



A thorough examination of Open Data Initiatives in East Africa, focusing on how they improve the accessibility of data

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ABSTRACT

Despite the progress made in infrastructure and technology, East Africa, which includes nations such as Kenya, Uganda, Tanzania, Rwanda, Burundi, and South Sudan, nevertheless has difficulties in terms of data accessibility, transparency, and governance. Timely, accurate, and relevant data is essential for sustainable growth, efficient policy creation, and informed decision-making. In the past, the availability and accessibility of data from East Africa have been limited, which has impeded efforts to tackle socioeconomic challenges such as healthcare delivery, environmental sustainability, and poverty reduction. Enhancing the accessibility and transparency of data is crucial for promoting progress and development. This study investigates open data projects in East Africa, specifically analysing their influence, difficulties, and potential advantages. The projects have the goal of making data access more accessible to everyone and promoting innovation. However, they encounter obstacles such as problems with the quality of data, gaps in capability, restrictions imposed by policies, and limitations in finance. Methods to address these challenges including boosting systems for ensuring the quality of data, bolstering efforts to increase capacity, refining regulatory frameworks, and promoting collaboration among stakeholders. Case studies in agriculture, health, and urban planning illustrate the significant influence of open data efforts, which promote socio-economic progress by fostering openness, accountability, innovation, and public empowerment. Nevertheless, obstacles such as data quality, deficiencies in capability, restrictions imposed by policies, and limitations in finance impede the complete realisation of the full potential of open data. We utilised relevant public data from varied and credible databases spanning the years 2004 to 2014. To summarise, open data projects have significant potential to promote sustainable development in East Africa. Stakeholders may harness the revolutionary potential of data by tackling obstacles and seizing favourable circumstances, therefore promoting comprehensive development and innovation for the region's socio-economic progress.

Keywords: East Africa, open data, data accessibility, transparency, accountability, socio-economic development, difficulties, potential.

INTRODUCTION

East Africa, which includes nations such as Kenya, Uganda, Tanzania, Rwanda, Burundi, and South Sudan, is notable for its varied cultures, economy, and developmental obstacles. Although the area has achieved significant advancements in other sectors such as technology and infrastructure, it still faces persistent issues related to data accessibility, information transparency, and regional governance [1]. Access to timely, accurate, and relevant data is crucial for making informed decisions, establishing successful policies, and attaining sustainable development. Nevertheless, in the past, data in East Africa has frequently been organised into separate sections, lacking coherence and accessibility, which has posed challenges for the general public, researchers, and governments [2]. Insufficient data availability impedes endeavours to tackle pressing socio-economic issues such as poverty reduction, healthcare provision, education, and environmental sustainability [3]. There is an increasing recognition in the region of the necessity to enhance the accessibility and transparency of data. This is to recognise the crucial role that data plays in facilitating progress. Data accessibility pertains to the level of convenience with

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which individuals, businesses, and governments may get, utilise, and share data for diverse objectives. Data accessibility is of utmost importance in East Africa for the purpose of making well-informed decisions, ensuring accountability and transparency, encouraging innovation and entrepreneurship, and facilitating social and economic development [4]. Policymakers may make evidence-based choices that are specifically customised to community needs and goals by having access to comprehensive and reliable data. This information is crucial for several sectors, such as the governmental sector, corporate sector, and civil society [5]. Data transparency promotes accountability in political, academic, and other institutions, therefore assuring the efficient and fair distribution of resources. Open data fosters innovation and entrepreneurship by offering important insights and resources to tackle societal issues and provide economic opportunities [6]. The accessibility of data is intricately connected to the advancement of society and economy, as it has the potential to eradicate poverty, enhance livelihoods, and foster inclusive communities by offering valuable information on healthcare, education, agriculture, and infrastructure [3]. In East Africa, enhancing data accessibility is crucial for achieving a fair and effective society. The open data efforts in East African nations are a notable advancement that promotes the proactive disclosure of data by governments, businesses, and institutions in standardised and machine-readable formats [7]. The implementation of open data principles in East Africa has been propelled by emerging technologies, widespread internet connectivity, and an increasing need for accountability and openness. Various parties, such as governments, international organisations, civil society, and the public and commercial sectors, have supported the promotion of open data initiatives and the development of data ecosystems [4]. East African nations have achieved notable advancements in ensuring public access to data, which include the establishment of open data portals, data regulations, and programmes aimed at enhancing capacity-building. Nevertheless, there are still obstacles to overcome in open data projects in the area, including inadequate technological infrastructure, problems with data quality, and legal and regulatory limits. These challenges highlight the importance of focused efforts to enhance the effectiveness of open data initiatives. This article examines open data efforts in East Africa by examining academic research, policy papers, reports, case studies, and grey literature. It employs methodical search methodologies and data coding to offer a thorough comprehension of the present condition, influence, difficulties, and possibilities of the region, interpreting discoveries within a wider framework.

An examination of Open Data Initiatives in East Africa

Open data projects in East Africa are essential for improving the accessibility, openness, and innovation of data. These projects are spearheaded by governments, civil society groups, and the corporate sector, with the aim of promoting the accessibility of data for public use and the generation of value. An example worth mentioning is the Kenya Open Data Initiative (KODI), which offers a centralised platform for accessing datasets in many areas such as agriculture, education, health, finance, and demography [8]. The Uganda Bureau of Statistics (UBOS) Data Portal provides users with access to a diverse array of statistical data and publications pertaining to demographics, economy, and social indices. The objective of the Tanzania Open Data Initiative (TODI) is to facilitate the accessibility and use of government data in order to improve transparency, accountability, and public engagement in Tanzania [9]. The Rwanda Open Data Platform, developed by the Rwandan government, provides access to a diverse array of statistics pertaining to governance, economy, infrastructure, and social development. These programmes have the objective of fostering data-driven decision-making, innovation, and public participation in the region [10]. CSOs in East Africa are essential in advocating for data literacy, open data principles, and social welfare. They collaborate extensively with governments, communities, and stakeholders to advance open data initiatives and tackle data-related challenges [11]. CSOs, or Civil Society Organisations, encompass a variety of groups that work towards specific social goals. One such example is the Open Institute in Kenya, which actively advocates for open data, public involvement, and transparency. They achieve this through initiatives like the Open County Data Portal. Code for Africa is a civic technology group that operates in many African countries, particularly in East Africa. It focuses on using data and technology to empower individuals, media, and governments to make use of data for the benefit of the public. Twaweza, a regional civil society organisation (CSO), promotes public participation, responsibility, and openness, empowering individuals to request a more responsive government and enhanced service provision through research, advocacy, and communication. Open data is becoming widely acknowledged by the commercial sector in East Africa for its ability to stimulate innovation, foster corporate growth, and tackle societal challenges. Companies such as Safaricom, Fenix International, and mPedigree are utilising data to create inventive goods and services, such the M-Pesa mobile money platform. They are also working together with government and non-profit organisations to carry out programmes that have a positive influence on society. Fenix International provides cost-effective solar energy solutions to rural areas in Uganda that lack access to the main power grid. This not only improves customer service but also optimises operational efficiency. mPedigree, a company headquartered in Ghana, use mobile technology and data analytics to address the issue of counterfeit medicines. Their focus is on enhancing healthcare supply chains and guaranteeing the authenticity of pharmaceutical products in Kenya, Uganda, and Tanzania.

Effects of Open Data Initiatives

Open data projects in East Africa can promote beneficial socio-economic development results by enhancing transparency, accountability, innovation, entrepreneurship, and citizen empowerment [6]. The effects of these measures are evident in several sectors and societal levels, leading to inclusive economic expansion, increased governance, and improved quality of life. Open data initiatives play a vital role in advancing socio-economic development by granting access to up-to-date, precise, and pertinent data. These programmes empower policymakers to make well-informed judgements, formulate policies, and effectively allocate resources. They facilitate the implementation of policies that are supported by empirical data, focusing on pressing societal and economic concerns such as decreasing population, improving healthcare provision, reforming education, enhancing agriculture, and developing infrastructure [12]. Open data access enables more effective planning and allocation of resources by governments, development agencies, and other stakeholders. An analysis of socioeconomic indicators, regional distribution, and population demography is crucial for identifying places in need, determining intervention priorities, and efficiently allocating resources. Open data initiatives also facilitate economic planning and investment by offering valuable data for market analysis, corporate strategizing, and investment decision-making. This knowledge promotes entrepreneurship, ingenuity, and the development of novel products and services. Open data projects foster openness and accountability by enhancing visibility into institutional performance, public service delivery, and governance. They empower citizens to get government data and information, enabling them to hold authorities responsible for their actions and insist on openness in decision-making processes. Open data initiatives enhance the credibility of the government, foster confidence between citizens and institutions, and mitigate corruption [13]. Additionally, they promote public scrutiny, feedback, and collaboration, fostering citizen involvement and active participation in governance. Open data initiatives empower individuals to monitor governmental activities, lodge grievances, and engage in discussions about policies, so improving democratic procedures and guaranteeing fair and considerate governmental choices. Open data initiatives also enable the development of accountability systems, such as performance dashboards, social audits, and citizen scorecards, which enable individuals to assess the efficiency of government institutions and hold officials responsible. The unrestricted accessibility of data about budgets, expenditures, and performance indicators improves accountability mechanisms and promotes effective government.

Facilitating Innovation and Entrepreneurship: Open data initiatives offer a plethora of data and resources for the purpose of research, development, and commercialization, hence promoting innovation and entrepreneurship. These initiatives facilitate and encourage economic expansion, the development of entrepreneurial ventures, and the creation of chances for innovation. The primary impacts of open data encompass the utilisation of data-driven solutions, the cultivation of prosperous start-up ecosystems, and the advancement of economic variety. Entrepreneurs have the ability to identify potential opportunities in the market, develop innovative products and services, and deliver benefits to customers, businesses, and communities [14]. Open data efforts facilitate the growth of talent, foster collaboration, and encourage innovative solutions in industries such as e-commerce, banking, healthcare, and agriculture. Moreover, open data initiatives foster economic diversification by enabling the emergence of new industries and business models, hence stimulating entrepreneurship, competition, and innovation across several sectors. This fosters resilience and sustainability by democratising the availability of data and minimising obstacles to entrance.

Open data efforts promote the democratisation of information access, foster civic involvement, and facilitate social inclusion, therefore empowering individuals and society. These programmes empower individuals to actively engage in creating development agendas, making well-informed decisions, and advocating for their rights. The primary impacts of public data on community development and citizen empowerment encompass enhanced access to information, fostering community engagement through platforms for dialogue, collaboration, and critique, and promoting social inclusivity by mitigating information inequalities, empowering marginalised groups, and amplifying diverse perspectives [15]. These projects enhance inclusivity and fairness in development outcomes by ensuring that data is transparent, pertinent, and easily available to all segments of society, without excluding anybody. This empowers individuals to make well-informed choices, ensure transparency and responsibility from those in power, and actively participate in the process of advancing societal goals.

Obstacles and impediments

In East Africa, open data projects face several problems and hurdles that impede their efficacy and impact, despite their potential benefits. These obstacles involve concerns of the quality and standards of data, the need for increasing capacity and addressing skills shortages, the development of legislative and legal frameworks, as well as the limitations of sustainability and finance. To fully capitalise on the advantages of open data and guarantee that data accessibility results in favourable socio-economic results in the area, it is essential to tackle these obstacles [16]. Data quality and standardisation pose substantial obstacles for open data projects in East Africa. Problems such as inaccuracies, lack of information, and inconsistencies can diminish the reliability and use of open data,

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impeding the process of analysing and making informed decisions. The challenges encompassed in this context involve the lack of uniformity in data collecting and validation, the absence of established protocols for validation, and the scarcity of resources allocated for data curation. Lack of sufficient metadata and documentation might provide challenges for users in comprehending the context, scope, and limitations of the data, resulting in inefficiencies and errors in data analysis [17]. Data interoperability is a significant obstacle in East Africa due to the presence of diverse data formats, architectures, and schemas. These variations impede the integration of data and limit the capacity to conduct cross-sectoral analysis and provide valuable insights. The lack of defined data formats and protocols worsens these problems, making it challenging to get valuable insights from open data. In general, these obstacles impede the seamless integration and analysis of open data in East Africa [18]. East Africa's open data projects encounter substantial obstacles as a result of a dearth of proficiency in data administration, analysis, and utilisation, leading to capacity building and skills gap. The absence of specialised knowledge impedes the efficient utilisation of open data for the purposes of innovation and decision-making. The limited understanding and knowledge of data among stakeholders, such as researchers, journalists, politicians, and government representatives, hinders the efficient use of open data for social inclusion, economic growth, and governance [19]. There is a need to make efforts in order to increase people's understanding and awareness of data, in order to encourage a culture where decisions are made based on data. The scarcity of proficient professionals in East Africa, including data scientists, statisticians, and data engineers, intensifies the digital disparity and hinders the implementation of open data initiatives. Restricted availability of technological infrastructure, encompassing gear, software, and internet connections, moreover constrains stakeholders' capacity to effectively use open data. Furthermore, it is essential to enhance the institutional capacity of government agencies, academic institutions, and civil society organisations to ensure the sustainability of open data initiatives and the effective integration of data-driven approaches into decision-making processes. Nevertheless, some businesses are deficient in the necessary resources, expertise, and organisational culture needed to facilitate open data initiatives. Open data initiatives are shaped by policy and legal frameworks that safeguard public interests, intellectual property rights, and data privacy. Nevertheless, the effective implementation of these programmes is impeded by antiquated legislation, insufficient tools for enforcement, and ambiguous frameworks for data governance. The issue of data protection and privacy is of great importance, especially when it comes to exchanging confidential information. The lack of sufficient legislation, weak enforcement mechanisms, and public scepticism towards data governance institutions hinder attempts to promote open data while safeguarding privacy [20]. To achieve a balance between data accessibility and privacy concerns, it is necessary to establish explicit guidelines, processes for obtaining authorization, and means for anonymizing data. Data sharing and reuse in open data initiatives are complicated by intellectual property rights, licencing agreements, and data ownership. The lack of clear ownership rights, burdensome licencing restrictions, and legal barriers to data reuse impede stakeholder cooperation, innovation, and knowledge exchange. Efficient data governance systems are essential for facilitating data exchange, collaboration, and interoperability across different entities. The execution of open data initiatives is hindered by fragmented frameworks, contradictory mandates, and a lack of collaboration among government agencies, civil society groups, and the corporate sector. The sustainability and financial viability of open data projects in East Africa are major obstacles that need to be addressed. These programmes frequently depend on external financing sources such as government grants, donor funds, and philanthropic backing, which can pose difficulties in sustaining momentum and supporting long-term sustainability initiatives [21]. In order to guarantee long-term financial stability, it is imperative to investigate partnerships with the business sector, diversify funding sources, and employ creative financing solutions. Governmental, academic, and civil society groups' institutional backing is essential for the sustainability of open data initiatives. Nevertheless, several institutions are deficient in the essential organisational culture, regulations, and infrastructure. Overcoming these challenges can be achieved by enhancing institutional support through capacity training, implementing legislative reforms, and engaging in lobbying actions. Developing viable business models for open data projects may be difficult, particularly when faced with limited resources and potential obstacles to generating revenue from data. In order to do this, open data initiatives frequently integrate other sources of income, such as value-added goods, training programmes, and consulting services. Nevertheless, achieving a harmonious equilibrium between the principles of open data and financial sustainability necessitates a comprehensive examination of the value offer, pricing, and market demand. To achieve business model refinement and ensure long-term sustainability, it is necessary to engage in experimentation with different income streams, actively communicate with potential clients, and continuously iterate depending on feedback received.

Methods for Improving Data Accessibility

In order to overcome the obstacles and difficulties that impede the accessibility of data in East Africa through open data initiatives, many tactics can be implemented. The objective of these strategies is to increase the procedures for assuring the quality of data, boost measures to create capacity, improve legislative and regulatory frameworks, and

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foster collaboration and partnerships among stakeholders [22]. By employing these tactics, individuals or groups with an interest in the matter may overcome obstacles to accessing data and optimise the advantages of open data for promoting long-term growth in the area.

The establishment of data quality assurance systems is crucial for ensuring the trustworthiness, accuracy, and utility of open data in East Africa. Methods for enhancing data quality assurance encompass data validation and verification, which entail the identification and rectification of mistakes, abnormalities, and outliers in the data through quality checks, data cleaning, and validation procedures. Metadata standards and documentation are being created to offer consumers crucial details regarding the origin, scope, and limitations of datasets, hence enhancing transparency and instilling trust in the data [23]. Data governance and stewardship are being established to define responsibility, positions, and duties for managing and safeguarding open data, encompassing data ownership, access limitations, versioning methods, and protocols for managing the lifespan of data. User input and participation play a vital role in identifying issues related to data quality, user requirements, and the most important areas for improving data. By engaging in surveys, feedback systems, and user-centric design approaches, it is possible to identify deficiencies in data quality and make educated decisions on how to enhance it. To properly utilise open data in East Africa, it is imperative to enhance capacity building initiatives. These encompass data literacy and training initiatives for people, researchers, journalists, policymakers, and government officials. These initiatives focus on data management, analysis, visualisation, and interpretation. Specialised training and certification courses are available to enhance technical abilities in data science, statistics, programming, and data engineering. Enhancing institutional capability entails strengthening the capabilities of academic institutions, government agencies, and civil society groups to facilitate open data initiatives and cultivate a culture of decision-making based on data [24]. Community engagement and outreach may be accomplished by mobilising grassroots organisations, local communities, and marginalised people, fostering awareness and participation in open data initiatives. These techniques are designed to enhance the technical proficiency, comprehension, and expertise required for effective use of open data in East Africa.

Creating an optimal environment for open data initiatives and safeguarding data privacy, intellectual property rights, and public interests necessitate the establishment of strong legal and regulatory frameworks. Robust data protection and privacy regulations are essential to guarantee the ethical handling and dissemination of personal data, while simultaneously fostering data accessibility and innovation. Implementing complete open data regulations and mandates can formalise government agencies' proactive dissemination of data, fostering widespread accessibility and transparency across all sectors. Implementing standardised licencing frameworks, open data licences, and intellectual property legislation may both foster innovation and safeguard the rights of artists [25]. Moreover, promoting multi-stakeholder collaboration is essential for the development and implementation of open data laws and regulations. This may be accomplished by creating multi-stakeholder working groups, policy forums, and advisory committees. Facilitating Collaboration and Alliances: In order to address mutual challenges and attain shared goals, it is essential to cultivate cooperation and alliances among relevant parties. Collaborative arrangements between public and private entities can be established to jointly develop and implement open data initiatives with government agencies, commercial firms, and non-profit organisations, therefore expanding their impact and scope. Government, academia, civic society, and the business sector must collaborate across different sectors to tackle socioeconomic concerns using data-driven solutions [26]. By fostering collaborations between different disciplines, promoting joint research efforts, and establishing centres for innovation, we can facilitate the development of solutions based on data analysis. Promoting collaboration at both regional and global levels on open data initiatives may facilitate the sharing of data, interoperability, and the adoption of best practices. Participating in regional data forums, conferences, and working groups may provide valuable insights from around the world and foster collaboration. Community involvement and empowerment may be accomplished via collaborative efforts to develop and implement open data projects that address the specific needs and objectives of the local community. This involves equipping individuals with the essential information and resources to support advocacy and community development activities.

Case Studies

The implementation of open data projects in East Africa has played a crucial role in tackling diverse socioeconomic issues and promoting long-term growth in numerous industries. Open data has made substantial progress in three main domains: agricultural and food security, health information systems and disease surveillance, and urban planning and infrastructure development. By examining specific instances in various fields, we can demonstrate the influence and possibilities of open data projects in East Africa. Agriculture is a vital sector in East Africa, employing a substantial section of the population and making a considerable contribution to the economy. Open data for agriculture and food security is of utmost importance in this context. Open data initiatives centred around agriculture and food security have the objective of enhancing productivity, bolstering resilience to

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climate change, and guaranteeing food security for a growing population [27]. KALRO has developed an open data platform that grants access to market pricing, agricultural research data, and optimal farming methods. This platform facilitates collaboration among farmers, researchers, lawmakers, and extension personnel to improve agricultural productivity, optimise resource allocation, and mitigate climate-related hazards. The technology also offers instantaneous weather updates, crop production forecasts, and alerts for bug infestations, facilitating prompt decision-making and revolutionising agriculture and livelihoods in East Africa. Health information systems and disease surveillance play a vital role in monitoring public health trends, detecting outbreaks of illnesses, and providing healthcare treatments based on solid evidence. Open data initiatives strive to improve the accessibility, compatibility, and openness of data in healthcare systems. An instance of such a project is the implementation of District Health Information Software 2 (DHIS2) in Tanzania, which enables healthcare practitioners to promptly submit essential health indicators. DHIS2 consolidates data from many sources, including as laboratories, community health workers, and health institutions, to offer a holistic perspective on public health patterns. This facilitates evidence-based decision-making at every level of the healthcare system [18]. This data allows health officials to allocate resources, pinpoint high-risk sites, and concentrate on preventing and controlling infectious illnesses such as TB, HIV/AIDS, and malaria. The DHIS2 platform has showcased the capacity of open data to bolster health systems in East Africa and improve disease surveillance. Urban planning and infrastructure development in East African communities are undergoing significant changes as a result of urbanisation. This presents both possibilities and problems for achieving sustainable development. Open data initiatives centred around infrastructure development and urban planning strive to enhance data accessibility, geographical analysis, and public engagement. The Nairobi City County Open Data Portal is an exemplar of such an initiative, granting stakeholders access to geospatial data, infrastructure maps, transport networks, and land use information. This platform enables stakeholders to discern development goals, view and evaluate urban data, and monitor progress towards sustainable urbanisation objectives [28]. The portal also offers data on property title rights, traffic congestion patterns, public transit routes, and sanitation services. Urban planners can utilise spatial data to inform decisions on investments, disaster risk management strategies, and land use planning. The Nairobi City County open data site serves as a prime example of how the use of open data may enhance public engagement, responsibility, and clarity in the realm of urban planning.

CONCLUSION

This study examines the effects of open data initiatives in East Africa, emphasising its capacity to foster socio-economic progress, encourage transparency and responsibility, and empower local people. Case studies in agriculture, health, and urban planning have emphasised the significant impact of available data on production, public health results, and urban development plans. Nevertheless, the effective implementation and utilisation of open data in East Africa face several hurdles, such as issues pertaining to data accuracy, deficiencies in skill development, restrictions imposed by policies and regulations, and limits arising from financial support and long-term viability. In order to maximise the potential influence and ensure the durability of the project, it is imperative to tackle these challenges. Stakeholders can employ diverse strategies to surmount obstacles and impediments to data accessibility. These strategies include enhancing mechanisms for assuring data quality, bolstering initiatives for building capacity, refining policy and regulatory frameworks, and fostering collaboration and partnerships among stakeholders. Implementing these measures will enable stakeholders in East Africa to fully harness the power of open data, promote sustainable development, and foster innovation in the area. The research suggests that politicians should give priority to developing and enforcing open data regulations and frameworks to encourage data transparency, compatibility, and availability. It is necessary to allocate resources towards capacity building projects in order to get the necessary technical skills, knowledge, and experience needed to effectively utilise open data in East Africa. Collaboration and partnerships among stakeholders are crucial for fostering a culture that appreciates the sharing of data, creativity, and responsibility in decision-making. Continued financial assistance is essential for the lasting sustainability and impact of open data initiatives in East Africa. To ensure the ongoing growth and durability of open data ecosystems, it is crucial for governments, funders, charity organisations, and the corporate sector to allocate resources towards open data infrastructure, capacity-building programmes, and sustainability efforts.

RECOMMENDATIONS

The open data efforts in East Africa are undergoing development and it is essential to identify potential future paths and suggestions to optimise their influence and tackle new difficulties. Important tactics are utilising cutting-edge technology such as artificial intelligence and blockchain, actively involving marginalised populations, promoting the use of open scientific and research data, and creating regional data centres and networks. AI can optimise the analysis, interpretation, and use of open data in East Africa by automating data processing processes, extracting valuable insights from vast datasets, and detecting hidden patterns and trends that may not be discernible using conventional approaches. Blockchain technology provides the potential to improve the reliability,

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safety, and openness of open data projects by creating unchangeable records of data transactions, guaranteeing the origin of data, and facilitating secure data exchange and cooperation across decentralised networks. Utilising data analytics and visualisation technologies enables stakeholders to extract practical insights from open data and effectively convey their results to a wide range of audiences. Tableau, Power BI, and Google Data Studio are platforms that enable users to do sophisticated data analysis, create interactive visualisations, and effectively convey findings via captivating data narratives. Implementing community-centred initiatives may effectively meet the needs and objectives of disadvantaged populations. Community involvement initiatives, such as participatory mapping, citizen science projects, and community forums, enable disadvantaged communities to express their concerns, contribute local knowledge, and influence the development agenda. Collecting and representing data in an inclusive manner is crucial for accurately portraying the experiences and reality of marginalised populations. Capacity building and empowerment enable underprivileged populations to acquire the skills, knowledge, and resources necessary to gather, evaluate, and utilise data. This allows them to assert their rights, demand transparency and responsibility, and actively engage in decision-making processes. Promoting open access to research data in East Africa can expedite scientific discovery, foster innovation, and facilitate knowledge exchange. Enhancing research data management methods is crucial for guaranteeing the excellence, reliability, and usefulness of research data. Creating regional data centres and networks may promote the sharing of knowledge, enhance the development of skills, and foster multidisciplinary research cooperation in East Africa. Initiatives that include the collaboration and exchange of data across borders can effectively tackle difficulties that span many regions and facilitate the integration of those regions. Establishing and maintaining regional data centres and collaboration platforms requires the creation of multi-stakeholder collaborations and networks. To summarise, using new technologies, including disadvantaged groups, supporting open scientific and research data, and creating regional data hubs and networks are crucial approaches to improve data accessibility and support sustainable development in East Africa.

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