

**Indigenous Alliances for Advancing the Pan-African Great Green Wall of the Sahel**  
**Ousseyni Kalilou**

Ecological Security Fellow at the Converging Risks Lab of the Council on Strategic Risks; Founder and CEO of the Gum Arabic Institute of Poverty Alleviation

[ousseynikalilou@gmail.com](mailto:ousseynikalilou@gmail.com)

[ok669@nyu.edu](mailto:ok669@nyu.edu)

[Tel:0016464640011](tel:0016464640011)

Po. Box 13437

Greensboro, NC 27415

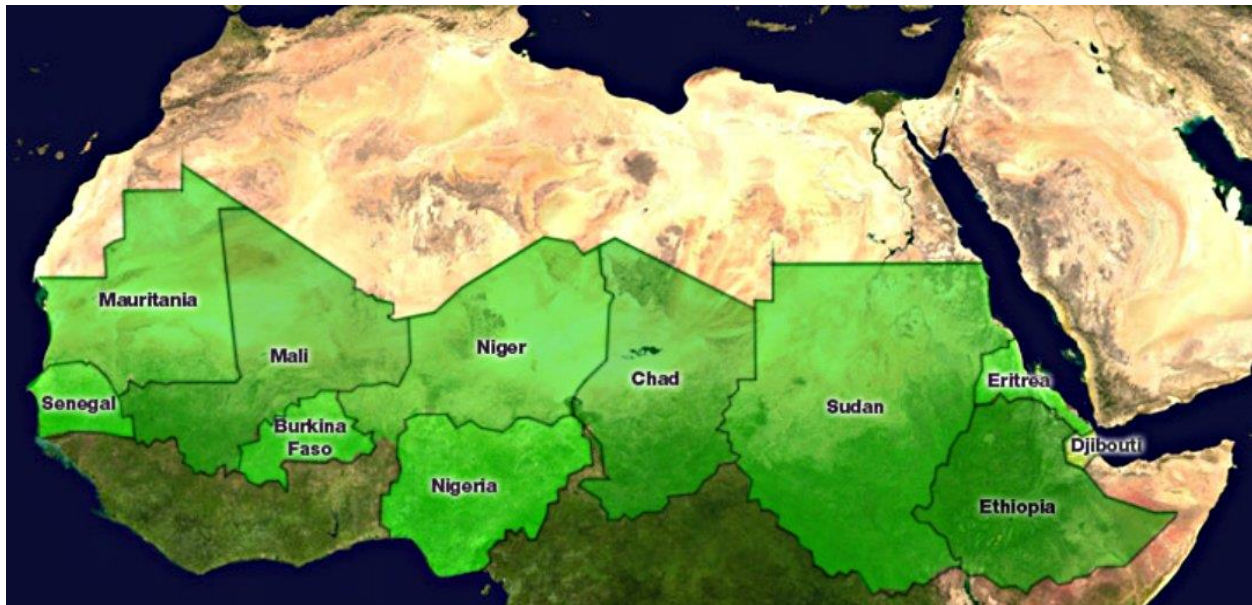
**Abstract**

The pandemic shock unfolded a great need for prioritizing the local solutions to the global humanitarian issues, not making an exception for the SDGs. But localizing the implementation of such strategies has not been robust. The premises of such revisiting of the sustainable development goals were, early on, in the ante-covid-19 era, when in 2007, the African Union launched the Great Green Wall, a flagship of the U.N system, to combat the effects of climate change on the environment and livelihood in the Sahel region. Yet, this African-led initiative shies away from the bottom-up approach. This literature review foresights how a most plausible nexus of top-down and indigenous approaches- so far left out- may help develop a sound sustainable development achievement at the local level. The Article 7.5 of the Paris Agreement, the Intergovernmental Panel on Climate Change (IPCC) report 2022, the UN Sustainable Development Goals (SDGs), and Intergovernmental Science- Policy Panel on Biodiversity and Ecological Services (IPBES) highlight the need for taking in consideration the indigenous thinking and practices. COVID and the subsequent vaccine diplomacy issue, aggravate the local communities' distrust of traditional humanitarian actions. Henceforth, this study explores the benefits of including the indigenous knowledge and practices in the Great Green Wall Initiative by: a) analyzing the need for a practical implementation of the sustainable development goals; b) using the case of the Green Wall to highlight the importance of Indigenous Knowledge to ecological security, water security, food security, economic security, social security, and livelihood copy strategy. This desk research consulted text reports, webpages, official documents, news articles, and research papers. The paper proposes morphing the current SDGs into a more localized and harmonized transformative adaption of the top-down and bottom-up approaches. This study is significant because it contributes to restating specific challenges of implementing the present SDGs and the future opportunities of a more pragmatic sustainable development agenda.

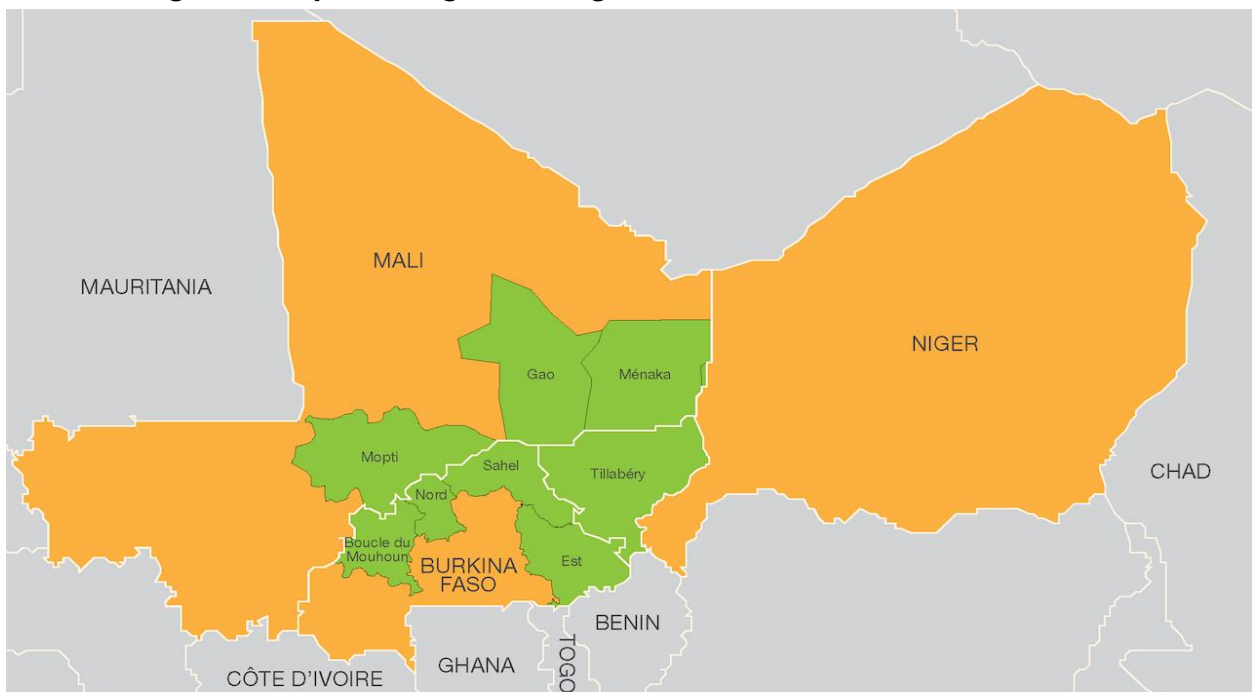
**Keywords:** Decolonization, climate security, indigenous knowledge, great green wall

## 1. Introduction

Sahelian countries are fighting against desertification. The Great Green Wall (GGW) is a flagship of the UN system, and it is an African Union's initiative launched in 2007 to plant billions of trees to create a natural wall against desertification in 11 million kilometers square by 2030. A budget of \$8 billion was destined for the project, but the progress towards the goal has been plodding. So, to reverse the slow pace of the movement, the local community's involvement has been a sine qua non.



**Source: bing.com: map showing the configuration of the Pan-African Green Wall**



**Source: bing.com: map showing the configuration of the Liptako Gourma of the Sahel**

This paper explores whether using Indigenous Knowledge (IK) in the GGW initiative may help attain more desirable sustainable development practices by studying the case of the Songhai tribe in the Liptako Gourma of the Sahel. The Liptako Gourma is the Tri-Border area between Niger, Mali, and Burkina Faso. The zone is witnessing atrocities in attacks on the military and civilians (OCHA 2020). At the same time, climate change and environmental degradation are worsening the humanitarian crises created by the insurgencies (OCHA 2020). Because of the importance of its tradition, cultural heritage, and richness of its history, the Songhai ethnic group case is significant in illustrating the case study. The Songhai Empire, settling near the Niger River and the "West African savanna, offered many ecological advantages that facilitated the formation of empires" (Streit 2017). As part of this study, the literature review reveals that the Songhai ethnic group flourished from important socio-economic and environmental innovations related to its geographical situations. The Niger River, the trans-Saharan trade, and the gold mines contributed to the apogee of the empire. However, the current development and humanitarian issues leave no traces of the wealthiest empire in the world (Streit 2017). Henceforth, how plausible the convergence of the indigenous and the modern knowledge systems in the case of the GGW would facilitate a more adaptive sustainable development agenda? This work gives a brief review of the method used in part 2. This paper also introduces the benefits of including the Songhai indigenous knowledge (SIK) and practices in the Great Green Wall Initiative in part 3, then spins the discussion in part 4.

## **2. Research Method**

This inquiry is a qualitative illustrative case study based on the literature review of the primary and secondary sources. The literature review consisted of conducting a systemic review of the published studies on the GGW and Traditional Ecological Knowledge (TEK). As part of this review, keywords such as "green wall," "traditions," "indigenous," and "species" were used to search for relevant data. It is essential to highlight that this research approaches indigenous knowledge as socio-ecological and economic thinking and practices rooted in the pre-colonial era. The scrutiny of the relevant data weeded out thoughts and patterns of practices which may have emerged in the modern epoch. The assumption was that restoring traditions and cultures may lead to more effective environmental peacebuilding efforts in the Liptako- Gourma of the Sahel.

## **3. Results**

### **3.1 Analyzing the need for a practical implementation of the sustainable development goals**

#### **3.1.1 The Songhai Indigenous Knowledge**

Indigenous knowledge (IK) is community-level decision-making about natural resource management for food security, social security, economic security, human and animal health, education, and other vital economic and social activities (Gorjestani 2000). IK is, hence, a knowledge within a region where a specific tribe or ethnic group has passed on the knowledge from generation to generation to manage and sustain their livelihood, alter alias, the environment, and its natural resources on which they intrinsically depend. The SIK is stored explicitly in people's memories through the expression of cultural events and practices.

The Songhai Indigenous Knowledge (SIK) is a multidimensional and multisectoral approach to the sustainability of the community comprised of multiple villages spread geographically in the Liptako Gourma of the Sahel. The SIK concerns the safety and protection of the community (SDG16), the food system (from production, conservation, to consumption) (SDG12), food

security, water security, economic security, land tenure, health security, economic security (based on bartering), livelihood security (defined by natural resources available), social security, and environmental security (determined by the specific ecosystem of the region) (SDG1, 2, 3, 4, 5, 6, 7,8, 10, 12, 13, 14, 15,16,17). The Songhai people are so in tune with nature; that they forecast the weather event by observing specific patterns and signs from the elements of nature. As they have come to learn practical and sustainable ways to stay in harmony with nature to become a part, they are the best to care for their ecosystem.

The stratification of the Songhai participatory tribal community denotes gender, age, and class-based societal roles in ecological, religious, technical, socio-economic, and cultural dimensions. For instance, wise *Soyanke* (a sub-class in the societal hierarchy) holds the forest's secret, the land, the sky, and the water (SDG13, 14, &15). The *Diassara* (the traditional cast group) holds the wisdom of the history of the tribe (SDG 4). The *Diassara* narrates and unfolds the knowledge around cultural values, agricultural and livestock practices, and art objects via songs and reciting during rituals, ceremonies, rituals, and the like (SDG4). At the top of the hierarchy, the governance and the socio-political and jurisdictional institutions are managed by the *Koy* (the king or emperor), then *Amirou* (chief of the village), seconded by the *Kozey* (royal family and the nobles). The *Alfarey* (farmers) and the *Alkourkey* (herders) hold the agriculture and livestock secrets, respectively. The *alfarey* and *Alkourkey* observe animals, insects, and birds' behaviors to anticipate weather and seasonal variations.<sup>1</sup> Traditional conservation helps maintain the natural resources and biodiversity, and traditional sustainable land management practices (SDG12). The traditional agricultural practices<sup>2</sup> admit and solicit the livestock, holistically used for manure and milk in exchange for millet. This transboundary cohabitation and cooperation between herders and farmers may align with Sustainable Development Goal 16 (SDG16).

Many nature-based solutions for adaptation are already protecting communities and nature from climate impacts (UNSDG 2021). Women play a tremendous role in natural resources management and conservation as they participate in the ancestral agro-ecology (traditional ecological knowledge applied in agriculture) (SDG13, 14, &15) by cultivating okra, peanut, sesame, beans, and the like (SDG1 & 2). At the same time, they breed animals and practice other artisanal activities related to the ecosystem. For instance, the Songhai women and men, and youth participate in laying the *Tondi Garou* (buns of stones) to recuperate the degraded lands (SDG5 & 10). Women have the Traditional Ecological Knowledge (TEK) inherited from their ancestors to help mitigate climate change and reverse ecological disruptions.

The Liptako geographical context, vegetation standing, and zonal configurations have influenced the SIK system of sustainable practices on the ecosystem and utilization of natural resources to stay in harmony with nature. Hence, the ancestral customs and ethos characterize the Songhai cultural and ecological practices of myths, taboos, and traditional norms (Senanayake 2006). Some animals and birds are forbidden as food, e.g., in the Sorko (fisher) tribe within the Sonrai ethnic group, the wild pigeon and a catfish called *desi* are forbidden in their diet. Botanical experts in the villages and the healing gurus of SIK (the *Zima*) know the secret of the plants as therapeutic tools (SDG15). The *Dongo* (thunder or the God of the sky and the rain) and the *Harakoy* (the God of the river) are given domestic animals and staples in the form of alms to make the pluvial season abundant (Rouch 1949a, Rouch 1949b, Rouch 1950). The *Zima* or the *Soyantche* may rid a typical constellation of the stars in the sky, or a typical wind as an early warning for a bad season. A ceremony is held to expel the evil forces from the village and invoke the guardians of the spirit

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<sup>1</sup> Walter, et al. 2022. The role of indigenous knowledge in climate change adaptation in Africa, October 2022, [Environmental Science & Policy](https://doi.org/10.1016/j.envsci.2022.06.004) 136(2):250-260. DOI: [10.1016/j.envsci.2022.06.004](https://doi.org/10.1016/j.envsci.2022.06.004)

<sup>2</sup> These techniques align with agroecology, which is environmentally sustainable.

to protect the village (SDG16). Seven sea shells or cola nuts give luck (Rouch 1949b). During the hunting, the *Sorko* (the fishers and guardians of the river) chant, "Loo loo boto, boo-boo boto," to make snake venom more severe in the animals. Furthermore, the *Gawe* (hunters) who hold the secret of the fauna lead the hunting (Rouch 1989) (SDG15). The meat from hunting and natural resources are shared in wealth redistribution (Garam). At the same time, the social fabric is built around a system of mutual help and social and economic welfare (*Bogou*) (SDG16 & 17).

### **3.1.2 The Pan-African Great Green Wall initiative: An opportunity to adapt modern sustainable development to the traditional ecological knowledge.**

The local community's involvement in resolving the slow pace of the movement of the GW has drawn the attention of the stakeholders. This echo in the thought of Vermillion (2020 para 5) when he wrote: "the project evolved from a wall of trees to more of a continent-wide movement... based on proven indigenous practices... that is tree planting, which the Great Green Wall largely hires locals to do... it is indigenous adaptations for agriculture or simply growing grass." With climate change increasing the extreme weather events in the already hottest region of the world, tree planting would not correctly work in reversing the desertification. Therefore, modern techniques have taken ancient practices of greening into consideration.

Stakeholders involved in the GW can rely on the agropastoral climate adaptation measures, which consist of conforming farm decisions with pasture patterns and predicting the drought (Walter et al. 2022). The authentic Songhai agroforestry techniques consist of utilizing indigenous species with traditional sustainable land management to preserve or restore land for food security and water security, and climate resilience. Carbon sequestration using the acacia gum tree with the indigenous SLM technique of half-moons (Kalilou 2021) or pits (Zai) is an illustrative example.

### **3.2 Songhai Indigenous knowledge (SIK)'s extinction**

SIK is developed and transmitted through history from generation to generation, but the transmission of the knowledge has known hiatus since colonization. Localizing the Pan African GW initiative may be an excellent opportunity to revive that indigenous knowledge and practices. The modern technics inherited from mercantilist imperialism and the societal transformation agenda of colonization and colonialism threaten traditional sustainable agricultural practices. The spiritual systems and beliefs are consequently declining. Islam, Christianity, and modernization are helping erode the SIK, which has been misunderstood or deliberately misinterpreted. Consequently, the distortion of the Songhai societal norms is creating an imbalanced system of the governance of the environment and the natural resources. Hence, socio-ecological improvement requires reviving the interlinkages between humans, nature, and culture.

As learning is a cultural component, modern learning, by not making room for ancestral knowledge, is set to deliberately extinct the Songhai people's culture. The alienation is rising among those "modern Songhai" who are happy to be among the "civilized," for they prefer the borrowed culture from the colonial and neocolonial system to the detriment of their ancestral culture and traditions. The Songhai cultural thriving aligns with the sustainable development agenda. However, cultural thriving can only be attained through decolonizing the current educational system (Paula. 1998). The colonial educational system is shaping the indigenous Songhai's thinking and way of life.

As the nature-culture nexus is no more dominant in learning, the Songhai self-governance is impossible. This echoes the thought of Easton when he states that "positive new development

can happen, but only if the people themselves stay in control of their resources, economies, and culture [...] when people are allowed to work from internally, expand, and change their institutions and knowledge systems "(Eaton et al. 2000).

Modern environmental education is impacting the SIK in many ways. First, modern social science and its narrative push for an agenda that favors SIK development. The colonial school system bases the understanding and approach of the SIK on the western knowledge of the science of nature, which does not consider the Liptako Gourma socio-ecological reality on the ground. This phenomenon starts in elementary school. Hence, the Songhai youth's learning about climate change and the environmental degradation in the colonial learning system undermines the native educational system set to be transmitted from the elders via the traditional practices. The science of education based on land, sky, water, and the forest (Rouch 1989) may not have terminologies such as "climate action," "life on land," "life below water," "quality of education," "gender equality," and the like. However, it covers Songhai's socio-economic and ecological sustainability within the geographical area.

Second, the modern teaching of natural science- copied on the French educational system- is about the dominance of nature in favor of the human materialistic interest. That teaching puts aside the Songhai education of natural science, which gives preference to mutual exchange by taking from nature what is needed (food, shelter, health, and the like) to sustain livelihood. At the same time, however, humans give back to nature through conservation and sacrifices (Rouch 1989).

Third, while colonial education emphasizes the laboratory examination and theories to explain and implement sustainable development, the SIK and the educational system start from the traditional story tales in the evening when the youth gather around the fire and listen to the elders transmitting the wisdom. Wisdom is a body of sound environmental, economic, and social norms about the ecosystem and the sustainable interactions of humans with nature (Rouch 1950, Rouch 1989). The meaning of the land, water, forest, and the sky in the daily life of the native Songhai is fading away in favor of the colonial teaching, which additionally makes the colonial language a requirement for success. Moreover, that situation contributes to the confusion in the young native Songhai's mind, leading to the self-denial of the alienated adult Songhai.

Finally, the slanting of the SIK and teaching via the predominance of the colonial educational system concerns the role and the position of women<sup>3</sup> in the Songhai sustainable development teaching, which has been written off or denigrated in the societal classification by modernization, Islam, and Christianity (Deepa 2005, Paula. 1998).

#### **4. Discussion**

Songhai people have more knowledge and have accumulated practical knowledge to be more climate-resilient. Indigenous knowledge has been built up for thousands of years through the oral canal from generation to generation. Nevertheless, modern scientific knowledge has hundreds of years of age. Hence, collaborating with practitioners, modern scientists, and indigenous scientists would help advance the GGW initiative.

The transfer of knowledge in the interaction of modern science and SIK on the GGW initiative and other practices should be beneficial for implementing sustainable development as both groups

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<sup>3</sup> The ancient Sahel had queens and women leaders playing essential roles in decision-making concerning everyday life.



should profit. That would empower the local Songhai tribe, but it will be more practical and feasible for modern scientists to contextualize the traditional sustainable development. The localization of the partnership to include the village level of expertise will prove a sense of respect and adaptability of the SIK. This mixed approach of top-down and bottom-up approaches will consider the indigenous knowledge, which will help the policymakers and the practitioners understand the indigenous knowledge that has been built up but not recorded; therefore, it was unfortunately missed out in modern techniques (Senanayake 2006).

When communities get involved, the land restoration will be successful because they will take responsibility for ownership. Re-dynamizing the IK will have spiritual and cultural benefits for the community members, who will have more stamina to get involved in projects indispensable to the GGW, such as ecotourism. This approach will improve the community-led nature-based adaptation and mitigation of climate change and environmental degradation. Consequently, the transboundary national resource management in conflict or post-conflict situations may help enhance the community-based organizations' efforts to uplift the spiritual and cultural benefits of the livelihood of the communities.

These intrusions of foreign technologies and the traditional development theories and practices, along with the dislocation of knowledge by modern and colonial education, push for the disappearance of indigenous knowledge, which is the intellectual wealth of the poor in the rural areas (Senanayake 2006). In this logic, when the transfer of technology via scientists-indigenous interactions should aim to retain the retention of indigenous knowledge through constant repetition and word-of-mouth.

The international community, the local governments, the private sector, the civil societies, and the local communities cooperate for the well-being of the indigenous people while conserving their identity, promoting their human rights, and sustaining their environment to align with SDGs. It guarantees a promising future for the GGW. SIK's participation in implementing the SDGs in the Liptako Gourma is the best way to capitalize on the indigenous knowledge of sustainability, conflict prevention, and biodiversity conservation, all of which are necessary to the GGW achievement. This mixed approach may restore dignity, self-governance, and their rights to land, language use, and cultural flourishing while getting involved in the GGW. The SDGs "included specific mention of indigenous peoples and acknowledged that there [could] be no truly sustainable development without protecting the traditional knowledge and territories of indigenous peoples" (Campbell 2019).

However, the Limits of the study englobes the author's Bias (being originated from the area of study), the low external validity (the specific case of the Songhai tribe cannot represent the entire region of the Liptako Gourma comprising of other ethnic groups, such as Mossi, Gourmantche, and Fulani ethnic groups. There should be a need for ethnographic study, including field observation<sup>4</sup> and survey. Henceforth, a future study including the other ethnic groups across the Sahel via a comparative case study.

## **Conclusion**

This study hypothesizes and finds that a mixed approach of top-down, bottom-up, and indigenous knowledge may be more adaptive for sustainable development theories and practices. The case

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<sup>4</sup> With the current insecurity due to insurgency, it may be difficult to do field observation in the area.

study reveals a sound socio-economic and ecological Songhai Indigenous Knowledge, which has been transmitted from generation to generation through traditions, religion, and customary practices. However, the external relations of the Songhai Indigenous Knowledge in the form of trades, foreign religions, colonialism, and the like are threatening that knowledge to extinction. For the sake of both the modern sustainable development agenda and the Songhai Indigenous Knowledge, a transfer of knowledge is a sine qua non to a suitable approach to the GW initiative. A future study may be more exhaustive by including the other ethnic groups and proceed with a comparative case study with pattern and give insights for the entire region's future

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