

Linking Sustainable Public Procurement and the Sustainable Development Goals in Zambia: A Preliminary Investigation

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Abstract—Achieving the Sustainable Development Goals (SDGs) is critical to achieving transformational results that support Zambia's developmental agenda. Public procurement is integral to the government's mission to deliver goods and services in a timely and economical manner beyond the value of money spent. This study explores the link between sustainable public procurement and the SDGs in Zambia. To validate the established links with public sector procurement in Zambia, the study employed qualitative research using semi-structured interviews with 12 public procurement officials. The collected data were analysed using thematic analysis. The findings indicate that public procurement plays a fundamental role in achieving the SDGs by helping deliver core public services that support SDGs and systematizing and co-delivering added value along the way. The study further established the importance of sustainable public procurement within the development context. The interviews were limited to mainstream public sector procurement entities in Lusaka, Zambia. Sustainable public procurement actions have the potential to impact SDGs. Promoting sustainable public procurement will enhance sustainable development and significantly improve the supply chain, benefiting the economy, society and environment. Findings will inform policy-makers how to strategically design sustainable public procurement policy by attuning it to procuring entities' objectives and priorities to contribute to attaining SDGs.

Keywords—Sustainable public procurement, sustainable development goals, SDG targets, Zambia.

I. INTRODUCTION

IN 2015, the United Nations adopted the SDGs, commonly known as the Global Goals. This resulted in a roadmap for sustained global development until 2030 enshrined in a document called "Transforming Our World: The 2030 Agenda for Sustainable Development". Though the document sets development goals based on sustainability, equality and inclusivity, the SDGs recognise different priorities and levels of development in individual countries [1].

Zambia is one of the countries committed to prioritising progress to attain the SDGs. In order to achieve the goals, Zambia has domesticated the SDGs in the current National Development Plan (8NDP) [2], [3]. The 8NDP has mainstreamed 86% of SDGs. Consequently, implementation and reporting on SDGs are coordinated through the institutional structures at national and sub-national levels

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using a cluster approach [2].

The country is promoting sustainable initiatives such as renewable energy, which has seen it diversify its energy mix from 99% reliance on hydropower production in 2011 to 80.6% in 2019. Climate agriculture, water harvesting techniques and green infrastructure are part of the climate adaptation interventions being promoted [3].

The SDGs are important for Zambia's desired sustained socio-economic growth. As such, sustainable public procurement is positioned as a strategic tool for the government's agenda to deliver public goods and services to achieve the SDGs on time. This study investigates sustainable public procurement as a key linkage in achieving Zambia's SDGs.

II. LITERATURE REVIEW

Public procurement constitutes the world's largest single marketplace, with a value of USD 13 trillion per year [4], [5]. It accounts for 12% of the Gross Domestic Product (GDP) in Organisation for Economic Co-operation and Development (OECD) countries and almost 30% in developing countries, accounting for more than 30% of total government spending [5], [7]. Public procurement's contribution to the global economy makes it a significant government activity. It has been recognised as a strategic function of public administration because of the enormous number of resources it consumes, as well as the critical objectives it seeks to promote, including SMMEs-related objectives [7]-[9].

References [10] and [11] suggest that for public procurement to be effective as a strategic tool, functions must be fully integrated with the organisation's overall strategic objectives utilising procurement strategies. As such, procurement has evolved from a support function to encompass strategic and operational activities [12].

Public procurement is fundamental in achieving SDGs [13], [14]. In the context of sustainable development, public procurement has been identified as a key element in delivering public goods and services that support SDGs [4]. This is achieved by systematically delivering goods and services that directly and indirectly add value to the SDGs [15].

Though sustainable procurement has been recognised as an individual target (SDG12), the majority of the SDG targets, which amount to about 82%, depend on sustainable procurement to be achieved [1]. As such, there is a need to create awareness of the vital role of sustainable public procurement in achieving the SDG targets [3]. Furthermore,

public procurement practices should align with national priorities supporting attaining SDG targets in a timely manner [5].

Through sustainable procurement, public institutions can deliver public goods and services whose life-cycle benefits are beyond the primary objective of procurement, which is value for money [4]. Sustainable procurement is seen as a multiplier for development and often leads to better results that prioritise long-term benefits over very short-term goals [15].

Following the seminal World Commission on Environment and Development Earth Summit in 1993, sustainable public procurement builds on decades of thinking on sustainable development to devise ways of minimising environmental destruction while considering social and economic factors [6]. This leads to making a case for sustainable public procurement, linking minimization of social and environmental risk with enhanced cost saving, and creating markets for products and services that enrich sustainability [17], [18].

To achieve a more resilient public procurement for sustainable development, principles of economic facilities, social opportunities, protective security, political freedom and transparency guarantees should be in place in the institutional public procurement policies and practices [19]. These are also essential to balance the three pillars of sustainable development (economic, social and environmental) [20]. Specific areas of how public procurement impacts the SDGs include the following:

A. Sustained, Inclusive and Sustainable Economic Growth

Sustainable public procurement is vital to promoting sustained, inclusive, and sustainable economic growth and improving the environmental and social impacts of the products and services the public entities procure (SDG8) [21], [22]. Further, sustained procurement ensures that suppliers throughout the supply chain respect workers' rights, thereby supporting decent employment opportunities in the public procurement supply chain [23].

B. Innovation

Sustainable public procurement is crucial for pushing markets towards innovative solutions that deliver resource use and adopting clean construction technologies (SDG9) [24]. Further, sustainable procurement can encourage innovation by SMEs, which reduces the cost of doing business and contributes to environmental protection by reducing carbon footprint [25]. This can be achieved by lowering financial credit requirements to support SMEs' participation and compete fairly in public procurement by providing innovative products and services [5], [26].

C. Sustainable Patterns of Consumption and Production

Sustainable procurement encourages sustainable patterns of consumption and production (SDG13) by promoting sustainable public procurement practices as per national policies and priorities [3], [27]. Procuring entities should consider sustainability criteria, such as the life-cycle impact of the products, to ensure product durability, energy efficiency,

and minimization of social impacts [28].

III. METHODOLOGY

The qualitative research approach was adopted for this study. The research participants of this study are government procurement officials involved in the procurement process in government departments. Participants were purposively selected by virtue of their professional role, expertise and experience [29]. The paper adopted a perception-based qualitative design that allowed in-depth exploration of respondents' experiences with implementing sustainable procurement and SDG linkages within the public sector [30].

Due to challenges in scheduling and securing interviews, the paper is informed by 12 of 18 interviews that were initially planned. The participants interviewed are reported anonymously in the paper using a code of interviewee I₁ to I₁₂. The order does not correspond to the sequence of interviewees.

Data from purposively selected participants were collected using semi-structured interviews [31]. Semi-structured interviews were chosen because they possess the strengths of both structured and unstructured interviews and counterbalance the weaknesses of the other [32]. The interviews with each participant lasted for 20-25 minutes. Further, semi-structured interviews allowed the researcher to interact and exchange ideas with the participants [33].

Collected data were thematically analysed. The process involved transcribing text from interviews [34]. Thematic analysis was used because it enabled the researcher to analyse a large quantity of data sets and identify themes [35]. Identified themes lead to the explanation and drawing of conclusions [36]. The findings are presented in the next section.

IV. RESULTS

The key findings on sustainable public procurement and the achievement of SDGs are presented based on interviews with the key informants. The responses are based on the number of times they were cited.

A. Profile of Respondents

The profile of respondents in terms of gender and work experience and the types of public procurement activities they are involved with are presented in Table I. The table shows that most respondents are male, representing 75%. Respondents with 11-15 years of experience related to public procurement activities are the highest, 42%. The second highest number of respondents has 16-20 years of work experience, 33%. The third-ranked number of respondents has 6-10 years of experience, while only one respondent has 1-5 years of work experience related to procurement in the public sector, representing 17% and 8%, respectively.

The highest number of respondents are involved with the works and services type of procurement, 42%. Respondents working with works-related procurement amounted to 33%, while those working with services type of procurement represented 25%.

Based on the demographic information, the responses given by the respondents are deemed credible and reliable, particularly in terms of the respondents' working experience in public procurement-related activities in achieving the study's objective.

TABLE I
 PROFILE OF RESPONDENTS

Gender	Frequency	Percentage
Male	09	75%
Female	03	25%
Total	12	100%
Work Experience		
1-5 years	01	08%
6-10 years	02	17%
11-15 years	05	42%
16-20 years	04	33%
Total	12	100%
Types of procurement		
Works	04	33%
Services	03	25%
Works and services	05	42%
Total	12	100%

B. Familiarity with the Concept of Sustainable Public Procurement

Familiarity with sustainable public procurement was identified as the first theme linking sustainable procurement and the SDG target in Zambia. During the interviews, the respondents were asked how knowledgeable and familiar they are about sustainable public procurement. The majority of the respondents indicated knowing the concept of sustainable procurement. Further, most respondents were familiar with sustainable procurement and its significance in public procurement.

"Sustainable procurement entails procuring goods and services that are friendly to the environment and people and ensuring that resources are utilised sustainably..." (I₂)

Another procurement official explained sustainable procurement as follows:

"...Sustainable procurement enables the procurement of goods and services within the public sector that respond to efforts for sustainable production and consumptions within the supply chain" (I₉)

While another official described sustainable procurement in terms of circular economy:

"...Sustainable procurement can help create a circular economy that aims to lessen the impact of purchasing goods and services in the economy..." (I₇)

C. Sustainable Procurement Practices in Public Procurement

The second identified theme is sustainable procurement practices in public procurement. Respondents were asked how their institutions are implementing sustainable procurement. Most respondents indicated that sustainable procurement was implemented within the pre and tendering stages of the procurement cycle, for instance, for infrastructure

procurement activities.

"...In terms of construction works, we employ sustainable procurement by assessing the sustainability of a project at the tendering bid evaluation stage..." (I₁₂)

Another participant mentioned that:

"...Using the method statement regarding how construction activities will be carried out, we check how the proposed works will contribute to minimising environmental damage. The requirement for the method statement is stipulated in the solicitation document and checked during the evaluation process of the submitted bid ..." (I₁₀)

In addition, one respondent expressed concern about the limitation of the procuring officials' role in ensuring the implementation sustainability of procured construction projects post-tendering stage.

"...Our function as procurement officials is limited to purchasing activities...though the methods statements of the projects commit to comply with social, environment and economic legislation, it is difficult to ascertain the practicality as the end users may not be keen to ensure implementation of sustainability post-procurement stage..." (I₃)

D. Role of Sustainable Procurement in Achieving SDGs

The other emergent theme identified was the role of sustainable procurement in achieving SDGs. The participants' overall response regarding sustainable procurement's role in achieving the SDGs in Zambia was uniform. Sustainable procurement is vital as it specifies product and service requirements, including product criteria for protecting the environment and society.

"...Public procurement is a key vehicle through which SDGs can be achieved within the Zambian public procurement market. Through sustainable procurement, bidders respond by stipulating how their product life cycle contributes to environmental protection and the social well-being of the society..." (I₁₁)

Sustainable procurement plays a role in advancing innovative practices for the products and services among the bidders. This is evidenced by the bidders' efforts to develop innovative ways to make their products and services sustainable.

"...There have been innovative ways which have resulted from bidders intending to come up sustainable ways of how their products and services contribute to the environment and society well-being..." (I₁)

V. DISCUSSION AND IMPLICATIONS

The results show that public procurement officials are knowledgeable about sustainable public procurement and its importance in achieving SDGs in Zambia. It was indicated that the procurement process has evolved beyond the value for money [37]. The results revealed that public procurement activities act as a catalyst for procuring goods and services that respond to sustainable production and consumption within the supply chain [4]. This is achieved by ensuring that only

products and services that are friendly to the environment, people and society are procured [11], [17], which advances sustainable development to achieve a circular economy [7]. These findings are consistent with sustainable procurement literature in advancing sustainable development [1].

The study revealed that sustainable procurement is implemented primarily at the pre and tendering stages within the procurement cycle. In the pre-tendering stage, requirements that products and services must meet to be sustainable during their life cycle are stipulated [38]. The findings have revealed that the sustainability of the products and services is assessed during the evaluation stages in the procurement cycle [39]. The findings are consistent with literature on the role of the procurement process as an effective tool for advancing sustainable consumption and production [20], [40]. However, it is worrisome that procurement officials' involvement is limited to the tendering process and award of the contract. To ensure compliance by the awarded bidder, end-user clients must be engaged to monitor the adherence of products and services to stipulated sustainable standards [41]. The study shows that public procurement is a vital process through which sustainable development can be achieved [21]. It is suggested that procurement officials be knowledgeable and trained in procurement processes and how the individual procurement stages contribute to sustainable development [13].

The study findings indicate that public procurement is a strategic tool for achieving Zambia's SDGs. Overall, all the respondents indicated that public procurement has the potential to impact and support the achievement of SDGs and targets. Sustainable development drives innovative solutions that deliver efficient resource use and adopt clean construction technologies [16]. To enhance the effectiveness of the procurement cycle in public procurement, the procurement cycle should be anchored on established institutional processes and procedures [4].

VI. CONCLUSIONS

This preliminary study offers insight into sustainable procurement and achieving SDGs in Zambia's linkage. It concludes that sustainable procurement is a strategic tool for advancing sustainable development. Furthermore, pre-tendering and tendering stages in the procurement cycle are critical for implementing sustainable procurement. Based on the findings, the study highlights that the effectiveness of sustainable public procurement activities is anchored on established institutional principles and guidelines. Another important implication is that procurement officials should be knowledgeable and understand how to follow the stipulated sustainable procurement guidelines. Further, monitoring should be extended to the end-user clients to enhance adherence to sustainable requirements of the procured products and services.

REFERENCES

[1] United Nations-Sustainable Development Goals [UN-SDGs]. (2015) The 17 Goals. Department of Economic and Social Affairs Available at: <https://sdgs.un.org/goals>.

[2] Government of the Republic of Zambia- Ministry of Finance and National Planning (GRZ-MFNP). (2022) Eighth National Development Plan 2022-2026 [8th NDP], Socio-Economic Transformation Improved Livelihoods. Ministry of Finance and National Planning.

[3] The Sustainable Development Goals Centre for Africa [SDGCA]. (2022) Government Signs MoU with SDGC/A to Enhance the Development of MSMEs. Available at: <https://www.lusakatimes.com/2022/10/28/government-signs-mou-with-sdgc-a-to-enhance-the-development/>.

[4] Nordic Co-operation [Nordic]. (2021) Sustainable Public Procurement and the Sustainable Development Goals. Available at: <http://norden.diva-portal.org/smash/get/diva2:1554600/FULLTEXT01.pdf>.

[5] The World Bank. (2020) Procurement in Investment Project Financing. 4th (edn). Available at: <https://www.efaidnbmnnnibpcajpcgclefndmkaj/https://pubdocs.worldbank.org/en/178331533065871195/Procurement-Regulations.pdf>.

[6] Fisher, E. (2013) The Power of Purchase. *European Procurement & Public Private Partnership Law Review*, 8(1), pp.2-7.

[7] International Labour Organization [ILO]. (2023) Advancing Social Justice, Promoting Decent Work-Decent Work. Available at: <https://www.ilo.org/global/topics/decent-work/lang--en/index.htm>.

[8] Koala, K. and Steinfeld, J. (2018) Theory Building in Public Procurement. *Journal of Public Procurement*, Vol.18 no. 4, pp.282-305. <https://doi.org/10.1108/JOPP-11-2018-017>

[9] Adjei-Bamfo, P., Maloreh-Nyamekye, T. and Ahenkan, A. (2019) The Role of e-government in Sustainable Public Procurement in Developing Countries: A Systematic Literature Review. *Resources, Conservation and Recycling*, 142, pp.189-203.

[10] Kidalov, M. and Snider, K. (2017) U.S. and European Public Procurement Policies for Small and Medium-Sized Enterprises (SME): A Comparative Perspective. *Business and Politics*, 13(4), pp.1-41. Cambridge University Press (2017). doi:10.2202/1469-3569.1367.

[11] Knack, S., Biletska, N. and Kacker, K. (2019) Deterring Kickbacks and Encouraging Entry in Public Procurement Markets: Evidence from Firm Surveys in 90 Developing Countries, *The World Bank Economic Review*, Vol.33, Issue 2, June 2019, pp.287-309, <https://doi.org/10.1093/wber/lhy016>.

[12] Shelton, L. and Minniti, M. (2018) Enhancing Product Market Access: Minority Entrepreneurship, Status Leveraging, and Preferential Procurement Programs. *Small Business Economics*, 50(3), 481-498.

[13] Ogunsanya, O. A., Aigbavboa, C. O. and Thwala, D. W. (2021) Sustainable Procurement Model for Publicly Funded Construction Projects in Developing Nations – A Structural Equation Modeling Approach. *International Journal of Construction Management*, DOI: 10.1080/15623599.2021.1889087.

[14] Craveiroa, F., Duarte, J.P., Bartoloa, H. and Bartolod, P.J. (2019) Additive Manufacturing as an Enabling Technology for Digital Construction: A perspective on Construction 4.0. *Sustain. Dev.* 4(6).

[15] United Nations Conference on Trade and Development [UNCTAD]. (2020) Public Procurement is a Powerful Tool for Sustainable Development -U.N. Report. Available at: <https://unctad.org/news/public-procurement-powerful-tool-sustainable-development-un-report>.

[16] Raj, A., Agrahari, A. and Srivastava, S.K. (2020). Do Pressures Foster Sustainable Public Procurement? An Empirical Investigation Comparing Developed and Developing Economies. *Journal of Cleaner Production*, 266, p.122055.

[17] Troje, D. and Andersson, T. (2020) As Above, not so Below: Developing social procurement practices on strategic and operative levels. *Equality Diversity and Inclusion An International Journal*.

[18] Yoshino, N. and Taghizadeh-Hesary, F. (2019) Optimal Credit Guarantee Ratio for Small and Medium-Sized Enterprises' Financing: Evidence from Asia. *Economic Analysis and Policy*, 62, pp.342-356.

[19] Benachio, G.L.F., Freitas, M.C.D. and Tavares, S.F. (2020) Circular Economy in the Construction Industry: A Systematic Literature Review. *Journal of Cleaner Production*, Vol. 260, 121046, ISSN 0959-6526.

[20] Organisation for Economic Cooperation and Development [OECD], (2023) Reforming Public Procurement: Progress in Implementing the 2015 OECD Recommendation. Available at: <https://www.oecd-ilibrary.org/sites/2e5779d8-en/index.html?itemId=/content/component/2e5779d8-en>.

[21] Organisation for Economic Cooperation and Development [OECD], (2022) Public Governance Reviews, Public Procurement in German: Strategic Dimensions for Well-Being and Growth. Available at: <https://www.oecd-ilibrary.org/sites/5d89ab8b->

- en/index.html?itemId=/content/component/5d89ab8b-en#wrapper.
- [22] Zhao, X., Webber, R., Kalutara, P., Browne, W. and Pienaar, J. (2022) Construction and Demolition Waste Management in Australia: A mini-review. *Waste Management & Research*, 40(1), pp.34-46.
- [23] Hervás-Oliver, J. L., Parrilli, M. D., Rodríguez-Pose, A. and Sempere-Ripoll, F. (2021) The drivers of SME innovation in the regions of the E.U., *Research Policy*, Vol. 50, Issue 9, 104316, ISSN 0048-7333, <https://doi.org/10.1016/j.respol.2021.104316>.
- [24] Brown, R., Linares-Zegarra, J. M. and Wilson, J. O. S. (2020) Innovation and Borrower Discouragement in SMEs. Working Papers in Responsible Banking and Finance. Working Paper no. 20-014. Centre for Responsible Banking and Finance. University of St Andrews.
- [25] Vidalakis, C., Abanda, F.H. and Oti, A.H. (2019) BIM Adoption and Implementation: Focusing on SMEs. *Construction Innovation*.
- [26] Ancarani, A., Di Mauro, C., Hartley, T and Tátrai, T. (2019) A Comparative Analysis of SME Friendly Public Procurement: Results from Canada, Hungary and Italy. *International Journal of Public Administration*, 42:13, 1106-1121, DOI: 10.1080/01900692.2019.1575853.
- [27] Hart, J., Adams, K., Giesekam, J., Tingley, D.D. and Pomponi, F. (2019) Barriers and Drivers in a Circular Economy: The Case of the Built Environment. *Procedia Cirp*, 80, pp.619-624.
- [28] Liu, J., Yi, Y. and Wang, X. (2020) Exploring Factors Influencing Construction Waste Reduction: A Structural Equation Modeling Approach. *Journal of Cleaner Production*, 276, p.123185.
- [29] Gray, D. (2017) *Doing Research in the Business World*. Sage, Los Angeles.
- [30] Hashmi, F.K., Hassali, M.A., Khalid, A., Saleem, F., Aljadhey, H. and Bashaar, M. (2017) A Qualitative Study Exploring Perceptions and Attitudes of Community Pharmacists about Extended Pharmacy Services in Lahore, Pakistan. *BMC Health Services Research*, 17(1), pp.1-9.
- [31] Creswell, J. W. and Poth, C. N. (2018). *Qualitative Inquiry and Research Design. Choosing Among Five Approaches*, 4th edn. London: Sage.
- [32] Lincoln, Y. S., Lynham, S. A. and Guba, E. G. (2018) Paradigmatic Controversies Contradictions, and Emerging Confluences, Revisited. In Denzin, N. K. and Lincoln, Y. S (eds.) *The Sage Handbook of Qualitative Research*. 5th ed., Thousand Oaks, CA: Sage Publications, pp. 213-263.
- [33] Creswell, J. and Creswell, D. (2018) *Research Design: Qualitative, Quantitative Approach and Mixed Methods Approach*, 5th edn., Sage, London.
- [34] Stamann, C., Janssen, M. and Schreier, M. (2016) Qualitative Content Analysis Attempt at a Definition and Systematisation. In *Forum Qualitative Social Research / Forum: Qualitative Social Research*, Vol. 17, No. 3, pp. 16, DEU.
- [35] Saunders, M., Lewis, M. and Thornhill, A. (2019) *Research Methods for Business Students*. 8th Edition. Pearson. Harlow.
- [36] Creswell, J. W. and Plano Clark, V. L. (2011) *Designing and Conducting Mixed Methods Research* (second edition). Thousand Oaks, CA: Sage.
- [37] Grandia, J. and Meehan, J. (2017) Public Procurement as a Policy Tool: Using Procurement to Reach Desired Outcomes in Society. *International Journal of Public Sector Management*, Vol.30 No.4, pp.302-309. <https://doi.org/10.1108/IJPSM-03-2017-0066>.
- [38] Kohler, J.C. and Dimancesco, D. (2020) The Risk of Corruption in Public Pharmaceutical Procurement: How Anti-Corruption, Transparency and Accountability Measures may Reduce this Risk. *Global Health Action*, 13(sup1).
- [39] Sönnichsen, S.D. and Clement, J. (2020) Review of Green and Sustainable Public Procurement: Towards circular public procurement. *Journal of Cleaner Production*, Vol. 245, 118901, ISSN 0959-6526, <https://doi.org/10.1016/j.jclepro.2019.118901>.
- [40] Velenturf, A.P. and Purnell, P. (2021) Principles for a Sustainable Circular Economy. *Sustainable Production and Consumption*, 27, pp.1437-1457.
- [41] Broms, R., Dahlström, C. and Fazekas, M. (2019) Political Competition and Public Procurement Outcomes. *Comparative Political Studies*, 52(9), pp.1259-1292.