designed, financed, built, and operated by a private partner, with the with docking prices controlled by the county Government. In such cases, investors recapture their costs and obtain profit from the revenues generated by the property/facility they build, while the Government obtains the public-use facility built without significant public capital outlay.

Developer exactions are another form of PPP engagement which implies that developers build on-site infrastructure on their own, when developing their property with no public funding or finance. For example, a developer is required to build an access road to its development site, or complete off-site infrastructure that was supposed to have been built by the county Government but was not developed. This form can be a negotiated contribution of off-site infrastructure in addition to on-site infrastructure required of the private development. A relevant case would be to allow and have the proposed wildlife conservancies designed, financed, built, and operated by a private partner on a Government-owned land site and required to develop social infrastructure within the area. The County Government become shareholders in the conservancy and local community benefit from social infrastructural developments and receiving a profit share.

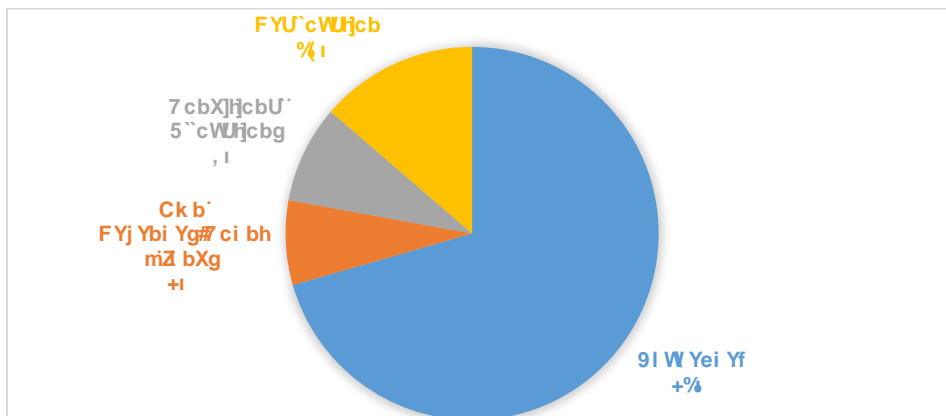
There can also be PPP form of voluntary and negotiated contributions in which property owners in a specific area agree to pay a predefined amount for specific improvements of infrastructure and services in the area, before capital investment in these improvements is made. This can best apply in business and commercial development zones of the designated urban areas.

7.2.5. **AU_i Yb]7 ci bhmQ: JbUbWU'7 UdUWImi**

Makueni County's financial capacity to fund capital investments is a key input in the capital investment planning. This capacity is analyzed to determine how the proposed expenditures, compare and relate to the total County budget. In the year ended 30th June, 2018, Makueni County had projected revenue of **99G- Ž +(Ž - * Ž%** consisting of KES 708,929,538.00 from own sources and County funds, KES 6,825,200,000 from the Exchequer, KES 817,315,436

from Development Partners, KES 1,323,451,037 being the reallocation budget from FY 2016/17.

Figure 6.1: Performance of Revenue Realization (FY 2018/2019)



Source: County Government of Makueni, 2018

Out of the projected revenue, Makueni County was able to realize 92% of actual revenues, representing 92% performance. The difference was due to under collection in the donor funds, own source revenue and other revenues as shown in the table below.

Table 6.2: Performance of Revenue Realization (FY 2018/2019)

FY 2018/2019 Actual	FY 2018/2019 Budget	FY 2017/2018 Actual	FY 2017/2018 Budget
Exchequer	6,825,200,000.00	6,825,200,000.00	100%
Own Revenues/ County funds	708,929,538.00	322,104,226.40	45%
Conditional Allocations	817,315,436.00	508,129,828.00	62%
Reallocation	1,323,451,037.15	1,323,451,037.15	100%

Source: County Government of Makueni, 2018

The draft budget estimates for financial year 2018/2019 prioritized estimates were guided by the strategic interventions identified in the draft County Integrated Development Plan 2018-2022 and the Makueni County Vision 2025. The estimates focus on laying ground for implementation of the key result areas identified in the CIDP. These are, irrigation, food security and agriculture commercialization, provision of reliable potable water, provision of universal health care for all and social and economic empowerment of youth, women and people living with disabilities. The draft budget estimates for the FY 2018/2019 (see Table 6.2 below) targets a total revenue of KES 7,127,800,000 from a wide-ranging resource basket.

Table 6.3: Revenue Realization (FY 2018/2019)

Category	FY 2018/2019 Actual
Equitable Share from National Government	7,127,800,000.00
County Generated Revenue	620,000,000.00
KDSP Grant-Investment Grant	168,575,682.00
DANIDA Grant (Universal Healthcare in Devolved System Program) – FY 2017/18 Funds	9,479,639.00
IDA (World Bank) Credit: Kenya Urban Support Project (KUSP)	136,261,600.00
DANIDA Grant (Universal Healthcare in Devolved System Program)	22,882,500.00
EU Grant (Instruments for Devolution Advice and Support IDEAS)	45,000,000.00
Conditional Allocation for Compensation for User Fees Forgone	19,435,760.00

EU Grant for Instruments for Devolution Advice and Support	66,000,000.00
Conditional Allocation for Development of Youth Polytechnics	31,570,000.00
IDA (World Bank) Credit: Kenya Devolution Support Project (KDSP) "Level 1 Grant"	50,750,604.00
Transforming Health Systems for Universal Care Project (WB)	100,000,000.00
IDA (World Bank) Credit: (National Agricultural and Rural Inclusive Growth Project (NARIGP)	140,435,163.00
Conditional Allocation for Leasing of Medical Equipment	200,000,000.00
Conditional Allocation for Road Maintenance Fuel Levy Fund	187,668,766.00
HcHJ'FYj Ybi Y&\$% 'E' &\$% '	, ž & ž) - ž-% '\$\$'

Source: County Government of Makueni, 2018

The Makueni county development budget as illustrated in Table 6.3 below is distributed between ward allocations and headquarter (flagship) allocation. In the FY 2017/18, the ward allocation was enhanced from KES 22.5 million per ward to KES 33 million per ward. In the same period, a county resource allocation formula was developed and implemented. Overall, the ward allocation has an average of 29% of the total capital budget, with FY 2017/18, the allocation being 37% of the total capital budget.

The total expenditure for the financial year 2017/2018 amounted to KES 9,961,325,982 of which KES 1,808,352,527 was spent on development, KES 4,728,532,087 on operations, maintenance and Personal emoluments, KES 724,332,867 on transfers to the County Assembly while KES 350,325,982 comprised of transfers to other County Government entities.

HUW'Y' \$. 'AU_i Yb]7 ci bhm8 Yj Ycda Ybh6 i X[Yh

6 i X[Yh fi MŁ	FYW ffYbh 6 i X[Yh	8 Yj Ycda Ybh 6 i X[Yh	HcHJ'6 i X[Yh	K UFX' 8 Yj Ycda Ybh 6 i X[Yh	< YUX'Ei UfHYf' 8 Yj Ycda Ybh 6 i X[Yh
2013/14	2,881,468,426	1,836,154,630	(ž-%ž & ž) *'	558,000,000	1,278,154,630
2014/15	3,843,738,717	1,912,364,808	) ž) * ž\$ ž &)'	542,500,000	1,369,864,808
2015/16	4,141,445,465	2,885,460,170	+ž&* ž \$) ž')'	703,500,000	2,181,960,170
2016/17	4,630,161,749	2,621,117,113	+ž) %ž+, ž * &'	675,000,000	1,946,117,113
2017/18	5,203,795,113	2,689,844,056	+ž - ' ž' - ž% -'	995,072,308	1,694,771,748
TOTAL	20,700,609,470	11,994,940,777	' &ž () ž) žž(+'	3,474,072,308	8,470,868,469
%	63%	37%	' %\$\$i '	29%	71%

Source: County Government of Makueni, 2018

Makueni County is in the process of automating its Asset Register and notes that during the FY 2017/2018 the fixed assets increased from KES 2,359,322,135 to KES 2,991,325,500. Initially, when the county came into being in 2013, it inherited some assets from the defunct local authorities amounting to KES 669,255,500.00.

A look at the County's programme based budgetary allocations to various sectors (see Table 6.4 overleaf) would make it a bit hard to believe that the County alone can be able to fund all the projects proposed under this CSP.

It is not easy to directly compare the County Budget with the CIP budget since the County budget is not detailed enough to apportion actual programmes or fund them. However,

elements of the County Budget allude to certain expenditures that would fall under sectoral items discussed in this plan. For example, Transport and Infrastructure, Human Settlement, Agriculture and livestock, Economic Development, as well as Environment and Resource Protection are all County budgeted expenditures that would relate to the detailed proposed expenditures presented in the CIP. If this was the consideration, the County budgetary allocation for capital expenditure would therefore imply a budget of about **96% of the County Budget** annually to fully fund anticipated annual projects advanced by this CIP.

7.3. The Investment Programme

Strategies are courses of action geared towards the achievement of given objectives. The strategy formulation process for Makueni County was supported by the existing background documents, a synthesis of the potentials, opportunities, and constraints of data collected, and stakeholder inputs from the various forums held in the town.

7.3.1. Planning of Urban Areas

Planning of Urban Areas

DFC>97H #	DFC>97H .	EHM Km ²	I B+H 7 CGH Mln	D<5 G9		D<5 G9 %				D<5 G9 &						5 DDFCL-A 5 H9 7 CGH fHB ? 9 G'L
				% fl L	& fl L	8\$% # 8\$8\$	8\$8\$# 8\$8%	8\$8\$# 8\$8\$	8\$8\$# 8\$8\$	8\$& # 8\$8(#	8\$8(# 8\$8)	8\$& # 8\$8+	8\$&+ # 8\$8,	8\$& # 8\$&-	8\$&- # 8\$' \$	
AUC001	Preparation and approval of a detailed urban area plan for the integration of the proposed Konza Technopolis City to the surrounding hinterland within Makueni County.	52.4	1.43	100			60%	40%			-	-	-	-	-	74,551,290
AUC002	Preparation and approval of detailed urban plans for the municipalities of Wote, Kibwezi, Makindu-Kiboko and Emali.	31.23	1.43	100				70%	30%			-	-	-	-	44,432,000
AUC003	Preparation and approval of detailed urban plans for the towns of Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni.	6.21	1.43	100			90%	10%			-	-	-	-	-	8,835,800
AUC004	Preparation and approval of detailed urban plans for the urban centers of Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni	5.4	1.43	100				100%		-	-	-	-	-	-	8,228,900
AUC005	Branding of Tier 1, 2, 3 and 4 urban areas within the County	11 No	4	80	20				30%	40%	30%		-	-	-	44,000,000
AUC006	Undertake the planning of all the towns along the A109 and B7	36.6	1.43	100				50%	50%							

	highways (Mito Andei, Maikuu, Kibwezi, Makindu, Kiboko, Simba, Emali, Sultan Hamud, Salama, Konza, Kaulini, Kiaoni).																52,072,000
	Procurement and Selection of Consultants; funds			Project Implementation							Project Evaluation and Monitoring						



7.3.2. **Water, Sewer & Solid Waste Management Infrastructure**

Water, Sewer & Solid Waste Management Infrastructure

DFC>97H #	DFC>97H .	EHM	IBH	D<5G9		D<5G9 %					D<5G9 &					5 DDFCL=A5H9 7 CGH'fB'?9G'L	
				% fl L'	& fl L'	8\$% # 8\$8\$	8\$8\$# 8\$8%	8\$8%# 8\$8&	8\$8&# 8\$8'	8\$8' # 8\$8(	8\$8(# 8\$8)	8\$8* # 8\$8+	8\$8+# 8\$8,	8\$8, # 8\$8-	8\$8- # 8\$8'		
WSS001	Preparation of a water and sanitation sector master plan for the entire County.	1	Mln	20	80					20%	40%	40%					55,000,000
WSS002	Completion of the construction of proposed dams at Kwa-ndundu, Mbumbuni and Mutalani.	3	Mln	100				60%	40%								48,000,000
	Procurement and Selection of Consultants; funds			Project Implementation							Project Evaluation and Monitoring						

Energy & ICT Infrastructure

DFC>97H #	DFC>97H .	EHM	IBH	D<5G9		D<5G9 %					D<5G9 &					5 DDFCL=A5H9 7 CGH'fB'?9G'L	
				% fl L'	& fl L'	8\$% # 8\$8\$	8\$8\$# 8\$8%	8\$8%# 8\$8&	8\$8&# 8\$8'	8\$8' # 8\$8(8\$8(# 8\$8)	8\$8* # 8\$8+	8\$8+# 8\$8,	8\$8, # 8\$8-	8\$8- # 8\$8'		
EII001	Preparation of an energy sector master plan for the entire County.	8,000 Km ²	Mln	90	10			80%	20%								19,935,000

EI002	Development of biogas in areas Kavuko and Kilome).	2No	6.83	100			90%	10%			-	-	-	-	-	13,660,000	
EI003	Development of an ICT sector master plan for the entire County	1No	34.78	100				30%	70%			-	-	-	-	34,782,000	
EI004	Construction an ICT hub in Wote for promotion of innovation	1No	103	100					40%	60%			-	-	-	103,000,000	
EI005	Establishment of a large-scale wind power generation farm at the Kilungu Hills.	1No	391.4	80	20			10%	40%	30%	20%				-	391,400,000	
EI005	Developing a comprehensive Geographical Information System (GIS) based database on land information.	1No	33.855	100				70%	30%						-	33,855,000	
		Procurement and Selection of Consultants; funds				Project Implementation						Project Evaluation and Monitoring					
																	

Social Infrastructure (Health, Security & Education)

DFC>97H' -B'	DFC>97H'	EHM	IBH'	D<5G9'		D<5G9' %					D<5G9' &'					5 DDFCL-A 5 H9' 7 CGH'fB' ?9 G'L'
		No	Mln	% fl £'	&' fl £'	&\$% # &\$&\$'	&\$&\$# &\$&%'	&\$&?# &\$&&'	&\$&&# &\$&'	&\$&' # &\$&('	&\$&(# &\$&)	&\$&? # &\$&+	&\$&+# &\$&,'	&\$&, # &\$&-'	&\$&- # &\$&' \$	
SI001	Establishment of adult literacy centers in all Tier 1, 2, 3 and 4 urban centers (Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni, Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni and Mumbuni).	25	7.8	80	20			10%	40%	30%	20%				-	195,550,000
SI002	Establishment of a public boarding school for visually, hearing and speech impaired children in Wote	1	36	100				50%	50%						-	36,000,000
SI003	Establishment of a mental unit in Mukuyuni, Kaumoni and Makindu.	3	54	100			30%	40%	30%						-	162,000,000
SI004	Establishment of a medical training university at Kibwezi.	1	6.7B	50	50				10%	40%	30%	20%				6,707,360,000

SI005	Establishment of gender-based violence recovery centers in all sub-county headquarters (Nunguni, Kathonzweni, Malili, Tawa, Makindu and Kambu) in addition to the newly opened one at Wote	6	54	20	80					10%	30%	40%	20%			324,000,000
SI007	Establishment of a public home for orphans and rehabilitation of street children in Wote	1	24	100				50%	50%			-	-	-	-	24,000,000
SI008	Construction of a medical trauma hospital at Enzai (Kilome sub-county)	1	187	20	80				10%	20%	20%	30%	20%			187,000,00
SI009	Establishment of elderly care centres at Uliinzi, Nguu, Kitise, Tawa, Mukaa and Komboyoo	6	30	70	30			20%	30%	30%	20%			-	-	180,000,000
SI010	Establishment of a public home for orphans and rehabilitation of street children in Emali.	1	30		100	20%	50%	30%				-	-	-	-	30,000,000
SI011	Upgrading/ Construction of fully-fledged police stations in all Tier 1, 2 and 3 urban areas (Konza, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-).	7	50	80	20			30%	50%	20%				-	-	350,000,000
SI012	Development of fully-fledged police posts in all Tier 4 urban areas (Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni).	12	50	80	20			30%	50%	20%				-	-	600,000,000
	Procurement and Selection of Consultants; funds	Project Implementation						Project Evaluation and Monitoring								

Recreational Infrastructure

DFC>97H	DFC>97H	EHM	l bjh 7 cgh	D<5 G9		D<5 G9 %					D<5 G9 &					5 DDFCL=A 5 H9 7 CGH fHB ? 9 G'L
		No.	Mln	% fl L	& fl L	&&% # &&&&	&&&&# &&&&	&&&&# &&&&	&&&&# &&&&	&&&& # &&&&	&&&& (# &&&&	&&&& # &&&&	&&&&+ # &&&&	&&&& # &&&&	&&&& # &&&&	
RI001	Construction of stadiums (proposed stadium at Ngakaa in Makindu	2	900	20	80			10%	20%	30%	20%	10%	10%			1,905,500,000

RI002	Establishment of talent and innovation centers at (Konza								20%	15%	15%	30%	20%			
RI002	, Wote, Kibwezi, Makindu-Kiboko, Emali, Mtito Andei-Kambu, Sultan, Kasikeu, Kikima, Tawa, Kathonzweni, Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni and Mumbuni).	24	12	100											-	288,000,000
RI003	Construction of a railway history museum at Makindu (on the lunatic express and the SGR).	1	144	100			30%	50%	20%				-	-	-	144,000,000
	Procurement and Selection of Consultants; funds	Project Implementation						Project Evaluation and Monitoring								

7.3.3. Highway Construction and Rehabilitation Works

DFC>97H \$	DFC>97H	EHM	IBH 7cgh	D<5G9		D<5G9%					D<5G9&					5DDFCL-A5H9 7CGHfB'9GL
				% fl £	& fl £	8\$%# 8\$8\$	8\$8\$# 8\$8\$	8\$8\$# 8\$8\$	8\$8\$# 8\$8\$	8\$8\$# 8\$8\$	8\$8\$# 8\$8\$	8\$8\$# 8\$8\$	8\$8\$# 8\$8\$	8\$8\$# 8\$8\$		
Ti001	Tarmacking of Emali-Kalamba-Ukia road	41.24	35	80	20				30%	50%	20%			-	-	1,443,400,000
Ti002	Tarmacking of Salama-Kiu road.	13.68	35		100						50%	50%			-	478,800,000
Ti003	Completion of the tarmacking of Sultan Hamud-Kasikeu-Nunguni road.	30	35	20	80					40%	30%	30%		-	-	1,050,000,000
Ti004	Tarmacking of Salama-Nunguni-Kola road.	33.45	35	80	20				30%	50%	20%			-	-	1,170,750,000
Ti005	Tarmacking of Wote-Katangini-Kalawa road.	29.6	35	80	20			30%	30%	20%	20%			-	-	1,036,000,000
Ti006	Tarmacking of Kibwezi-Masongaleni-Ulilanzi-Athi Salama road	106	35	50	50			10%	20%	20%	30%	20%		-	-	3,710,000,000
Ti007	Levelling and murraming of the Mtito Andei-Manzui road (tourism road).	23	15	100				40%	30%	30%				-	-	345,000,000
Ti008	Performance based road maintenance contracting (PBC) for	40	35	80	20				20%	20%	30%	30%		-	-	1,400,000,000

	the B60 Katumani-Ukia-Wote road (Kola-Wote)															
T1009	Performance based road maintenance contracting (PBC) for the A8 Mombasa road	189	35	50	50			10%	20%	20%	30%	20%			-	6,615,000,000
T1010	Completion of the ongoing upgrading of the A9/B64 (Kibwezi-Kitui road) to bitumen standards (Kibwezi-Athi Bridge:	27	35	80	20				40%	30%	30%			-	-	945,000,000
T1011	Periodic maintenance of the B60 Wote-Makindu	70	14.5	50	50			10%	20%	30%	20%	10%	10%		-	1,015,000,000
	Procurement and Selection of Consultants; funds	Project Implementation					Project Evaluation and Monitoring									

7.3.4. 7 cbgYfj U]cb'GfUH[m

DFC>97 H' -8'	DFC>97 H'	EHM	I B#H' 7 CGH'	D<5 G9'		D<5 G9' %					D<5 G9' &					5 DDF CL-A 5 H9' 7 CGH'f#B' ? 9 G'L'
				% fl L'	& fl L'	8\$% # 8\$8\$'	8\$8\$# 8\$8%'	8\$8%# 8\$8&'	8\$8&# 8\$8' '	8\$8' # 8\$8('	8\$8(# 8\$8)'	8\$8* # 8\$8+'	8\$8+ # 8\$8, '	8\$8, # 8\$8- '	8\$8- # 8\$8' \$	
		No	Mln					70%	30%							
CS001	Preparation of forest management plans for all gazetted forests.	1	55	100							-	-	-	-	-	55,000,000
	Procurement and Selection of Consultants; funds	Project Implementation					Project Evaluation and Monitoring									

7.3.5. Hci f]ga / '< Yf]H[Y'GfUH[m

DFC>97 H' -8'	DFC>97 H'	EHM	I B#H'	D<5 G9'		D<5 G9' %					D<5 G9' &					5 DDF CL-A 5 H9' 7 CGH'f#B' ? 9 G'L'
				D<5 G9' %fl L'	D<5 G9' &fl L'	8\$% # 8\$8\$'	8\$8\$# 8\$8%'	8\$8%# 8\$8&'	8\$8&# 8\$8' '	8\$8' # 8\$8('	8\$8(# 8\$8)'	8\$8* # 8\$8+'	8\$8+ # 8\$8, '	8\$8, # 8\$8- '	8\$8- # 8\$8' \$	
		No	Mln													
TH001	Establishment of museum of Makueni and the Akamba	2	88	20	80					40%	30%	30%			-	176,000,000

	history and a cultural centre in Makindu center															
TH002	Establishment of large-scale handicraft centres in Makindu and Mtito Andei towns	3	54	100		60%	20%	20%			-	-	-	-	-	162,000,000
	Procurement and Selection of Consultants; funds	Project Implementation						Project Evaluation and Monitoring								

7.3.6. Investment Projects with a Yields of 8% and Above

DFC-97H #	DFC-97H Description	EHM No.	IBH Mln	D<5G9		D<5G9 %					D<5G9 &					5DDFCL-A5H9 7CGHfIB?9G'L
				D<5G9 %fl L	D<5G9 &fl L	8\$% # 8\$8\$	8\$8\$# 8\$8%	8\$8\$# 8\$8%	8\$8\$# 8\$8%	8\$8\$ # 8\$8%	8\$8\$ # 8\$8%	8\$8\$ # 8\$8%	8\$8\$ # 8\$8%	8\$8\$ # 8\$8%	8\$8\$ # 8\$8%	
ICD001	Establishment of fruit collection and market centers at Itangini, Kalamba, Tawa, Mbuvo, Emali, Kibwezi.	6	20	20	80					40%	30%	30%		-	-	120,000,000
ICD002	Establishment of livestock yards in every lowland ward center (Mtito Andei, Kambu, Masongaleni, Komboyoo, Maikuu, Kalulini and Kibwezi).	7	10	100		50%	30%	20%			-	-	-	-	-	70,000,000
ICD003	Construction of modern abattoir and hides and skin collection centres at Kikima, Mbuvo, Ulilinzi, Itangini, Komboyoo.	5	13		100						50%	50%		-	-	65,000,000
ICD004	Construction of a large-scale tannery and a meat processing plant at Kibwezi	2	600	50	50			10%	20%	30%	20%	10%	10%		-	1,200,000,000
ICD005	Establishment of milk collection centers in Nunguni, Mbumbuni, Kathonzweni, Kikima, Kola, Kilala, Kibwezi, Kasikeu and Masongaleni	9	10	10	90					30%	40%	30%		-	-	90,000,000
ICD006	Establishment of a milk cooling plant in Kikima.	1000 Litres	111.6	100			40%	30%	30%			-	-	-	-	111,610,800

ICD007	Construction of tannery processing industries in Kibwezi	1	1.9B	50	50			10%	30%	20%	10%	30%			-	1,900,000,000
ICD008	Construction of honey processing industries in Kibwezi	1	1.2B	50	50			10%	20%	30%	10%	30%			-	1,200,000,000
ICD009	Establishment of jua-kali industry in Masongaleni, Kalulini, Kiaoni, Kisingo, Kiboko, Salama, Mbuvo, Kalamba, Itangini, Kalawa, Nunguni, Mumbuni urban centers.	12	6		100		30%	40%	30%		-	-	-	-	-	72,000,000
ICD010	Establishment of a ceramics industry (using kaolin) at Nunguni.	1	52	100			50%	50%			-	-	-	-	-	52,000,000
	Procurement and Selection of Consultants; funds	Project Implementation						Project Evaluation and Monitoring								

7.4. Summary of Capital Investment Costs

7.4.1. Summary of Capital Investment Costs

Bc	G97 HCF	HCH5 @5 DDF CL= A 5 H9 '7 CGH'D< 5 G9 '% fP g\ gk'	HCH5 @5 DDF CL= A 5 H9 '7 CGH D< 5 G9 '& fP g\ gk'
%	Human Settlement Plans	186,819,090	44000000
&	Transport Infrastructure	11021120000	8,187,830,000
'	Social Infrastructure (Health and Education	4720320000	4075590000
(	Energy and ICT Infrastructure	516,358,500	80273500
)	Water, Sewer, Solid Waste Management	11000000	92000000
*	Recreational Infrastructure	813100000	1524400000
+	Industrial and Commercial Infrastructure	2416610800	2,464,000,000
,	Tourism and Heritage Strategy	197200000	140800000
-	Conservation Strategy	55,000,000	

7.4.2. Gi a a UmicZ7 Ud]HU` ÷bj Ygha Ybh7 cglg`DYf`D\ UgY`

Bc"	D<5 G9`	5 ACI BH`
%	Phase One (2019/2020-2023/2024)	19,937,528,390
&	Phase Two (2024/2025-2029/2030)	16,608,893,500

7.5. Costing Criteria

Tarmac Roads

The Government provision is budgeted at 35M per Km for County roads under the JICA Cost estimation manual for construction and road maintenance. With 100mm-250mm of sub-base, 70-150mm of Base Course, 50-100mm of Binder Course and 20-40mm of surface course and should include kerb restraint and concrete bed & haunch.

Terraces

Ministry of Agriculture and natural resources Natural Resource Management Directorate through 'A Field Guideline on Bench Terrace Design and Construction' provides a detailed costing of construction terraces by dividing the area in HA with the output per person and multiply with the wage per person per date.

$$\frac{\text{Location Measurement (HA)} * \text{Wage Per person per day}}{\text{Output per person per day}}$$

Pedestrian Walkways

The costs per kilometer of the pedestrian walkways are estimated using upgrading estimates generated in selected settlements under KISIP.

It is assumed that the pedestrian walkways will be constructed out of concrete paving blocks and the motorcycle lanes out of tarmac. It is assumed that the pedestrian walkways and the motorcycle lanes are 4meters wide for costing.

Boda Boda Sheds

It is assumed that the cost of construction of a boda boda shed will be similar to averages obtained from various CIDPs in Kenya for similar projects.

Markets

It is assumed that each market will have 300 stalls for costing purposes. It is assumed that each stall will measure 2m by 1.5m by 6m in size.

Juakali Shed

It is assumed that each juakali shed will measure 5m by 6m by 6m in size. It is assumed that 20% of plot size will be used for circulation (with every 9000m² of circulation being equal to 1km of road). It is assumed that 20% of plot size will be used for utilities (68751.4m²).

Water Reticulation System

The costs per linear meter of water line are estimated using upgrading estimates generated in selected settlements under KISIP. The final actual costs will be dependent on refined

designs and feasibility studies. The costs of construction of a water reticulation system are assumed to include costs of construction of both treatment and distribution infrastructure.

Multi-Purpose Dams

The costs are estimated assuming that each dam is a valley dam, 5000m³ in volume, constructed using a crawler). The final actual costs will be dependent on refined designs and feasibility studies.

Bus Parks

The costing of this was based on the 'Construction of Ngong' Bus Terminus in Kajiado County of Nairobi Metropolitan Region' funded by the Ministry of Transport, Infrastructure, Housing and Urban Development. The design for the construction works include upgrading the park paving to concrete and bitumen standards for use by public transport vehicles. The works are located in Ngong' Township in Kajiado County. The project covers a total area of approximately 4,422 square meters, (67,968 by 66,474 mm) square meters on approximately 0.85 Ha of land, that is on the current bus terminus Ngong' Town.

Water Projects

This was based on the Rift Valley sanitation program funded by African Development Fund, where the Development of Olobanita well field with capacity of 15,000 m³/day; Rehabilitation of existing sources to restore capacity from 30,000 to 40,000m³/day, rehabilitation of water distribution, sewerage and storm water drainage systems; reduction of unaccounted for water and water wastage; provision of 15000 consumer meters.

The costs per linear meter of sewerage line are estimated using upgrading estimates generated in selected settlements under KISIP.

The costs of construction of a treatment plant per liter of water treated daily are estimated using project costs of similar plant constructed by Nestle Kenya

Ecde Facilities

A typical classroom unit accepted by the Kenyan Government is 6M*8M (20ft * 30ft). The Ministry of Education commits to build a classroom at roughly \$7,000, approximately Seven Hundred and Twenty-One Kenyan Shillings per classroom

Land Acquisition

In 2015, the County Government purchased land in Bungoma Town for a cost of Kshs 5.1 Million per acre according to the Annual CBIRR FY 2015-16. This was used as the base for land acquisition costs.

Setting Up of a GISLab

This will include purchase of 4 High-end laptops, 4 high-end desktops, 4 Uninterrupted Power Supply (750VA), 1 A3 Printer, 1 mini-server (Dell PowerEdge Gen9 R230), 3 GPS, 1 Projector (3200 Lumens), Microsoft Office operating system and GIS software (ArchGIS, AutoCAD, LisCAD and ArchCAD). The prices are based on Esri Eastern Africa market rates. The hardware rates are current prevailing market prices. The USD rate is assumed to be Kshs. 103.

Bridge

Kenya Urban Roads Authority awarded contract to Frontier Engineering Limited to construct a Construction of a Flyover Bridge across the Northern Bypass and Approaches at Kahawa West at cost of Kshs. 403,440,924.00 for 2 KM. It assumed that the County Government will retain the same standards when constructing bridges.

Cabros

The cost of an 80mm thick cabro is Kshs. 1200 per square meter which is recommended for light duty roads such as driveways, car parks. This is the prevailing market rate

Upgrading and Maintenance of Roads

Kenya Urban Roads Authority awarded contract to Magic Industries Limited for upgrading and maintaining of Maintenance of Kapenguria Township Roads in West Pokot County at cost of Kshs. 178,863,602.76 for 12 KM hence 14.9 per Kilometer. It assumed that the County Government will retain the same standards when constructing bridges.

Upgrading Hospitals

The Constitution, under Article 187, envisages and provides for transfer of functions and powers between levels of government. In 2018, the Senate recommended to the president in achieving the agenda four on Universal Health Coverage the need to come up with 10 referral hospitals. If the bill becomes law, the conditional grant of 4.2 billion will be channeled to the facilities through County Governments at a cost of approximately 389 Million to upgrade to Level 5 per hospital.

Level 5 hospitals will have the following; Accident and Emergency Department, Specialists clinics (ENT, Surgery etc.), Comprehensive Care Centre (CCC), Rehabilitative clinics, All Wards, Laboratory, Sterilization Department, Administration Department, Health Management Information System, Maintenance/Medical engineering unit, Environmental Health Department (or housekeeping, or hospital sanitation department) and Theatre.

Level 4 hospitals will have the following; Out Patient Department, Ear Nose Throat(ENT) Unit, Maternal Child Health (MCH), Family Planning (FP), A/E Unit accident and Emergency, Ophthalmology unit, Comprehensive Care Centre (CCC), Physiotherapy Unit, Occupational Health, Orthopedic Unit, Laboratory, Sterilization Unit, Administration, HMIS office, Maintenance/Medical engineering Unit and Environmental Health Unit(or housekeeping, or hospital sanitation Unit).

Revitalizing Technical Institute

This will include equipping the library and laboratories, construction of modern classrooms and revamping the existing structures.

Street Lights

Based on the Adopt a Light 2018 Annual Report, the cost of street lighting will be estimated as depicted below;

CODE AAL 001	
SIZE	900 MM X 1225 MM
PRINT	REFLECTIVE
STREET LIGHT POLES SINGLE	Kshs 90,000.00 per pole
STREET LIGHT POLES DOUBLE	Kshs 105,000.00 per pole
CODE AAL 002	
SIZE	1000 MM X 2000 MM
PRINT	REFLECTIVE
STREET LIGHT POLES SINGLE	Kshs 110,000.00 per pole
STREET LIGHT POLES DOUBLE	Kshs 125,000.00 per pole
CODE AAL 003	
SIZE	1000 MM X 2000 MM
PRINT	BACKLIT
STREET LIGHT POLES SINGLE	Kshs 120,000.00 per pole
STREET LIGHT POLES DOUBLE	Kshs 135,000.00 per pole
CODE AAL 004	
SIZE	1000 MM X 2000 MM
PRINT	REFLECTIVE
STREET LIGHT POLES SINGLE	Kshs 135,000.00 per pole
STREET LIGHT POLES DOUBLE	Kshs 150,000.00 per pole
CODE AAL 005	
SIZE	1500 MM X 2000 MM
PRINT	BACKLIT
STREET LIGHT POLES SINGLE	Kshs 155,000.00 per pole
STREET LIGHT POLES DOUBLE	Kshs 170,000.00 per pole
CODE AAL 006	
SIZE	1500 MM X 3000 MM
PRINT	BACKLIT
THIKA ROADMAST SINGLE	Kshs 400,000.00 per mast
THIKA ROADMAST DOUBLE	Kshs 800,000.00 per mast

Preparation of Urban Plan

In 2015, Ministry of Lands and Physical Planning awarded the preparation of an Urban Development Plan for a cost of 54Million, the Coverage of this town was 445.9 Km². This project was used as a base for tabulation. Inflation rates were taken into consideration; 2016= 6.35%, 2017=4.5% and 2018= 5.71%.

Water and Sanitation Master Plan

The cost was derived from the Environment, Water and Sanitation Sector Medium Term Plan (2018-2022). Assuming the plan takes shape of Water Resource Management Programmes

Construction of Hydro-Power Dams

The World Bank regulations under World Commission for Water provides that a hydropower dam will provide a minimum of 10, 720MW, is 34M high with at least 450km² reservoir.

Construction of Multi-Purpose Dams

The costs are estimated assuming that each dam is a valley dam, 5000m³ in volume, constructed using a crawler). The final actual costs will be dependent on refined designs and feasibility studies.

Energy Sector Plan

According to Combined - Energy Sector Transformation Initiative, a World Bank guideline on the Preparation of Energy Sector Master Plan. On average a master plan will cover an area of 6, 200Km² and will on average cost, \$150,000.

Bio-Gas

A study by ETC UK, in collaboration with ETC Energy, ETC East Africa, and IT Power, Nairobi showed that it will cost KUSCO Members \$14,300 to construct a digester fixed dome of 1600 m³. A commercial digester fixed dome is 27,500 M³.

ICT Sector Master Plan

The County Government of Meru (6,936 km²) prepared an ICT Footprint for the entire County (2015-2020). We assume this plan will take the same design in collaboration with ICT Authority and Ministry of Information, Communication and Technology.

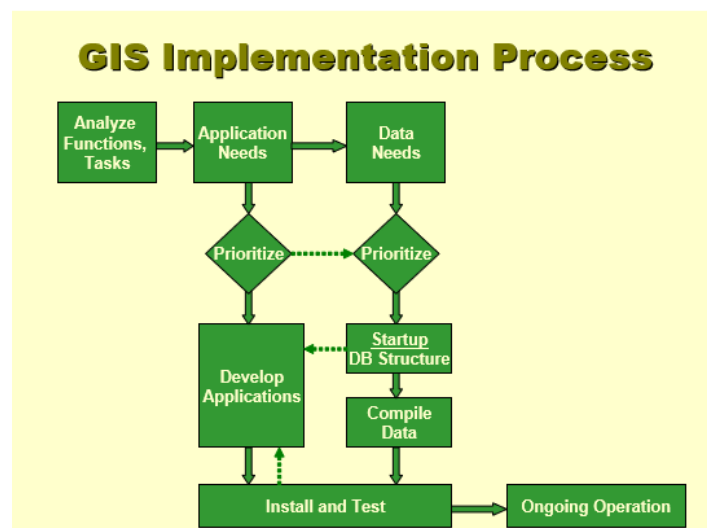
ICT Innovation Hub

Ihub Research on the unique factors that make up ICT Hub models across Africa. It recommends Hive Colab in Kampala, Uganda has the best and unique Model in Africa. The hub was set at \$1M including financing of the first batch of developments.

Wind Power

During 2000-2002, the average turbine price in the United States was at its lowest, at around USD 800/kW and peaked at around USD 2 000 to 2 100/kW in 2008, (Wiser and Bollinger, 2017). In Europe, average prices peaked at around USD 1 900/kW for contracts signed in 2008/2009 (BNEF, 2017. Kilungu will be assumed to produce 2000 Mw

Development of GIS



The development of a Information System (GIS) based database on land information is assumed to take this above procedure, the Ministry of Lands and Physical Planning LIS is used as the base.

Adult Literacy Centres

In 2015, a blue print for adult literacy program and funders was development by Literact Assistance Centre. The cost covers only cost of construction, does not cover the cost of hiring tutors and program managers and purchase of education materials

Medical School

This assumes a building of 160,000 gross square feet, constructed and furnished at a cost of \$407 per square foot.

Construction of Stadiums

Stadiums in Kenya are to receive a major boost after reports that the Kenyan government has set aside US\$ 18.5m in the 2015/2016 financial year.

Cables Cars

A typical two-kilometer line might cost £5.1 million, experts at a 2012 urban transport conference in Ethiopia estimated.

Cooling Plant

Costs of a 1 000-litre milk cooling system operated with wind power		
	Ice-bank with 2 kW single-phase electricity	DX with x 4 kW single-phase electricity
Wind turbine	5 kW/single-phase AC	5 kW/single-phase AC
Energy storage – LABs	2 500 Ah	1 400 Ah
	Cost (US\$)	Costs (US\$)
5kW/single-phase AC wind turbine, off-grid controller, off-grid inverter, DC/AC inverter, 12-m monopole tower, cabling and installation	16 120	16 120
LABs (ice bank with 16 x 200 Ah/12 v; DX with 12 x 200 Ah/12 v) plus 20% for safety factor and system efficiency	4 800	3 600
Total	20 920	19 720
Backup genset	3 600	4 500
Ice bank milk cooling tank	6 600	
DX milk cooling tank		5 500
Total cost wind turbine/ice bank with backup generator, excluding battery replacement	31 120	–
Total cost wind turbine/DX with backup generator, excluding battery replacement	–	29 720
Battery replacement every 4–5 years ^a	35 920	33 320
With national grid electrical power supply and no wind turbine system	–	–
Total cost with backup generator	10 200	10 000

Chapter 8: Monitoring & Evaluation

8.1. Purpose and Scope of the M&E Framework

8.1.1. Why is M&E important for the CSP?

One of the failures of the planning system in Kenya is that whereas elaborate planning processes culminate in the successful formulation of desirable outcomes, plans are either never implemented or implementation modalities are not robust enough to deliver desired outcomes. Significantly however, implementation processes fail to integrate a feedback mechanism in which the progress towards realization of plan or programme objectives is monitored. Such monitoring is essential to enable plan implementers to promptly institute remedial measures where progress is lacking. To avoid suffering the same fate, the Makueni CSP integrates an elaborate Monitoring and Evaluation framework as a basis for adaptive management of the implementation process and continuous measurement of progress with respect to plan objectives, and against adopted indicators.

As a type plan, a County Spatial Plan (CSP) concerns itself with the agency of territorial space(s) and spatial structures (land and landed resources, landscapes, networks of infrastructure, patterns of settlement and economy) relative to the County's declared development goals. The plan provides a spatial template to effectively anchor and integrate all developmental initiatives of the County Government, while facilitating the people's day to day socio-economic pursuits. In addition to this broad goal, the plan has numerous specific objectives as listed in the introduction. It is these goal and objectives that outline the substantive scope for the M&E framework. Essentially, the M&E must address itself to the efficacy of the adopted spatial template and associated sectoral programme of actions, to deliver the collective vision of Makueni people.

8.1.2. What are the objectives of the M&E Framework for the CSP?

The M&E Framework for the CSP has the following objectives;

1. Establishing **implementation status** and assess **delivery of expected accomplishments**,
2. Establishing key **hindrances** and **facilitators of success** in the implementation process,
3. Identifying **“correctional” actions** as necessary and inform subsequent design of an effective intervention strategy.

8.2. Evaluation Approach and Design

8.2.1. How is the M&E Framework designed?

The M&E design integrates the following critical steps;

Step 1: Identify Objectives and key result areas of the County Spatial Plan - the objectives of the Spatial Plan should be measurable to the extent possible.

GHYd`& Identify management action(s) for each objective - each objective must have at least one related management action – the M&E will be evaluating the effectiveness of the management action.

GHYd`' . Outline the key evaluation and monitoring questions that help answer whether the CSP outcomes and processes are in line with its intended objectives. Questions may include;

- a). Was the CSP implemented as planned?
- b). Did County residents benefit from measures implemented?
- c). Was the delivery of the CSP cost-effective? Did it provide value for money?
- d). Can improved economic, environmental or social outcomes be attributed to the CSP's efforts?
- e). Which CSP measures were more and which less effective?
- f). Can the CSP measures be transferred or scaled up?

GHYd` (. Identify performance indicators and targets – create a long list of outcomes, intermediate, output and input indicators for the County to choose from to monitor Success against objectives as well as progress of implementation. Core vs additional indicators are suggested as well as advice provided for suitability of indicators for different situations and for a measurement plan (sources, method, timing / regularity).

GHYd`) . Establish a baseline for selected indicators.

GHYd`* . Monitor the Selected Indicators - the selected indicators are monitored on a regular and continuing basis.

GHYd` + . Analyze, evaluate, and interpret the monitoring data - the monitoring data has to be analyzed, evaluated, and interpreted periodically.

GHYd` , . Communicate results of evaluation to decision makers and stakeholders.

GHYd` - . Use the Results of M&E to adapt the County Spatial Plan in the next cycle of CSP formulation - the results of the evaluation are used to modify objectives and/or the management actions in the next round of marine spatial planning.

8.2.2. ?YmiFYgi `h5fYUg`

The vision informing the Makueni CSP, as communicated in the catchphrase “*To Make Every Acre Count*”, seeks to improve the quality of life of Makueni residents by taking advantage of the County’s strategic setting, exploiting possibilities presented by existing infrastructural endowments, harnessing the latent potential and best use of land, appropriating the value of landed resources, and leveraging on the people’s exhibited ingenuity and resourcefulness. The vision is in turn actualized in terms relevant key areas of concern to the people of Makueni, and which shall form the key focus of the M&E as follows;

1. Protection and *Conservation* of the Environment,
2. Development and *optimization* of Land potential,
3. *Sustainable exploitation* of natural resources,

4. *Diversification* of agricultural produce, adoption of *sustainable and economically viable* farming practices and techniques and, improved marketing of produce and enhancement of *value addition* industrialization,
5. Development of the County's tourism *potential*,
6. *Improvement* of road accesses,
7. *Expansion* of infrastructure service grids and supply of services,
8. *Equitable and convenient distribution* of social facilities and services,
9. *Planning* of urban centers, improvement of services and security,
10. Development of *disability and disaster response* facilities and infrastructures.

8.2.3. 9j Ui Ujcb'7 f]hf]U

The adopted M&E approach shall rely on five major evaluation criteria, namely;

1. Assessing the **relevance** and appropriateness of planned measures,
2. Assessing the **efficiency** of the implementation strategies and processes,
3. Establishing the **effectiveness** of adopted strategies,
4. Ascertaining the **performance, impact, influence, and reach** of outcomes,
5. Establish the **sustainability** and **replicability** of results.

8.2.4. bX]WUc'fg'

For monitoring and evaluation to be successful, clear objectives, responsibilities, timelines and procedures need to be set up beforehand by the planning authority to handle any problems that have been identified. The M&E process will rely on indicators relevant to the plan's objectives. Different categories of indicators are to be selected as follows;

1. **Outcome Indicators** measure the actual impacts for the CSP objectives (e.g. *how much additional land is under forest cover*);
2. **Intermediate outcome** indicators of instruments describe changes in new systems and can be related to the success of strategies. This category includes indicators for measuring the system performance of new infrastructural technologies (e.g. the uptake of clean energy technologies on climate change).
3. **Output Indicators** measure the extent to which policy instruments have been implemented and services improved (e.g. km roads upgraded).
4. **Input indicators** provide information on the amount of resources required for delivering the plan, including cost. These indicators should be included to provide transparency on the plan implementation and allow an evaluation of the resource effectiveness.
5. **Contextual indicators** provide information on external developments that have an influence on the successful implementation of CSP measures, e.g. external economic developments or national policy developments.

The implementation matrix shall serve as the source of indicators and targets for the M&E process. An indicative performance evaluation matrix is as indicated in table 8.1 below.

HU'Y', '%: bX]WUj Y'DYzfa UbW'Acb]hcf]b['UbX'9j Ui Uh'cb'a Uf]l'

	? YmFYgi `h 5 fYUg`	Ci Hw'a Y'CV'YWj Y'	Dfc[fUa a Y'	bX]WU'c'fg`	6 UgY]bY'	A]X! hYfa `h hUf[Yh	9bX! hYfa `h hUf[Yh	7 i a i `Uhj Y' FYgi `h
1.	Environment & Natural resources	Protection and Conservation of the Environment	Afforestation	Additional Acreage of forested area				
			Demarcation & Gazettment of wetlands	No of wetlands gazetted				
			Protection of wildlife habitats	No of wildlife parks established				
2.	Agriculture	Optimization of Land potential	Land consolidation for enhanced viability	No of consolidated schemes realized				
			Promotion of Irrigation	Additional Acreage under irrigation				
		Enhanced productivity and profitability of Agriculture	Diversification of agricultural produce	No of new crops introduced				
			Adoption of sustainable farming practices	Acreage of land under terracing				
			Improved marketing of produce	No of produce markets constructed				
			Value addition industrialization	No of agro-processing industries established				
3.	Transportation	Improvement of accesses and connectivity	Upgrading of County roads	No of kilometers of primary accesses roads tarmacked				
				No of kilometers of rural access roads gravelled				

	? YmiFYgi `h 5 fYUg`	Ci Hwta Y`CV`YWhj Y`	Dfc[fUa a Y`	hX]WUcrg`	6 UgY]bY`	A]X! hYfa `h HUF[Yh	9bX! hYfa `h HUF[Yh	7 i a i `Uhj Y` FYgi `h
			Construction of parking facilities for transit vehicles	No of parking bays constructed				
			Improvement of access by air	No of Airstrips rehabilitated				
4.	Infrastructure and Services	Enhanced access to infrastructure services	Extension of water supply grid	No of kilometers of water pipeline				
			Construction of sewage treatment plants in urban centers	No of sewage treatment plants constructed				
			Expansion of electricity supply	No of residents connected to power				
5.	Human Settlements, housing and facilities	Enhanced living environments	Planning of urban centers	No of urban centers planned				
			Clustering of rural settlements	No of rural service clusters established				
			Enhanced access to social facilities and services	No of community centers constructed				
			Enhanced disability and disaster preparedness	No of disaster response and trauma centers established				
			Improvement security	No of police stations established				
6.	Economy	Improvement of household incomes	Expansion of employment opportunities	No of new jobs created				

	YmFYgi`h 5fYUg`	Ci Hta Y`CV`Wnj Y`	Dfc[fUa a Y`	bx]WUc fg`	6 UgY]bY`	A]X! hYfa` HUF[Yh	9bX! hYfa` HUF[Yh	7 i a i`Uhj Y` FYgi`h
		Enhanced economic competitiveness	Expansion of industrial production activities	No of processing industries established				
			Expansion of commercial opportunity	No of markets constructed				
		Development of the County's tourism potential	Expansion of tourism and hospitality infrastructure	No of tourist lodges constructed				
				No of recreational parks established				

Source: Makueni CSP 2019-2029

8.3. Implementation and Management

8.3.1. A/ 9`D\ UgYg`

Evaluation generally happens at the end of planning cycles, but in practice monitoring and evaluation activities will often be carried out in parallel with implementation, e.g. to review intermediate outcomes. The CSP has a 10-year implementation horizon within which three evaluations may be undertaken as follows;

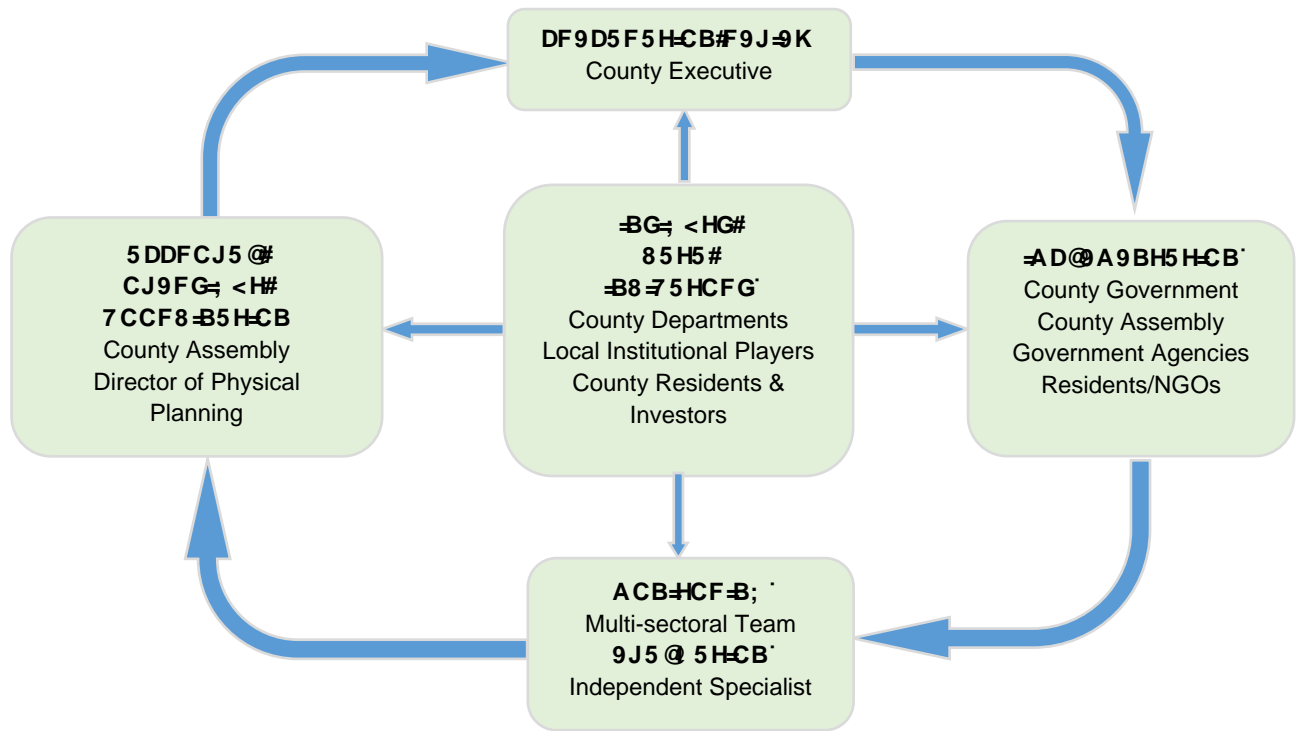
1. **AjX!Hyfa`Yj Ui Ujcb** to coincide with the 5-year threshold stipulated by law to undertake a review,
2. **9bX!Hyfa`Yj Ui Ujcb** which should inform the preparation of the successor plan,
3. If necessary, the County may undertake a **7cbhji ci g`Acblcf]b[** outside of these thresholds, either on a specific aspect of the implementation process, or upon termination of a phase. In each case, the establishment of progress may be a necessary pre-condition for the allocation of resources. Continuous monitoring with routine collection of core data and information should be carried out for the whole CSP implementation phase.

8.3.2. A/ 9`5Wcfg`

It is desirable, in the interest of objectivity, that the major scheduled evaluations are undertaken by an **Yi HyfbU`UbX`jbydybxybh A/ 9`gdYVjU]gh**. In this scenario, it is also crucial to design and implement effective commissioning processes for the procurement of outside expertise, data, data collection technologies or analysis tools. Nonetheless, minor unscheduled evaluations are undertaken by members of the **jb!\ ci gY`a i`h!gYwcfU`hUa** that was responsible for preparing the plan. It is particularly important to involve institutional partners as they will supply the necessary data input into the M&E process.

It is also desirable to involve other players in the M&E process. In a participatory M&E approach, **7GD`ghU_Yl c`XYfg`UbX`h Ydi V]W** can be involved at various steps in the process, e.g. in the setting of objectives and targets, providing indicators for progress, facilitating access to data sources, or reflecting on intermediate and final results. Institutional players in this case, may include members of the County Assembly of Makueni, members of Municipal Management Boards, the National Land Commission, local investors and property owners, and representatives from the local community.

:][i fY'&% 'DUf]WdUrcfmD'Ubb]b['UbX'A/ 9': fUa Yk cf_"



Source: Government of Makueni County, 2019

Annex A: Subcounty Perspectives

Ha Ya Y	=ggi Y	5 fYU	5 gd]fU]cb`
Environment	Destruction of water catchment areas and springs	Kaiti, Kilungu, Ilima, Kee, Kilungu, Ukia, Kilome, Mbooni	Afforestation Soil conservation Fencing of springs
	Deforestation	Kibwezi forest, Mbui Nzau hills, Kilema forest, Nguumo forest and Kaunguni forest, Kasikeu, Kiima kui, Kalanzoni, Salama, Kilome, Upete, Maiani, Mwanyani, Kiongwani, Kilungu, Kilome, Nzueni and Muvau forest, nduni, Mbooni, mukaatini, mulooni, mbuini	Protection of forests Afforestation
	Soil erosion	Kaiti, Kilome, Makueni Mbooni	Promote better soil conservation practices
	Sheet and gully erosion	Silanga, Kathekani, Thange river	Grassing of road shoulders
	Un-controlled sand harvesting	Kambu River, Thange river, Makueni, Kaiti River, Isuuni and thwake rivers	
	Siltation of earth dams	Makueni	Periodic de-silting
	Drought occasioned by unreliable rainfall	Kibwezi East	
	Oil Spillage	Thange river	Rehabilitation of oil pipeline Cleaning of riparian areas
	Denudation of landscapes	Kibwezi east	Land reclamation
Resources	Inadequate water supply	Entire County	Promote water harvesting techniques Sink boreholes
	Unregulated extraction of minerals	Kaiti, Isuuni, Maviameu, Ndumoni, Makongo, Watema, Kilima, Mbui Nzau, kithayoni, Kilungu	regulate extraction of minerals Undertake audit of mineral stock

	Unexplored/unexploited mineral potential	Kaiti, Kilome Kithuki, kwanzuki kaleli	detailed geological surveys to determine mining potential
	Uncontrolled sand harvesting	Entire County	Enforce sand harvesting law
	Wildlife poaching	River Athi	Construct KWS station to combat
	Untapped Solar/Wind energy potential	Makindu, Nguumo, Kikumbulyu North, Nguu/Masumba, Emali/Mulala	Establish solar and wind farms
Land	Incomplete settlement schemes/Lack of title deeds	Thange, Utiithi, Kiboko A,B,C, Kilome Sub-County	Issuance of title deeds,
	Squatters	Mtito Andei, Mikumboni	
	Land grabbing/Encroachment on public land.	Ivingoni Nzambani, Masongaleni, Mtito-Andei, Thange, Kilome	Titling of public purpose land
	Land disputes (unclear boundaries, Historical injustices)	Kimooini, Kiboko A, B and C, Kilome, Makueni	Resolve land disputes/historical injustices Land compensation Undertake cadastral surveys
	Land fragmentation and unsustainable land sizes	Kilome, Kibwezi, Mbooni	Regulate land subdivision
Agriculture	Post-harvest losses of fruit produce	Kaiti, Makueni	Build fruit collection centers
	diminishing agricultural land,	Makindu, Nguumo, Kikumbulyu North, Nguu/Masumba, Emali/Mulala	Protection of agricultural land
	Poor farming practices	Kaiti, Kibwezi west, Kilome	Trainings on best farming practices
	Low volumes of milk produce	Ndolo valley, Kyambeke, Kivani, Kitandi, Makueni	Improve breeds Improved dairy management Pastures and fodder establishment

			Establishment of milk dairy Cooperatives
	Low coffee yields	Kaiti	Construct coffee factory
	Low productivity per acre	Kaiti, Kilome	Provision of extension services Modernization of agriculture
	Poor incomes from agriculture	Kilome	Crop diversification Crop specialization and commercialization Improve marketing of produce
	Low yields of farm produce	Kibwezi	Promote draught –resistant crops Enhance irrigation extension services Commercial production of green grams and cow peas
	Unfavourable climate (low rainfall)	Kilome, Kibwezi west and east, Makueni	Promote production of the adoptable crops Construct earth dams
	Overreliance on rain fed agriculture	Mbooni, Makueni, Kilome	Promote irrigation
	Human wildlife conflict	Athi River, Kitise	Construct KWS station
	Tsetse fly infestation	Kibwezi, Kilome	Bush clearance
Transportation	Poor road conditions	Kaiti, Kilome, Makueni, Kibwezi east and west, Kilome, Mbooni, Maueni	Timely and routine grading and murraming
	Encroachment and blockage of cross roads by kiosk vendors		Cadastral survey and permanent fencing Construct lorry and bus park
	high road accident levels	Kibwezi, Makindu, Emali, Salama	Marking of Road bumps Construct trauma centres
Urbanization	Poor planning	Emali Town, Kibwezi Town	
	Insecurity	Makueni	Street lighting/Floodlights

	Double allocation of plots	Kilome Sub-County	
Tourism	Unexploited tourism potential	Kilungu, Makuli, Mitini kwa Malu, Mwitakii, Makongo, Kaiti river, Ndauni hill, Sinai, Kivani, Guano caves, Mikululo hills, Hunters lodge, Ebony trees, Chyullu National Park, Makindu Mosque, Sikh temple	Documentation and marketing of attraction sites
Infrastructure	Underutilized pasture/hay storage capacity	Kyumani	Promote commercial pasture development supply hay baling machinery
	Weak telecommunication network coverage	Athi River, Kambu and Mtito Andei, Makueni	Construct communication masts
	Low electricity connectivity	Makueni, Kilome, Mbooni	Enhance rural electrification
Social Services	Poor access to health facilities	Kaiti, Kilome, Makueni	Construct additional dispensaries Equip and staff health facilities Increase ambulance services
	High level of Drug Abuse	Kibwezi, Makindu, Emali, Salama	Construct rehabilitation centres
	Inadequate sports facilities	Kaiti	Share school facilities with communities Improvement and routine maintenance of public play grounds
	Poor educational performance	Kee, Kyanduya, Kilome	Establish resource centres Upgrade the and other education Infrastructure
	Insecurity	Ngwata, Kyumani, Yikita	Construct police post
	Inadequate tertiary learning institutions	Kambu, Kyumani, Kibwezi west, Kilome, Makueni	Construct Technical Training Institutes CCTI's

	Lack of disability facilities	Kibwezi west	Construct disabled friendly structures
	Street children	Kibwezi west	Establish street families rehabilitation centres

