

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

Kariuki Muigua

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

Table of Contents

Abstract.....	3
1.0 Introduction	3
2.0 The Intersection between Indigenous Knowledge and Artificial Intelligence in Africa	5
3.0 Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge in Africa.....	8
4.0 Conclusion.....	9
References.....	10

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

Kariuki Muigua*

Abstract

This paper critically explores how AI can be utilised to harness and conserve indigenous knowledge in Africa. The paper observes that Africa is rich in indigenous knowledge systems that have enabled people and communities in the continent to live sustainably for many centuries. Despite its role in fostering Sustainable Development for people and planet, the paper notes that the emergence of AI presents unique challenges to indigenous knowledge in Africa. The paper discusses these threats. Further, the paper notes that AI can be utilised as a positive tool to ensure the effective use and preservation of indigenous knowledge in Africa. It discusses how AI can be used to harness and conserve indigenous knowledge in Africa for posterity.

1.0 Introduction

Indigenous knowledge is a wide term that covers the understandings, skills and philosophies developed by societies with long histories of interaction with their environment and natural surroundings¹. In addition, it has been observed that indigenous knowledge also referred to as traditional knowledge or aboriginal knowledge is a cumulative, collective body of knowledge, experience, and values held by societies with a history of subsistence². Indigenous knowledge can also be described as a collective term used to represent the many place-based knowledges accumulated across generations within myriad specific cultural contexts³. This knowledge is usually accumulated and transmitted across generations within specific cultural contexts⁴.

Indigenous knowledge plays a crucial role in fostering sustainability. For instance, it has been observed that indigenous knowledge encompasses aspects of ecology, agriculture, and medicine, linking traditional wisdom and practices with the natural sciences⁵. As a result, indigenous knowledge plays a crucial role in sustainable resource management and biodiversity conservation⁶. In particular, it has been observed that indigenous knowledge can unlock all facets of Sustainable Development: economic, social and environmental. For instance, from an economic perspective, indigenous knowledge supports the

* PhD in Law (Nrb), SC, FCI Arb (Chartered Arbitrator), OGW, LL. B (Hons) Nrb, LL.M (Environmental Law) Nrb; Dip. In Law (KSL); FCPS (K); Dip. in Arbitration (UK); MKIM; Mediator; Consultant: Lead expert EIA/EA NEMA; BSI ISO/IEC 27001:2005 ISMS Lead Auditor/ Implementer; ESG Consultant; Advocate of the High Court of Kenya; Professor of Environmental Law and Conflict Management at the University of Nairobi, Faculty of Law; Member of the Permanent Court of Arbitration (PCA) [July, 2026].

¹ United Nations Educational, Scientific and Cultural Organization., 'Local and Indigenous Knowledge Systems (LINKS)' Available at <https://en.unesco.org/links> (Accessed on 03/07/2026)

² Ellis, S.C., "Meaningful consideration? A review of traditional knowledge in environmental decision making," *Arctic* (2005): 66-77, at p. 66.

³ Jessen. T et al., 'Contributions of Indigenous Knowledge to ecological and evolutionary understanding' Available at <https://esajournals.onlinelibrary.wiley.com/doi/10.1002/fee.2435> (Accessed on 03/07/2026)

⁴ Ibid

⁵ United Nations Educational, Scientific and Cultural Organization., 'Indigenous Knowledge' Available at <https://www.unesco.org/en/query-list/i/indigenous-knowledge> (Accessed on 03/07/2026)

⁶ Ibid

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

production of vital resources such as food, medicines and genetic resources that can be commercialized towards economic growth⁷. Socially, indigenous knowledge affirms the individual and community's distinctiveness, its beliefs and practices thus fostering individual well-being and social cohesion⁸. It has been observed that indigenous knowledge is not only an accumulation of practical knowledge but also a way of life, deeply intertwined with cultural traditions, rituals, and beliefs and as a result, it is a source of social and cultural identity and well-being for indigenous and local communities⁹.

In addition, indigenous knowledge plays a fundamental role in unlocking environmental sustainability. For example, it has been observed that indigenous peoples and local communities all over the world are custodians of unique and valuable knowledge systems and practices that emphasize harmony between people and planet¹⁰. These practices have a minimal impact on the environment and are highly adaptive to ecological changes, fostering healthy and resilient ecosystems and are therefore an effective solution towards fostering environmental sustainability including through tackling biodiversity loss and climate change among other environmental threats¹¹. Indigenous knowledge encompasses a deep understanding of local ecosystems, the behavior of wildlife, the medicinal properties of plants, weather patterns, and the complex interconnections between nature and human society among other phenomena and is therefore well-suited to ensure sound environmental conservation¹².

Indigenous knowledge is therefore a rich body of knowledge that can unlock Sustainable Development across all its dimensions. However, it has been observed that this knowledge system is often marginalized and dismissed by mainstream science since it is considered inferior and unscientific¹³. In addition, the emergence of modern technologies including Artificial Intelligence (AI) presents unique opportunities and threats to indigenous knowledge that need to be carefully navigated in order to harness and preserve this rich body of knowledge¹⁴.

⁷ World Bank Group., 'Indigenous knowledge for development : opportunities and challenges' Available at <https://documents.worldbank.org/pt/publication/documents-reports/documentdetail/574381468765625385/indigenous-knowledge-for-development-opportunities-and-challenges> (Accessed on 03/07/2026)

⁸ Sergon. P.J., 'The role of Indigenous knowledge: practices and values in promoting socio-economic well-being and equity among Endorois community of Kenya' Available at <https://journals.sagepub.com/doi/abs/10.1177/11771801221086724> (Accessed on 03/07/2026)

⁹ EurAsia Carbon., 'The Role of Indigenous Knowledge in Environmental Conservation' Available at https://www.linkedin.com/pulse/role-indigenous-knowledge-environmental-conservation-eurasia-carbon?utm_source=share&utm_medium=member_android&utm_campaign=share_via (Accessed on 03/07/2026)

¹⁰ United Nations Development Programme., 'Indigenous knowledge is crucial in the fight against climate change – here's why' Available at <https://climatepromise.undp.org/news-and-stories/indigenous-knowledge-crucial-fight-against-climate-change-heres-why> (Accessed on 03/07/2026)

¹¹ Ibid

¹² EurAsia Carbon., 'The Role of Indigenous Knowledge in Environmental Conservation' Op Cit

¹³ The African Manifesto for Science, Technology and Innovation., Available at https://atpsnet.org/wp-content/uploads/2017/05/the_african_manifesto_for_sti.pdf (Accessed on 03/07/2026)

¹⁴ Indigenous Knowledge Systems and AI., Available at <https://link.springer.com/collections/hjehacfe> (Accessed on 03/07/2026)

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

This paper critically explores how AI can be utilised to harness and conserve indigenous knowledge in Africa. The paper observes that Africa is rich in indigenous knowledge systems that have enabled people and communities in the continent to live sustainably for many centuries. Despite its role in fostering Sustainable Development for people and planet, the paper notes that the emergence of AI presents unique challenges to indigenous knowledge in Africa. The paper discusses these threats. Further, the paper notes that AI can be utilised as a positive tool to ensure the effective use and preservation of indigenous knowledge in Africa. It discusses how AI can be used to harness and conserve indigenous knowledge in Africa for posterity.

2.0 The Intersection between Indigenous Knowledge and Artificial Intelligence in Africa

Africa has a rich history of indigenous knowledge. Indigenous peoples and local communities in Africa have developed deep and sophisticated indigenous knowledge systems, based on their observations and interactions with the environment over generations that have enabled them to harness ecosystem services to support their livelihoods, ensure harmony with nature and survive socioecological changes including climate change¹⁵. It has been observed that Africa's rich indigenous knowledge systems support deep understanding of the intrinsic value of nature and provide local and context-specific solutions on key environmental issues including climate mitigation and adaptation, ecosystem management, and biodiversity conservation¹⁶. Indigenous knowledge systems including knowledge about traditional medicines, indigenous crops, traditional hunting and fishing techniques, animal migration patterns and water management have been utilised by indigenous and local communities in Africa for many centuries to ensure sound environmental governance for people and planet¹⁷.

Indigenous peoples and local communities who primarily live in Africa and the Global South have developed, maintained, applied and evolved knowledge systems via direct experience interacting with landscapes, ecosystems, habitats and species over millennia¹⁸. It has been observed that through indigenous knowledge systems, the environment and its natural resources are viewed as sacred by indigenous peoples and local communities in Africa and the Global South placing a responsibility on humanity to live in harmony with nature¹⁹. Through this perspective, indigenous knowledge has been utilised for many centuries in Africa and the Global South to protect vital carbon sinks such forests, ensure sound ecosystem management and conserve biodiversity therefore enabling humanity to effectively tackle mounting

¹⁵ Zougmore. R., Segnon. A., & Thornton. P., 'Harnessing Indigenous Knowledge and Practices for Effective Adaptation in the Sahel' Available at <https://doi.org/10.1016/j.cosust.2023.101389> (Accessed on 03/07/2026)

¹⁶ United Nations Educational, Scientific and Cultural Organization., 'Indigenous knowledge and traditional practices guiding nature and climate conservation In the Virunga National Park' Available at <https://www.unesco.org/en/articles/indigenous-knowledge-and-traditional-practices-guiding-nature-and-climate-conservation-virunga> (Accessed on 03/07/2026)

¹⁷ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' Available at https://www.wipo.int/edocs/pubdocs/en/wipo_pub_933_2020.pdf (Accessed on 03/07/2026)

¹⁸ Jessen. T et al., 'Contributions of Indigenous Knowledge to ecological and evolutionary understanding' Op Cit

¹⁹ Harnessing Indigenous Knowledge Systems for Global Knowledge Cooperation., Available at https://www.idos-research.de/fileadmin/user_upload/pdfs/publikationen/aktuelle_kolumne/2024/German_Institute_of_Development_and_Sustainability_EN_Segueda_Banerjee_28.10.2024.pdf (Accessed on 03/07/2026)

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

environmental challenges including the triple planetary crisis of climate change, pollution and biodiversity loss²⁰.

The abundance of indigenous knowledge in Africa and the Global South provides opportunities to unlock Sustainable Development. For instance, Indigenous peoples and local communities have been identified as crucial agents of change, whose livelihood practices, traditional knowledge and ways of life are fundamental for sound environmental governance, protecting biodiversity, combating climate change and realizing the ambitious vision of the United Nation's 2030 Agenda for Sustainable Development²¹. It has been observed that indigenous knowledge in Africa is a living body of knowledge like western science and has been transmitted by custodians of this body of knowledge for generations²². Indigenous knowledge is therefore part of the cultural heritage of the people of Africa and plays a key role in supporting the progress, livelihoods and well-being of indigenous peoples and local communities in Africa and the Global South²³.

Harnessing and conserving indigenous knowledge is therefore a key approach towards utilising the wisdom of the people of Africa to foster Sustainable Development. In particular, the emergence of AI provides opportunities to ensure that indigenous knowledge in Africa and the Global South is appropriately harnessed for posterity. However, despite its efficacy, AI presents unique challenges to indigenous knowledge systems in Africa and the Global South. For example, without proper safeguards, AI systems can fuel digital colonialism undermining indigenous knowledge²⁴. Digital colonialism has been described as the modern-day scramble for Africa where large technology companies from the Global North extract, analyze and own user data from the Global South for profit and market influence without tangible benefits to developing countries²⁵. This is evidenced by data extraction, where AI's reliance on large datasets, including indigenous knowledge systems, reinforces colonial patterns of extraction and exploitation²⁶. Digital colonialism mirrors the classic patterns of resource extraction where indigenous and local knowledge is extracted from Africa and becomes proprietary algorithms controlled by foreign entities²⁷.

AI can also lead to breach of indigenous data sovereignty in Africa and the Global South. The concept of data sovereignty posits that data should be subject to the laws and regulations of its physical location and

²⁰ United Nations Development Programme., 'Indigenous Knowledge is Crucial in the Fight against Climate Change – here's why' Op Cit

²¹ International Labour Organization., 'Sustainable Development Goals: Indigenous Peoples in Focus' Available at https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_emp/@ifp_skills/documents/publication/wcms_503715.pdf (Accessed on 03/07/2026)

²² Naamwintome. B.A., & Millar. D., 'Indigenous Knowledge and the African Way Forward: Challenges and Opportunities' Available at <https://www.scirp.org/journal/paperinformation?paperid=68164> (Accessed on 03/07/2026)

²³ Ibid

²⁴ Coleman. D., 'Digital Colonialism: The 21st Century Scramble for Africa through the Extraction and Control of User Data and the Limitations of Data Protection Laws' *Michigan Journal of Race & Law*, Volume 24, Issue 2 (2019)

²⁵ Ibid

²⁶ Indigenous Knowledge Systems and AI., Op Cit

²⁷ How Digital Colonialism Threatens Kenya's Silicon Savannah., Available at <https://www.techpolicy.press/how-digital-colonialism-threatens-kenyas-silicon-savannah/> (Accessed on 03/07/2026)

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

source²⁸. It has been observed that data sovereignty is key in preventing misappropriation of data while also upholding human rights including the right to privacy²⁹. The use of AI tools in Africa and the Global South often result in indigenous peoples and local communities losing ownership and control of their own knowledge systems, since AI systems developed by institutions in the Global North may commodify indigenous knowledge without proper consent and collaboration from the knowledge holders³⁰. For example, it has been observed that AI tools have often been used to extract data from indigenous peoples and local communities usually without their Free, Prior and Informed Consent (FPIC)³¹. Extraction and commodification of indigenous data in areas such as agriculture, healthcare and environmental governance without the meaningful involvement of indigenous peoples and local communities therefore violates indigenous data sovereignty³².

Algorithmic biases in AI can also affect the use of indigenous knowledge systems to foster Sustainable Development in Africa and the Global South. For instance, it has been observed that AI systems trained on biased data sets can perpetuate harmful stereotypes against indigenous peoples and their knowledge systems³³. Since most AI models reflect foreign norms and values, applying them to Africa without necessary modifications to align them with local circumstances often perpetuate biases, undermines indigenous knowledge systems and hinders innovation at the local scale³⁴. In particular, it has been observed that AI tools and systems used in healthcare, education and agriculture often fuel biases and discrimination against indigenous knowledge systems in these sectors despite such knowledge systems having ensured sustainability in Africa and the Global South for many centuries³⁵.

It is imperative to tackle the foregoing challenges in order to utilise AI to harness and conserve indigenous knowledge for posterity.

²⁸ What is Data Sovereignty?., Available at <https://aws.amazon.com/what-is/data-sovereignty/> (Accessed on 03/07/2026)

²⁹ What is data sovereignty?., Available at <https://www.ibm.com/think/topics/data-sovereignty> (Accessed on 03/07/2026)

³⁰ Indigenous Knowledge Systems and AI., Op Cit

³¹ How AI can adapt to Indigenous knowledge., Available at <https://medium.com/blog/how-ai-can-adapt-to-indigenous-knowledge-2ae3cd442096> (Accessed on 03/07/2026)

³² Perera. M et al., 'Indigenous peoples and artificial intelligence: A systematic review and future directions' Available at <https://journals.sagepub.com/doi/10.1177/20539517251349170#:~:text=Abstract,Discuss%20Literature%20under%20each%20category> (Accessed on 03/07/2026)

³³ Indigenous Knowledge Systems and AI., Op Cit

³⁴ How to Break Digital Colonialism in African Software Development., Available at <https://www.ictworks.org/digital-colonialism-african-software-development/#:~:text=Defining%20Digital%20Colonialism%20in%20Software,serve%20its%20communities'%20best%20interests> (Accessed on 03/07/2026)

³⁵ Ibid

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

3.0 Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge in Africa

Africa is a rich reservoir of indigenous knowledge which has played a crucial role in ensuring sustainability since time immemorial. Indigenous knowledge has enabled indigenous peoples and local communities in Africa and the Global South to live sustainably for many centuries by emphasizing the balance between humanity and nature³⁶. The United Nations Environment Programme (UNEP) observes that indigenous knowledge, gained through trans-generational experiences, observations, and transmission, can contribute to sound environmental protection, sustainable ecosystem management and tackling environmental threats including climate change, resource depletion and biodiversity loss³⁷. However, Africa's indigenous knowledge is facing mounting threats. For instance, indigenous knowledge is usually ignored, marginalised and sidelined from governance and decision-making processes since it is deemed inferior and unscientific³⁸. In addition, the emergence of AI presents new and unique threats to indigenous knowledge in Africa and the Global South. Challenges such as digital colonialism, breach of indigenous data sovereignty and algorithmic biases are undermining the use and transmission of indigenous knowledge in Africa and the Global South³⁹.

The foregoing challenges can lead to the loss and erosion of indigenous knowledge with negative impacts on sustainability and cultural heritage in Africa and the Global South. Consequently, it is imperative to harness and conserve indigenous knowledge for posterity. In particular, it has been observed that AI can be transformed from a negative tool that undermines indigenous knowledge to a positive tool that supports the use, conservation and transmission of indigenous knowledge for the benefit of present and future generations⁴⁰. For example, it has been observed that involving indigenous peoples and local communities can lead to the design and implementation of AI models that rely on indigenous data in order to effectively harness indigenous knowledge for Sustainable Development⁴¹. By collaborating with indigenous peoples and local communities, it is possible to develop and deploy AI models that align with their cultural values, knowledge systems, traditional practices and ethical principles⁴². This can be achieved through developing and deploying pluriversal AI models. It has been observed that pluriversal AI embraces different worldviews including through embracing the involvement of multiple stakeholders including indigenous and local communities in the development and deployment of AI tools and systems in order to ensure that such tools and systems reflect diverse cultures, values, languages and knowledge systems⁴³. Pluriversal AI models can therefore support the use and conservation of indigenous knowledge by harnessing indigenous

³⁶ United Nations Development Programme., 'Indigenous Knowledge is Crucial in the Fight against Climate Change – here's why' Op Cit

³⁷ United Nations Environment Programme., 'Indigenous peoples and their communities' Available at <https://www.unep.org/civil-society-engagement/major-groups-modalities/major-group-categories/indigenous-peoples-and#:~:text=UNEP%20recognizes%20the%20importance%20of,indigenous%20livelihoods%20and%20their%20survival>. (Accessed on 03/07/2026)

³⁸ The African Manifesto for Science, Technology and Innovation., Op Cit

³⁹ Indigenous Knowledge Systems and AI., Op Cit

⁴⁰ Ibid

⁴¹ Perera. M et al., 'Indigenous peoples and artificial intelligence: A systematic review and future directions' Op Cit

⁴² Ibid

⁴³ Kilungu. N., 'Pluriversal AI: Bridging African Epistemologies and Peace Innovation' Available at <https://www.linkedin.com/pulse/pluriversal-ai-bridging-african-epistemologies-peace-mwelu-kilungu-g-acllf/> (Accessed on 03/07/2026)

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

and local data sets in key sectors such as education, healthcare and agriculture for equity, justice, fairness and inclusivity⁴⁴.

AI can also be effectively utilised to harness and conserve indigenous knowledge including through development of local AI models that rely on indigenous languages. It has been observed that harnessing and including all languages is key towards making AI more inclusive and complete⁴⁵. However, since most AI models are developed in the Global North, they are trained on the English language marginalizing thousands of other languages including indigenous languages in Africa and the Global South⁴⁶. This situation undermines cultural and linguistic diversity in technology while also threatening indigenous knowledge systems and norms which are usually preserved in indigenous and local languages⁴⁷. Consequently, it has been correctly observed that incorporating African languages into AI can ensure linguistic and cultural diversity while also supporting the use and conservation of indigenous knowledge systems which are normally preserved in these languages⁴⁸. AI can therefore be effectively utilised in preserving and transmitting indigenous languages thus ensuring that the practices, customs, beliefs and knowledge systems of indigenous peoples and local communities are widely known and transferred to future generations for posterity⁴⁹.

AI is therefore a powerful tool that can be effectively utilised to harness and conserve indigenous knowledge for the benefit of both present and future generations.

4.0 Conclusion

Despite its negative impacts on indigenous knowledge including through fuelling digital colonialism, breach of indigenous data sovereignty and algorithmic biases, AI can also be effectively utilised to harness and conserve indigenous knowledge. This can be achieved through collaborating with indigenous peoples and local communities in the development and deployment of AI models, building and utilising pluriversal AI and incorporating African languages in AI models⁵⁰. Utilising AI to harness and conserve indigenous knowledge is therefore a necessary and achievable imperative for Africa towards Sustainable Development.

⁴⁴ Ibid

⁴⁵ United Nations Development Programme., 'Harnessing Multilingual AI for Industrial Development Growth and Powering Local Communities' Available at <https://www.undp.org/digital/blog/harnessing-multilingual-ai-industrial-development-growth-and-powering-local-communities> (Accessed on 03/07/2026)

⁴⁶ Ibid

⁴⁷ Empowering Linguistic Diversity: Harnessing Artificial Intelligence in Education., Available at <https://rsisinternational.org/journals/ijrias/articles/empowering-linguistic-diversity-harnessing-artificial-intelligence-in-education/> (Accessed on 03/07/2026)

⁴⁸ How Africa and Europe could create global AI governance rules., Available at <https://ecdpm.org/work/how-africa-and-europe-could-create-global-ai-governance-rules> (Accessed on 03/07/2026)

⁴⁹ United Nations Educational, Scientific and Cultural Organization., 'Exploring the impact of Artificial Intelligence and Intangible Cultural Heritage' Available at <https://ich.unesco.org/en/news/exploring-the-impact-of-artificial-intelligence-and-intangible-cultural-heritage-13536> (Accessed on 03/07/2026)

⁵⁰ Kilungu. N., 'Pluriversal AI: Bridging African Epistemologies and Peace Innovation' Op Cit

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

References

Coleman, D., 'Digital Colonialism: The 21st Century Scramble for Africa through the Extraction and Control of User Data and the Limitations of Data Protection Laws' *Michigan Journal of Race & Law*., Volume 24, Issue 2 (2019)

Ellis, S.C., "Meaningful consideration? A review of traditional knowledge in environmental decision making," *Arctic* (2005): 66-77, at p. 66.

Empowering Linguistic Diversity: Harnessing Artificial Intelligence in Education., Available at <https://rsisinternational.org/journals/ijrias/articles/empowering-linguistic-diversity-harnessing-artificial-intelligence-in-education/>

EurAsia Carbon., 'The Role of Indigenous Knowledge in Environmental Conservation' Available at https://www.linkedin.com/pulse/role-indigenous-knowledge-environmental-conservation-eurasia-carbon?utm_source=share&utm_medium=member_android&utm_campaign=share_via

Harnessing Indigenous Knowledge Systems for Global Knowledge Cooperation., Available at https://www.idos-research.de/fileadmin/user_upload/pdfs/publikationen/aktuelle_kolumne/2024/German_Institute_of_Development_and_Sustainability_EN_Segueda_Banerjee_28.10.2024.pdf

How Africa and Europe could create global AI governance rules., Available at <https://ecdpm.org/work/how-africa-and-europe-could-create-global-ai-governance-rules>

How AI can adapt to Indigenous knowledge., Available at <https://medium.com/blog/how-ai-can-adapt-to-indigenous-knowledge-2ae3cd442096>

How Digital Colonialism Threatens Kenya's Silicon Savannah., Available at <https://www.techpolicy.press/how-digital-colonialism-threatens-kenyas-silicon-savannah/>

How to Break Digital Colonialism in African Software Development., Available at <https://www.ictworks.org/digital-colonialism-african-software-development/#:~:text=Defining%20Digital%20Colonialism%20in%20Software,serve%20its%20communities'%20best%20interests>

Indigenous Knowledge Systems and AI., Available at <https://link.springer.com/collections/hjehacfe>

International Labour Organization., 'Sustainable Development Goals: Indigenous Peoples in Focus' Available at https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_emp/@ifp_skills/documents/publication/wcms_503715.pdf

Jessen, T et al., 'Contributions of Indigenous Knowledge to ecological and evolutionary understanding' Available at <https://esajournals.onlinelibrary.wiley.com/doi/10.1002/fee.2435>

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

Kilungu. N., 'Pluriversal AI: Bridging African Epistemologies and Peace Innovation' Available at <https://www.linkedin.com/pulse/pluriversal-ai-bridging-african-epistemologies-peace-mwelu-kilungu-g-acl1f/>

Naamwintome. B.A., & Millar. D., 'Indigenous Knowledge and the African Way Forward: Challenges and Opportunities' Available at <https://www.scrip.org/journal/paperinformation?paperid=68164>

Perera. M et al., 'Indigenous peoples and artificial intelligence: A systematic review and future directions' Available at <https://journals.sagepub.com/doi/10.1177/20539517251349170#:~:text=Abstract,Discuss%20Literature%20under%20each%20category>

Sergon. P.J., 'The role of Indigenous knowledge: practices and values in promoting socio-economic well-being and equity among Endorois community of Kenya' Available at <https://journals.sagepub.com/doi/abs/10.1177/11771801221086724>

The African Manifesto for Science, Technology and Innovation., Available at https://atpsnet.org/wp-content/uploads/2017/05/the_african_manifesto_for_sti.pdf

United Nations Development Programme., 'Harnessing Multilingual AI for Industrial Development Growth and Powering Local Communities' Available at <https://www.undp.org/digital/blog/harnessing-multilingual-ai-industrial-development-growth-and-powering-local-communities>

United Nations Development Programme., 'Indigenous knowledge is crucial in the fight against climate change – here's why' Available at <https://climatepromise.undp.org/news-and-stories/indigenous-knowledge-crucial-fight-against-climate-change-heres-why>

United Nations Educational, Scientific and Cultural Organization., 'Local and Indigenous Knowledge Systems (LINKS)' Available at <https://en.unesco.org/links>

United Nations Educational, Scientific and Cultural Organization., 'Indigenous Knowledge' Available at <https://www.unesco.org/en/query-list/i/indigenous-knowledge>

United Nations Educational, Scientific and Cultural Organization., 'Indigenous knowledge and traditional practices guiding nature and climate conservation In the Virunga National Park' Available at <https://www.unesco.org/en/articles/indigenous-knowledge-and-traditional-practices-guiding-nature-and-climate-conservation-virunga>

United Nations Educational, Scientific and Cultural Organization., 'Exploring the impact of Artificial Intelligence and Intangible Cultural Heritage' Available at <https://ich.unesco.org/en/news/exploring-the-impact-of-artificial-intelligence-and-intangible-cultural-heritage-13536>

United Nations Environment Programme., 'Indigenous peoples and their communities' Available at <https://www.unep.org/civil-society-engagement/major-groups-modalities/major-group-categories/indigenous-peoples->

Utilising Artificial Intelligence to Harness and Conserve Indigenous Knowledge: A Necessary Imperative for Africa?

[and#:~:text=UNEP%20recognizes%20the%20importance%20of,indigenous%20livelihoods%20and%20the%20ir%20survival](#)

What is Data Sovereignty?., Available at <https://aws.amazon.com/what-is/data-sovereignty/>

What is data sovereignty?., Available at <https://www.ibm.com/think/topics/data-sovereignty>

World Bank Group., 'Indigenous knowledge for development : opportunities and challenges' Available at <https://documents.worldbank.org/pt/publication/documents-reports/documentdetail/574381468765625385/indigenous-knowledge-for-development-opportunities-and-challenges>

World Intellectual Property Organization., 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' Available at https://www.wipo.int/edocs/pubdocs/en/wipo_pub_933_2020.pdf

Zougmore. R., Segnon. A., & Thornton. P., 'Harnessing Indigenous Knowledge and Practices for Effective Adaptation in the Sahel' Available at <https://doi.org/10.1016/j.cosust.2023.101389>