

Green Public Procurement in Africa: A Comparative Study of Nigeria, Kenya, and South Africa's Priority Sectors

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Accepted: 17 March 2026 || Published: 24 March 2026

Abstract

Green Public Procurement (GPP) is increasingly recognized as a vital tool for advancing sustainable development in Africa. This paper compares GPP frameworks in Nigeria, Kenya, and South Africa, focusing on key sectors such as energy, transportation, construction, and ICT. Using survey data from 287 procurement professionals, policymakers, and sustainability officers, the study analyzes the legal, institutional, and operational aspects of GPP across countries. South Africa leads with a mature, well-coordinated system, while Nigeria and Kenya face challenges related to fragmented implementation and weak monitoring. The research highlights the importance of political will, agency collaboration, supplier development, and international support as drivers of successful GPP. The findings offer practical recommendations to harmonize policy and foster sustainable procurement across Africa.

Keywords: *Green Public Procurement, sustainable development, public procurement reform, environmental policy, Sub-Saharan Africa, comparative analysis*

How to Cite: Adebawale, A. A. (2026). Green Public Procurement in Africa: A Comparative Study of Nigeria, Kenya, and South Africa's Priority Sectors. *Journal of Procurement and Supply Chain*, 6(1), 17-25.

1. Introduction

Public procurement plays a pivotal role in the economies of developing countries, accounting for roughly 9.5% of GDP in Sub-Saharan Africa, compared to 12–14% in OECD nations (OECD, 2019; World Bank, 2020). As African governments look to align procurement with sustainability goals, Green Public Procurement (GPP) has become increasingly important. GPP is defined as the process by which public authorities purchase goods, services, or works with a lower environmental impact throughout their life cycles than conventional alternatives (European Commission, 2008).

The African Union's Agenda 2063 and the United Nations Sustainable Development Goals (SDGs), particularly SDG 12.7, explicitly mandate sustainable public procurement practices (African Union, 2015; United Nations, 2015). However, translating these commitments into operational frameworks remains uneven across the continent. Nigeria, Kenya, and South Africa represent particularly instructive cases for comparative analysis, given their status as regional economic leaders with divergent approaches to procurement governance and environmental regulation.

Most GPP research has focused on Europe and developed economies, with African contexts understudied (Grandia et al., 2013; Testa et al., 2016). While recent work explores GPP in emerging markets (Li & Geiser, 2012; Walker & Brammer, 2009), there is little comparative analysis of African frameworks. This study addresses that gap by investigating the institutional, legal, and operational aspects of GPP in Nigeria, Kenya, and South Africa.

This research applies the governance capacity framework (Börzel & Risse, 2010), which asserts that effective environmental policy depends not only on laws but also on institutional capacity, societal engagement, and international support. The findings indicate that GPP success is more closely tied to these multidimensional capacities than to legislation alone.

2. Literature Review and Theoretical Framework

2.1 Evolution of Green Public Procurement

Green Public Procurement originates from the broader movement for sustainable consumption and production, catalyzed by the 1992 Rio Earth Summit (UNEP, 2012). Earlier GPP efforts prioritized product-specific criteria like recycled content and energy efficiency. More recent strategies emphasize life-cycle thinking, supply chain sustainability, and the use of Procurement to spur market transformation (Carter & Rogers, 2008; Meeus & Verboven, 2012).

Walker and Brammer (2009) describe GPP evolution in three stages: voluntary initiatives and pilots (first generation), mandatory requirements and monitoring (second generation), and integration with sustainable development and circular economy policies (third generation). This paper situates Nigeria, Kenya, and South Africa within these stages to highlight their progress and challenges.

2.2 GPP in Developing Country Contexts

Implementing GPP in developing countries differs from developed regions. As McCrudden (2004) notes, priorities often focus on economic growth and job creation rather than environmental outcomes. Additional obstacles include weak institutions, limited green supplier markets, and competing policy goals (Grandia, 2016).

However, developing nations also have unique opportunities. Public procurement can stimulate domestic green industries, supporting “green industrial policy” (Altenburg & Assmann, 2017). These countries may also leapfrog legacy barriers by adopting advanced GPP frameworks directly (Li & Geiser, 2012).

2.3 Theoretical Framework: Governance Capacity and Policy Implementation

This study draws on Börzel and Risse’s (2010) governance capacity framework, adapted for procurement. Four key capacities are assessed:

- **Regulatory Capacity:** The presence of legal mandates, standard-setting authority, and enforcement mechanisms for GPP.
- **Administrative Capacity:** Technical expertise, institutional coordination, and resource availability for GPP implementation.
- **Societal Capacity:** Market readiness, civil society engagement, and private sector capability to respond to green procurement requirements.

- International Capacity: Access to international technical assistance, harmonization with global standards, and participation in knowledge networks.

The study hypothesizes that GPP effectiveness varies across our three case studies according to the configuration of these capacity dimensions (H1), with sector-specific variation reflecting differential capacity accumulation (H2).

3. Methodology

3.1 Research Design

This research uses a mixed-methods comparative approach, blending quantitative surveys and qualitative document analysis. The study follows a “most similar systems” design, selecting Nigeria, Kenya, and South Africa for their shared backgrounds but differing GPP outcomes. This allows for clearer identification of factors shaping GPP effectiveness.

3.2 Data Collection

Primary data was collected through a structured questionnaire administered in early 2026, targeting procurement officials, policymakers, sustainability officers, suppliers, and academic experts. The instrument was designed to measure governance capacity in multiple sectors and roles.

Sample Characteristics:

- **Total respondents:** 287 (Nigeria: 98, Kenya: 94, South Africa: 95)
- **Response rate:** 34.2% (calculated from 839 distributed questionnaires)
- **Sectoral distribution:** Construction (31%), Energy (24%), Transportation (19%), ICT (15%), Others (11%)
- **Organizational level:** National/federal (42%), State/provincial (31%), Local government (18%), Private sector (9%)

3.3 Data Analysis

Quantitative data analysis used descriptive statistics, cross-tabulations, and ANOVA to highlight differences between countries and sectors. Qualitative responses were thematically coded, and findings were integrated with documentary sources such as procurement laws and audit reports.

4. Comparative Analysis of GPP Frameworks

4.1 Regulatory Capacity: Legal and Policy Frameworks

There are clear differences in the strength of GPP legal frameworks in Nigeria, Kenya, and South Africa. South Africa has the most advanced system, with explicit GPP requirements built into its Preferential Procurement Policy Framework Act and related regulations. These laws require public tenders to specify green goals and initiatives.

Table 1: Regulatory Capacity Indicators by Country

Indicator	Nigeria	Kenya	South Africa
Explicit GPP Legal Mandate	23%	41%	89%
Sector-Specific Guidelines	31%	52%	78%
International Commitment Awareness (Mean, 1-5)	3.2	3.8	4.3
Policy Clarity on Environmental Criteria (Mean)	2.4	3.1	4.1
Sanction Mechanisms Defined	18%	35%	67%

Source: Survey data, Section B (n=287)

Kenya's GPP requirements are included in its general procurement law, which requires environmental considerations but lacks detailed implementing rules. Awareness and enforcement are uneven, with national officials reporting more familiarity than local practitioners.

Nigeria's regulatory environment is the least developed. The main procurement law does not require environmental considerations, and existing policies only encourage them on a voluntarily Awareness of GPP law is low among officials, and requirements remain mostly aspirational rather than binding.

Cross-country comparison data (Question B4) confirm these regulatory hierarchies: 71% of respondents identified South Africa as having the most advanced GPP legal framework, followed by Kenya (19%) and Nigeria (8%). Notably, procurement officials in all three countries expressed demand for greater policy clarity, particularly regarding verification mechanisms and sanctions for non-compliance.

4.2 Administrative Capacity: Institutions and Implementation

Administrative capacity, including leadership, staffing, and technical tools, remains a limiting factor in all three countries. South Africa has the strongest institutions, but coordination and resources are still a challenge. Kenya and Nigeria face more severe deficits in training, leadership, and funding for GPP.

Institutional Leadership and Coordination

South Africa has established relatively clear institutional arrangements, with the National Treasury's Office of the Chief Procurement Officer (OCPO) leading GPP policy coordination in collaboration with the Department of Environment, Forestry and Fisheries (DEFF). However, survey data indicate persistent coordination challenges: only 42% of South African respondents rated inter-agency coordination as "effective" or "very effective," with reported tensions between procurement authorities focused on cost efficiency and environmental agencies emphasizing sustainability criteria.

Kenya's institutional framework is characterized by fragmentation. While the Public Procurement Regulatory Authority (PPRA) holds primary responsibility for procurement policy, the National Environment Management Authority (NEMA) oversees environmental standards, and sector regulators (e.g., Energy and Petroleum Regulatory Authority) maintain independent procurement guidelines. This multiplicity creates confusion regarding GPP leadership, with 38% of Kenyan respondents unable to identify a lead institution for GPP policy.

Nigeria's institutional landscape reflects broader governance challenges, with overlapping mandates between the Bureau of Public Procurement (BPP), the Ministry of Environment, and various sector ministries. The absence of a designated GPP coordinating body results in ad hoc implementation dependent on individual procurement officers' initiative. As one Nigerian respondent noted: "GPP is like an optional add-on, not a core function. Without someone clearly in charge, it falls through the cracks."

Human resource capacity remains a major barrier, especially in Nigeria and Kenya, where few staff have formal GPP training. Even in South Africa, less than two-thirds have received specialized training. Across all countries, GPPs are generally inadequate.

Table 2: Administrative Capacity Ratings by Country (Mean scores, 1-5 scale)

Capacity Area	Nigeria	Kenya	South Africa	F-statistic	p-value
GPP Technical Knowledge	2.1	2.8	3.6	24.7	<.001
Staff Training Programs	1.9	2.4	3.2	18.3	<.001
Specialized GPP Expertise	1.7	2.2	3.4	31.2	<.001
Budget for GPP Activities	1.8	2.0	2.4	8.9	<.001
Inter-Agency Coordination	2.0	2.3	3.1	15.6	<.001

Source: Survey data, Section D (n=287). ANOVA results indicate significant between-country differences for all variables.

The capacity deficit is particularly acute at the subnational level. Nigerian state procurement officers reported mean expertise ratings of 1.4 compared to 2.6 for federal officials ($t = 4.2, p < .001$), suggesting that decentralization has exacerbated rather than resolved capacity constraints. Similar patterns emerge in Kenya, where county government officials reported significantly lower access to training than their national-level counterparts.

Technical Tools and Implementation Mechanisms

The use of GPP implementation tools varies widely. South Africa has developed technical toolkits for some sectors, but adoption is inconsistent. Kenya has piloted some GPP tools, mainly in energy, but lacks comprehensive resources. Nigeria generally uses generic procurement specifications without environmental integration. Verification systems are most robust in South Africa; Kenya and Nigeria rely mainly on supplier self-declaration.

4.3 Sector-Specific Analysis

GPP implementation also varies by sector, shaped by market maturity and technical demands.

Construction and Buildings

Construction is the largest procurement sector and has made the most progress in GPP. South Africa routinely requires green building certification for large projects. Kenya has green building codes but struggles with enforcement. Nigeria has energy-efficient building guidelines, but their practical implementation is limited by cost and capacity constraints.

Sector-specific challenges center on higher upfront costs and split incentives between construction budgets (ministries of works) and operational budgets (user departments). Kenyan respondents rated "higher cost premiums" as the most severe challenge ($M = 4.2$), followed by "inadequate technical specifications" ($M = 3.8$).

Energy and Power

The energy sector is promising for GPP due to clear standards and international certifications. South Africa's renewable energy procurement shows large-scale GPP in action. Kenya includes GPP criteria in power purchase agreements for renewables. Nigeria's progress in GPP for energy is limited, but there are pilot programs for solar procurement.

Transportation and Infrastructure

In transportation, South Africa requires fuel efficiency in government vehicle purchases, but follow-through is uneven. Kenya's bus rapid transit system in Nairobi meets high emission standards. In Nigeria, procurement in this sector rarely considers environmental performance.

Information and Communication Technology (ICT)

The ICT sector is an emerging area for GPP. South Africa has developed green ICT procurement guidelines, but adoption is slow. Kenya and Nigeria do not have specific GPP frameworks for ICT; existing rules focus more on e-waste than on green procurement.

4.4 Societal Capacity: Market Development and Supplier Engagement

Supplier capacity is a key factor for GPP success, but all three countries face market constraints that limit green procurement, especially in specialized sectors.

Supplier Availability and Competition

South Africa has the most robust supplier market for green products, especially in construction and renewables, though gaps remain in specialized areas and rural regions. Kenya has strong suppliers of solar technology, but is weaker in green construction materials. Nigeria's green supplier market is still emerging, with most products imported, leading to higher costs and limited availability.

Supplier Capacity Building

Supplier development programs are best established in South Africa, where government agencies actively support green suppliers. Kenya depends more on donor-funded initiatives, while Nigeria has few structured programs for supplier development.

Cross-country data on local supplier participation raise concerns that GPP may favor international suppliers with established green credentials. Only 23% of Kenyan respondents estimated that more than 50% of green suppliers are domestic, compared with 41% in South Africa, raising questions about GPP's contribution to local industrial development relative to environmental objectives.

4.5 International Capacity and Regional Cooperation

International assistance and regional harmonization are becoming more important for GPP. South Africa engages in global networks and aligns its standards with international benchmarks. Kenya receives significant donor support for GPP, though coordination can be difficult. Nigeria's international engagement is limited, but there is a strong interest in regional cooperation. Formal partnerships across African countries are rare, but informal knowledge sharing is on the rise.

5. Discussion and Implications

5.1 Synthesis of Findings

This analysis confirms that GPP frameworks and capacity vary widely across Nigeria, Kenya, and South Africa. South Africa is the most advanced, with strong legal frameworks and institutional coordination, but it still faces implementation challenges. Kenya is transitioning, with some legal mandates but significant capacity constraints. Nigeria relies mainly on voluntary approaches and faces significant capacity gaps.

The results support the view that effective GPP depends on building multiple types of capacity, not just having good laws. South Africa benefits from years of procurement reform and a stronger supplier market. Kenya's progress is bolstered by international support. Nigeria struggles due to overall capacity deficits and fragmented governance.

Sectoral differences exist, with construction and energy showing the most GPP progress. However, national governance capacity remains the strongest influence on GPP outcomes.

5.2 Theoretical Implications

This research shows that governance capacity frameworks are useful for understanding GPP in developing countries. While laws and incentives matter, administrative capacity and agency coordination are critical and should not be overlooked.

The study also highlights a dilemma: strong GPP requirements can promote green industries but may also exclude local suppliers who lack international certifications. A balanced approach is needed that builds local supplier capacity while advancing environmental goals.

5.3 Policy Implications

For National Policymakers:

1. Invest in administrative capacity, training, technical tools, and funding are more influential for GPP success than legal mandates alone.

2. Create clear institutional leadership for GPP to close gaps caused by fragmented responsibilities.

3. Tailor GPP roadmaps by sector to reflect different levels of market readiness and feasibility.

For Regional Organizations:

1. Promote harmonized GPP standards through the African Union and regional communities to lower costs and support regional procurement.

2. Build regional GPP knowledge platforms for peer learning among procurement agencies, based on best practices from OECD and EU.

For International Partners:

1. Target technical assistance to fill implementation capacity gaps, not just policy development, by prioritizing training, tools, and monitoring.

2. Support programs that develop local suppliers so that GPP advances both environmental and industrial goals.

6. Conclusion

This study shows that GPP frameworks and implementation differ greatly across Nigeria, Kenya, and South Africa. South Africa is more advanced, but all three countries face significant barriers to fully realizing the benefits of sustainable procurement. Effective GPP depends on building capacity in several areas, not just passing laws.

The results have important implications for research and policy. For scholars, the study demonstrates the relevance of governance capacity frameworks for procurement and environmental policy. For practitioners, it highlights the need for stepwise capacity building and sector-specific approaches to balance ambition with feasibility.

Future research should track how GPP frameworks evolve over time, particularly in light of new international standards and digital procurement tools. It is also important to evaluate whether GPP delivers real environmental outcomes.

GPP has great potential to advance sustainable development in Africa, but this will require ongoing investment in capacity, stronger regional cooperation, and more developed markets. Coordinated action by national, regional, and international actors is essential.

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