

*Loading Culture and Indigenous Justice Systems into Artificial Intelligence: A Necessary
Imperative for Sustainability*

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Abstract

This paper examines the need to inculcate culture and indigenous justice systems into AI. The paper observes that culture and indigenous justice systems have been key drivers of sustainability especially in the Global South. It discusses how culture and indigenous justice systems ensure sustainability. However, despite their role as drivers of sustainability, the paper notes that culture and indigenous justice systems have largely been excluded in AI development and use. The paper posits that failure to integrate culture and indigenous justice systems into AI fuels algorithmic biases, discrimination, inequalities and injustices thus undermining sustainability. Consequently, the paper argues that loading culture and indigenous justice systems into AI is a necessary imperative for sustainability. The paper suggests how this ideal can be achieved towards safe, inclusive, responsive and equitable AI for Sustainable Development.

1.0 Introduction

Artificial Intelligence (AI) has become an integral component of human life reshaping how we live, work, access services, travel, and progress¹. Due to its ability to automate, accelerate and predict, AI offers immense potential for enhanced productivity, public service delivery, innovation, and creativity². Due to its transformative potential, AI has been described as more than an emerging technology³. It is increasingly reshaping key sectors including healthcare, finance, education, energy, trade, agriculture, transport, and industry thus driving economic and social transformation⁴. In addition, the integration of AI in environmental decision-making processes is improving environmental governance for sustainability. The United Nations Environment Programme (UNEP) notes that AI is improving environmental governance by enhancing access to environmental data, real-time monitoring and prediction of environmental

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¹ World Economic Forum., 'Why AI's role in advancing sustainability is underestimated' Available at <https://www.weforum.org/stories/climate-action/can-ai-foster-sustainability/> (Accessed on 07/10/2026)

² United Nations Educational, Scientific and Cultural Organization., 'Finding E(thics) in AI: From Global Principles to People' Available at <https://www.unesco.org/en/articles/finding-ethics-ai-global-principles-people> (Accessed on 07/10/2026)

³ AI for Human Development: The United Nations' Study on the Role of Technology in Social Progress., Available at <https://neodatagroup.ai/ai-for-human-development-the-united-nations-study-on-the-role-of-technology-in-social-progress/> (Accessed on 07/10/2026)

⁴ Ibid

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threats including climate change, biodiversity loss, and pollution, tracking air quality, measuring environmental footprints, and supporting sound decision-making processes⁵.

Harnessing AI is therefore a necessary imperative in order to support global progress towards sustainability. It has been observed that with the world lagging behind in meeting the 2030 deadline for attaining the global Sustainable Development Goals (SDGs), AI stands out not only as a technological breakthrough but also as a powerful tool that can accelerate progress across all 17 SDGs for people and planet⁶. Since achieving the SDGs requires integrated, informed and collaborative approaches that address interrelated global challenges such as poverty, climate change, environmental degradation, conflicts, and economic and social inequalities and injustices, advances in AI provide new opportunities to accelerate progress towards the SDGs by facilitating technology-based, systems-thinking approaches and data-driven insights⁷.

However, despite its role in driving global progress towards the SDGs, the emergence of AI can also undermine sustainability. In particular, it has been observed that biased, discriminatory and non-inclusive AI models exclude valuable knowledge systems including indigenous cultures and justice systems undermining equity, inclusivity, fairness and justice in Sustainable Development⁸. Consequently, it is imperative to ensure justice, fairness and equity by loading culture and indigenous justice systems into AI.

This paper examines the need to inculcate culture and indigenous justice systems into AI. The paper observes that culture and indigenous justice systems have been key drivers of sustainability especially in the Global South. It discusses how culture and indigenous justice systems ensure sustainability. However, despite their role as drivers of sustainability, the paper notes that culture and indigenous justice systems have largely been excluded in AI development and use. The paper posits that failure to integrate culture and indigenous justice systems into AI fuels algorithmic biases, discrimination, inequalities and injustices thus undermining sustainability. Consequently, the paper argues that loading culture and indigenous justice systems into AI is a necessary imperative for sustainability. The paper suggests how this ideal can be achieved towards safe, inclusive, responsive and equitable AI for Sustainable Development.

⁵ United Nations Environment Programme., 'How artificial intelligence is helping tackle environmental challenges' Available at <https://www.unep.org/news-and-stories/story/how-artificial-intelligence-helping-tackle-environmental-challenges> (Accessed on 07/10/2026)

⁶ United Nations Global Compact., 'Artificial Intelligence and the Sustainable Development Goals: Operationalizing technology for a sustainable future' Available at <https://unglobalcompact.org/compactjournal/artificial-intelligence-and-sustainable-development-goals-operationalizing> (Accessed on 07/10/2026)

⁷ Gohr. C et al., 'Artificial intelligence in sustainable development research' Available at <https://www.nature.com/articles/s41893-025-01598-6> (Accessed on 07/10/2026)

⁸ Millions on the African continent can't fully benefit from the AI revolution. This Princeton course aims to change that., Available at <https://research.princeton.edu/news/millions-african-continent-can%E2%80%99t-fully-benefit-ai-revolution-princeton-course-aims-change> (Accessed on 07/10/2026)

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2.0 Role of Culture and Indigenous Justice Systems in Sustainability

Culture is a crucial enabler of sustainability. The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines culture as the collective beliefs, values, customs, and practices that characterize a particular group or society⁹. According to UNESCO, culture encompasses language, art, religion, and social norms, shaping how individuals interact with one another and perceive the world. Culture has been described as both an individual and social construct¹⁰. For example, individual differences in culture can be observed among people in the degree to which they adopt and engage in the attitudes, values, beliefs, and behaviors that, by consensus, constitute their culture¹¹. Social differences on the other hand can be deduced in relation to how different groups of people perceive the various facet of culture including attitudes, values, beliefs, and behaviors¹².

Culture plays a key role in driving sustainability. For instance, culture provides a sense of identity for individuals and communities towards building resilient, innovative, inclusive and vibrant societies and nations¹³. Culture is who we are and what shapes our identity¹⁴. Consequently, it has been observed that no development can be sustainable without embracing culture¹⁵. Culture has been described not only as an instrument but a necessary foundation for meeting the overall aims of sustainability¹⁶. By embracing culture, it is possible to ensure that development is economically viable, socially inclusive and environmentally sustainable towards achieving all facets of sustainability¹⁷. It has been observed that culture and heritage can be positioned to create the conditions for local understanding and application of the SDGs¹⁸.

Due to its fundamental importance, it has been observed that development approaches that are responsive to culture and the unique needs of a place and community, and advance a human-centred approach to development anchored in culture, are most effective, and likely to yield

⁹ United Nations Educational, Scientific and Cultural Organization., 'Culture' Available at <https://www.unesco.org/en/query-list/c/culture> (Accessed on 07/10/2026)

¹⁰ Spencer-Oatey. H., 'What is Culture?.' Available at https://warwick.ac.uk/fac/soc/al/globalpad-rip/openhouse/interculturalskills_old/core_concept_compilations/global_pad_-_what_is_culture.pdf (Accessed on 07/10/2026)

¹¹ Ibid

¹² Ibid

¹³ United Nations Educational, Scientific and Cultural Organization., 'Culture' Op Cit

¹⁴ United Nations., 'World Day for Cultural Diversity for Dialogue and Development' Available at <https://www.un.org/en/observances/cultural-diversity-day/background> (Accessed on 07/10/2026)

¹⁵ Ibid

¹⁶ Parameswara. A., 'Exploring the Approaches of Culture on Sustainable Development' *South East Asia Journal of Contemporary Business, Economics and Law.*, Volume 21, issue 5 (2020)

¹⁷ Ibid

¹⁸ Thomas. I., 'The Potential of Culture and Heritage for Sustainable Development' Available at <https://www.britishcouncil.org/voices-magazine/potential-culture-and-heritage-sustainable-development> (Accessed on 07/10/2026)

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sustainable, inclusive and equitable outcomes¹⁹. In particular, culture has been a driver and enabler of sustainability in Africa and the Global South for many centuries. For instance, it has been observed that culture promotes a sense of cohesion, common identity and shared interests which has enabled communities in Africa and the Global South to act collectively and enhance mutual interests²⁰. In particular, due to its focus on harmony and interdependence between humanity and nature, culture has enabled indigenous peoples and local communities all over the world to develop unique and valuable knowledge systems, values and practices that emphasize harmony between people and planet towards sustainability²¹. Cultural values and practices have led to the development of Traditional Ecological Knowledge (TEK) which has enabled indigenous and local communities, especially in Africa and the Global South, to promote sustainability²².

In addition to culture, indigenous justice systems play an important role in driving sustainability. Indigenous and traditional justice systems have been described as informal processes of conflict management that are governed by the customary law of various communities²³. These justice systems are applied to resolve disputes by the applicable customary law, or other relevant customs, practices or rules, and often on a case by case basis²⁴. Indigenous justice systems have been applied in conflict management in Africa and the Global South for many centuries before the introduction of Western justice systems. Consequently, it has been correctly observed that indigenous and traditional justice systems predate conventional court adjudication of disputes all over the world²⁵. These justice systems provide a customary, informal and community-based approach that can strengthen access to justice especially for indigenous and local communities who face hurdles in accessing justice through formal court processes²⁶. In particular, indigenous justice systems resonate well with indigenous and local populations and are therefore more effective in providing a sense of justice and restoring community relationships²⁷. They are also anchored in the culture and customs of indigenous and local communities are thus effective in meeting local justice needs towards sustainability²⁸. Indigenous justice systems in Africa and the

¹⁹ United Nations., 'Culture: A Driver and an Enabler of Sustainable Development' Available at https://www.un.org/millenniumgoals/pdf/Think%20Pieces/2_culture.pdf (Accessed on 07/10/2026)

²⁰ Local Communities., Available at <https://toolbox.iccaconsortium.org/meanings-and-more/local-communities/> (Accessed on 07/10/2026)

²¹ Sinthumule. N., 'Traditional ecological knowledge and its role in biodiversity conservation: a systematic review' Available at <https://www.frontiersin.org/journals/environmental-science/articles/10.3389/fenvs.2023.1164900/full> (Accessed on 07/10/2026)

²² Ibid

²³ Kariuki. F., 'Traditional Dispute Resolution Mechanisms in the Administration of Justice in Kenya' Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3646995 (Accessed on 07/10/2026)

²⁴ Ibid

²⁵ Republic of Kenya., Office of the Attorney-General and Department of Justice 'Sessional Paper No. 4 of 2024 on The National Alternative Dispute Resolution Policy'

²⁶ Traditional Justice Systems., Available at <https://gsdrc.org/topic-guides/transitional-justice/concepts-and-mechanisms/mechanisms/traditional-justice-systems/> (Accessed on 07/10/2026)

²⁷ Ibid

²⁸ Ibid

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Global South emphasize peace, reconciliation, harmony, restorative justice, collaboration and social cohesion and therefore provide an appropriate platform towards strengthening access to justice²⁹.

Culture and indigenous justice systems are therefore key drivers of sustainability especially in Africa and the Global South. However, the current architecture of AI marginalizes and excludes these valuable resources undermining equity, inclusivity, fairness and justice in Sustainable Development. In particular, it has been observed that the use of foreign AI models fuels biases, injustices and discrimination in key sectors including education, healthcare and agriculture in Africa and the Global South since imported AI models neglect unique data sets that reflect cultural, ethical and linguistic needs of indigenous and local communities³⁰. Utilising AI in justice systems in Africa and the Global South can also lead to biases and discrimination against indigenous justice systems undermining core values such as reconciliation, peace, harmony, restorative justice and *Ubuntu*. It is therefore necessary to infuse culture and indigenous knowledge systems into AI for sustainability.

3.0 Loading Culture and Indigenous Justice Systems into Artificial Intelligence

Culture and indigenous justice systems play a key role in promoting sustainability. Consequently, with AI being widely integrated into the sustainability discourse, failure to embrace culture and indigenous justice systems into its architecture undermines justice, fairness, inclusivity and equity in Sustainable Development with disproportionate impacts on indigenous and local communities in the Global South. Consequently, inculcating culture and indigenous justice systems into AI is a necessary imperative for Sustainable Development.

In order to effectively inculcate culture into AI, it is imperative to embrace and train AI models on inclusive and diverse data sets that uphold the cultural values, norms and knowledge systems of vulnerable groups including indigenous and local communities. In particular, it has been observed that AI models trained on indigenous data sets in key sectors such as education, healthcare, agriculture and environmental governance can ensure the use of cultural values, philosophies and knowledge systems such as TEK to foster sustainability³¹. Harnessing all languages in AI is also key towards ensuring that culture is effectively loaded into this powerful technology. It has been correctly observed that language is one of the cultural strengths of every society³². With AI innovations concentrated in a few languages, failure to harness all languages

²⁹ Uwazie. E., 'Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.' *Africa Security Brief*, No. 16 of 2011

³⁰ African-language Large Language Models (LLMs) present major opportunities for the continent., Available at <https://medium.com/code-for-africa/african-language-large-language-models-llms-present-major-opportunities-for-the-continent-8a92a69518b3> (Accessed on 07/10/2026)

³¹ African-language Large Language Models (LLMs) present major opportunities for the continent., Op Cit

³² 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 07/10/2026)

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undermines cultural and linguistic diversity while also threatening indigenous knowledge systems and norms which are usually preserved in indigenous and local languages³³. Including all languages in AI is key towards ensuring that the adoption of AI this technology is appropriate and context-specific while also harnessing cultural values, norms and language systems which are usually preserved in indigenous and local languages³⁴. Collaborating with indigenous and local communities in Africa and the Global South is also necessary in order develop AI technologies that are not only scientifically robust but also culturally, socially and contextually appropriate³⁵.

In addition to culture, loading indigenous justice systems into AI is necessary imperative for sustainability. In particular, there is need to ensure that the integration of AI into court systems and Appropriate Dispute Resolution (ADR) processes such as negotiation, mediation, arbitration and conciliation in Africa and the Global South upholds indigenous legal norms, values and philosophies. Indigenous justice systems in Africa and the Global South align with community-oriented societies in these regions, where reconciliation, peace, restorative justice and harmony are prioritized over retribution³⁶. It has been observed that AI and other modern technologies are being widely integrated into justice systems, including both court processes and ADR, in Africa and the Global South in order to enhance efficiency, accessibility, affordability and responsiveness in access to justice³⁷. Consequently, by incorporating indigenous justice systems in AI, this transformative technology can support access to justice in Africa and the Global South including through Afro-centric dispute resolution that focuses on peace, harmony and reconciliation while also enhancing the capacity of vulnerable groups including indigenous peoples and local communities to access justice through acceptable, affordable, responsive and culturally-relevant systems and processes³⁸.

Through the foregoing, it is possible to effectively load culture and indigenous justice systems into AI for sustainability.

³² Ibid

³³ Ibid

³⁴ 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 07/10/2026)

³⁵ United Nations Development Programme., 'People-Centric AI for Conserving Biodiversity' Available at <https://www.undp.org/sites/g/files/zskgke326/files/2025-12/people-centric-ai-for-conserving-biodiversity.pdf> (Accessed on 07/10/2026)

³⁶ Africa: A Rising Hub for Alternative Dispute Resolution., Available at <https://www.linkedin.com/pulse/africa-rising-hub-alternative-dispute-1vlye/> (Accessed on 07/10/2026)

³⁷ Okeke. U., 'Enhancing Access to Justice Through Technology in Developing Countries: Technology-Based Initiatives, Challenges and Emerging Technologies' *International Journal for Court Administration.*, Volume 16, Issue 3 (2026)

³⁸ Ibid

4.0 Conclusion

The emergence of AI provides opportunities to accelerate global progress towards sustainability. However, the current framework of AI is not inclusive due to biases exclusion and discrimination against indigenous cultures and justice systems which play a key role in fostering sustainability especially in Africa and the Global South. Loading culture and indigenous justice systems into AI is therefore a necessary imperative for justice, equity, fairness and inclusivity towards sustainability.

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