

WAKING THE TRILLION- DOLLAR GIANT

Sustainable Public Procurement (SPP) and the 2030 SDG Agenda

Taking stock of SPP implementation
challenges and opportunities in
pursuit of SDG target 12.7.

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AUTHOR:

Carsten Hansen (Dr.)

carsten.hansen@sourcinghaus.com

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WAKING THE TRILLION-DOLLAR GIANT: SUSTAINABLE PUBLIC PROCUREMENT (SPP) AND THE 2030 SDG AGENDA

Dr. Carsten Hansen

EXECUTIVE SUMMARY

As we enter the final decade to implement the 2030 Sustainable Development Goals (SDGs), it is with an increasing sense of urgency that we review strategic actions available for achieving environmental sustainability and address deepening global social inequalities. The SDG 2030 Agenda, and Goal 12 specifically, provides a wide platform for linking public procurement practices with sustainable development outcomes, aligning public spend with national development objectives of governments and the wider international community. This paper contributes to the SDG target 12.7 by identifying barriers and enabling conditions for sustainable public procurement (SPP), based on a systematic literature review, incorporating emerging literature on SPP experiences from low-income and middle-income countries (LMICs). A conceptual framework is developed, building a typology of barriers and conditionalities across four dimensions, including the legal framework, the implementing public organization, the practitioner level, and the readiness of the national supply market. The model develops an understanding of conditionalities for effective SPP implementation and identifies associated stakeholders. The findings contribute to strengthening existing SPP implementation strategies by further highlighting the importance of organizational cultural change and buy-in, identifying specific practitioner level capacity and resource barriers, and acknowledges the impact of the SPP cost factor on public procurement decision-making processes. The findings further contribute to more effectively measuring SDG Indicator 12.7.1, by providing a better understanding, and measure, of the completeness of country action plans towards SPP implementation.

INTRODUCTION

The SDG target 12.7 highlights the global commitment to further “promote public procurement practices that are sustainable, in accordance with national policies and priorities”. Through sustainable public procurement (SPP) principles and practices, the annual multi-trillion-dollar public procurement budgets can be leveraged to support sustainable development. With sustainability issues increasingly at the forefront of national agendas, adoption of meaningful sustainable procurement practices is now a requirement for public procurement to be truly “fit for purpose”. It is time to wake the trillion-dollar giant.

As public organizations are custodians of taxpayer’s money, procurement activities are guided by the underlying principles of fairness, transparency, accountability, value for money, and operates under strict public review. Accordingly, traditional public procurement is associated with rigid processes, focused on achieving the lowest cost of purchase, ultimately optimizing the value for public funds. Although the price-focused approach serves to save money in the short term, it is generally not applied in a manner that incorporates longer-term environmental and social costs.

In contrast, sustainable public procurement is closely associated with the concept of sustainable development, based on a combined consideration of economic aspects (economic growth, employment, innovation,), environmental aspects (climate change, water use, energy, waste), and social aspects (basic rights, fair wages, accessibility, social inclusion), also known as the triple bottom line (Elkington, 1998), (Da Costa & Da Motta, 2019).

Sustainable procurement (SP) can be defined as “a process whereby organizations meet their needs for goods, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy, whilst minimizing damage to the environment” (UK Sustainable Procurement Task Force, 2006). In extension, sustainable public procurement (SPP) can be referred to as the act of integrating a concern for broader social and environmental impacts within procurement undertaken by governments, public sector bodies, and international organizations (Brammer & Walker, 2011).

In this context, SPP activities reflect broader economic objectives like job creation, promoting technology innovation, and supporting opportunities for SMEs, in addition to meeting the underlying principles of public procurement. On the environmental side, SPP aims to factor in consideration to environmental impacts of production and usage, like pollution and resource efficiency. On the social side, SPP aims to integrate concerns around ethical sourcing, promoting fair employment practices, supplier diversification, in accordance with principles outlined in the UN Global Compact, Guiding Principles on Business and Human Rights, and the SDG 2030 Agenda. Taking a supply chain perspective, SPP due diligence measures further need to be applied throughout global supply chains, from commodity inputs to manufacturing and distribution, ensuring that lower-tier inputs are not contradictory to the principles of SPP.

SPP is not an alternative form of procurement, instead it uses existing procurement principles to meet functional and performance requirements, while also incorporating economic, environmental, and social objectives and cost considerations. In line with the concept of SPP, the [EU Public Procurement Directive \(2014\)](#), the [OECD Working Party on Leading Practitioners on Public Procurement \(LPP\)](#) and the [World Bank New Procurement Framework \(2015\)](#), among others, have extended the meaning of value for money away from lowest price at the point of purchase, to the overall value for money across the life cycle of items, including total cost of ownership and quality aspects to support more environmentally and socially sustainable outcomes. The World Bank New Procurement Framework's vision now emphasizes that the objective of procurement is "to achieve value for money with integrity to deliver sustainable development". While the EU, World Bank, and OECD, have led initiatives on especially Green Public Procurement (GPP), the EU has not managed to reach its GPP objectives, and the World Bank conversation is recent and only partial. Similarly, while many governments have played a pioneering role, most governments are generally failing their commitment towards promoting sustainable public procurement. This is an immense opportunity loss for leveraging the purchasing power of the public sector towards national sustainable development objectives and the wider SDG agenda.

The total volume and associated purchasing power of public procurement is a major market factor, with enormous potential to influence product innovation and supplier behavior (Walker & Brammer, 2012), (Testa, Iraldo, Frey, & Daddi, 2012a). As governments procure goods, such as office equipment, vehicles, or medical equipment; or services, such as building maintenance, cleaning and catering services, the procurement activity is a key factor in stimulating the national supply market (Thai, 2001), (McCrudden, 2004). Leveraging public procurement towards national development objectives has been widely applied, whether in the context of post-apartheid socio-economic reform in South Africa (Mabece, 2019), re-orienting the public sector in Abu Dhabi (Renukappa, 2014), or greening the public bus services in Sweden (Aldenius & Khan, 2017).



To provide some perspective, public procurement volume across the EU was estimated at more than 2 trillion Euro in 2017, representing almost 14% of (GDP), distributed across an estimated 250,000 public organizations (European Commission, 2020). Across the OECD countries, public procurement volumes ranges between 5% up to 20% of (GDP) (OECD, 2017). Emerging economies like Brazil spends an estimated 250 billion USD annually through public procurement (IPEA, 2018), while China spends an estimated 538 billion USD (CCGP, 2019), and the US Federal Government an estimated 597 billion (Bloomberg Government, 2020). While high-income countries spend more on public procurement in absolute terms, the percentage of public procurement as part of government expenditure, is higher in many lower income countries (Anees et al., 2018), granting the public sector an immense impact and purchasing power on national markets across the world.

The role of public procurement, as a vehicle for addressing global challenges, was promoted as early as during [International Conference on Environment and Development at Rio de Janeiro \(1992\)](#), and the [Agenda 21 UN Guidelines for Consumer Protection \(1999\)](#), stating that "Governments and international agencies should take the lead in introducing sustainable practices in their own operations, in particular through their procurement policies", and the [Johannesburg World Summit on Sustainable Development \(2002\)](#) calling to "promote the development and dissemination of sustainable goods and services through public procurement". These initiatives have further been reinforced by the [Marrakech Process \(2003\)](#) supporting governments on the implementation of sustainable consumption and production, through regional consultations and training.

While SPP is recognized as a powerful agent of change, it remains an understudied topic in public sector management. In contrast to private sector organizations, comparatively little research has been done on SP practices in the public sector (Walker & Brammer, 2009), (Grandia & Meehan, 2017). Furthermore, it has been highlighted that SPP literature tends to suffer from an overly optimistic bias, portraying SPP as an almost guaranteed win-win, while reality is often less progressive (Roman, 2017). The objective of this paper is to understand the actual challenges to implementing SPP, including in low-income and middle-income countries, and develop corresponding policy and practitioner level recommendations for strengthening SPP implementation strategies.

TAKING STOCK OF SPP IMPLEMENTATION CHALLENGES

A systematic review of the main SPP constraints literature suggests that research has predominately focused on SPP practices in high-income countries, like the UK (Walker & Brammer, 2009), (Brammer & Walker, 2011), France (Oruezabala & Rico, 2012), US (Snider, Halpern, Rendon, & Kidalov, 2013) Ireland (Gormly, 2014), Canada (Ruparathna & Hewage, 2015), Denmark (Alberg Mosgaard, 2015), Sweden (Hall, Löfgren, & Peters, 2016), Australia (Ahsan & Rahman, 2017), USA (Roman, 2017), and the EU (Amann et al, 2014), (Iraldo & Barberio, 2017).

In recent years, however, more research has emerged reviewing SPP implementation in locations other than high-income countries like Chile (Serpell, Kort, & Vera, 2013), China (Zhu, Geng, & Sarkis, 2013), Malaysia (McMurray, Islam, Siwar, & Fien, 2014), Russia (Romodina & Silin, 2016), Brazil (Aragão & Jabbour, 2017), (Delmonico, Jose, et al., 2018), Cambodia (Durdyev, Zavadskas, Thurnell, Banaitis, & Ihtiyar, 2018), South Africa (Mabece, 2019), Pakistan (Anees, Zaidi, Mehmood, Hou, & Umair, 2018), Ghana (Nyantakyi, 2019), (Adjei-Bamfo & Maloreh-Nyamekye, 2019), and across Latin America (Blanco-Portela, et al 2018). The growing SPP research from emerging economies provide insight from a range of sectors, including public universities (Blanco-Portela et al., 2018), (Anees et al., 2018), construction and real-estate (Durdyev et al., 2018), (Shen, Zhang, & Zhang, 2017), and broader public procurement institutions (McMurray et al., 2014), (Romodina & Silin, 2016).

TABLE 1: LITERATURE REVIEW: BARRIERS FOR SPP IN PUBLIC INSTITUTIONS

Key Barriers & Constraints	SPP Constraints Literature
Insufficient Policy Framework: Lack of legal framework, Inconsistent government policies, Inconsistent institutional legislation and implementation, Lack of Government Incentives, Lack of Policy commitment and action points, Lack of mandatory SP rules/legislation, Insufficient monitoring and enforcement of SPP, Lack of inter-agency cooperation, Lack of outcome measures.	(Brammer & Walker, 2011), (Sourani & Sohail, 2011), (Oruezabala & Rico, 2012), (Serpell et al., 2013), (McMurray et al., 2014), (Ruparathna & Hewage, 2015), (Buniamin, Ahmad, Rauf, Johari, & Rashid, 2016), (Romodina & Silin, 2016), (Ahsan & Rahman, 2017), (Shen et al., 2017), (UNEP, 2017), (Durdyev et al., 2018), (Delmonico, Jabbour, et al., 2018), (Blanco-Portela et al., 2018), (Anees et al., 2018), (Adjei-Bamfo & Maloreh-Nyamekye, 2019), (Mabece, 2019), (Nyantakyi, 2019)
Lack of Management Commitment: Lack of high-level political buy-in and support, Lack of political will and budget constraints, Need for goals by upper management, Support from organizations leadership, Lack of policymakers' support.	(UNEP Environment Management Group, 2006), (Walker & Brammer, 2009), (Brammer & Walker, 2011), (Björklund, 2011), (McMurray et al., 2014), (Alberg Mosgaard, 2015), (Ahsan & Rahman, 2017), (Anees et al., 2018), (Blanco-Portela et al., 2018), (Delmonico, Jabbour, et al., 2018), (Adjei-Bamfo & Maloreh-Nyamekye, 2019)
Lack of an Institutional SPP Framework: Conflicts between the priorities of the purchasing process, Lack of clear organizational guidelines and strategic goals for the application of SPPs, Bureaucracy, Rigid organizational structures of Public Institutions, compartmentalized internal organizational structure, Lack of resources.	(Walker & Brammer, 2009), (Sourani & Sohail, 2011), (Serpell et al., 2013), (McMurray et al., 2014), (Gormly, 2014), (Alberg Mosgaard, 2015), (Ruparathna & Hewage, 2015), (Buniamin et al., 2016), (Ahsan & Rahman, 2017), (Iraldo & Barberio, 2017), (UNEP, 2017), (Aragão & Jabbour, 2017), (Delmonico, et al., 2018), (Blanco-Portela et al., 2018), (Anees et al., 2018), (Adjei-Bamfo & Maloreh-Nyamekye, 2019), (Liu, Xue, Yang, & Shi, 2019)
Organizational Culture, SPP Awareness & Behavioral Change Constraints: Organizational culture as a motivator, Reluctance to change, Lack of inclusion of SP in staff performance reviews, Lack of personal commitment to SP by staff.	(Walker & Brammer, 2009), (Lin & Ho, 2011), (Meehan & Bryde, 2011), (Sourani & Sohail, 2011), (Ruparathna & Hewage, 2015), (Grandia & Meehan, 2017), (UNEP, 2017), (Delmonico, Jabbour, et al., 2018), (Blanco-Portela et al., 2018), (Durdyev et al., 2018), (Blanco-Portela et al., 2018), (Liu et al., 2019)

Key Barriers & Constraints	SPP Constraints Literature
<p>Lack of Technical Capacity to Implement SPP processes: Shortage of professional staff, Inconsistent definitions of SP, Lack of expertise on SP implementation, Lack of SP Tools, Lack of understanding of SP Criteria, Complexity of SP concepts, Procurer Awareness, Limited capacity of stakeholders, Lack of training, Lack of information on SP practices, Lack of SP specifications, Lack of tools to measure life-cycle costs.</p>	<p>(Faith-Ell, Balfors, & Folkeson, 2006), (UNEP Environment Management Group, 2006), (Walker & Brammer, 2009), (Björklund, 2011), (Brammer & Walker, 2011), (Sourani & Sohail, 2011), (Testa et al., 2012a), (Zhu, Geng, & Sarkis, 2013), (McMurray et al., 2014), (Gormly, 2014), (Ruparathna & Hewage, 2015), (Romodina & Silin, 2016), (Aragão & Jabbour, 2017), (UNEP, 2017), (Delmonico, Jose, et al., 2018), (Durdyev et al., 2018), (Adjei-Bamfo & Maloreh-Nyamekye, 2019), (Anees et al., 2018), (Nyantakyi, 2019)</p>
<p>Supply Market Readiness: Supplier Knowledge, Supplier availability/awareness, Insufficient Integration between suppliers and purchasers, Supplier Knowledge & Awareness, Lack of sustainable products or services to purchase, Limited visibility into supply chains.</p>	<p>(UNEP Environment Management Group, 2006), (Walker & Brammer, 2009), (Sourani & Sohail, 2011), (Brammer & Walker, 2011), (McMurray et al., 2014), (Gormly, 2014), (Ruparathna & Hewage, 2015), (Alberg Mosgaard, 2015), (Ahsan & Rahman, 2017), (Shen et al., 2017), (UNEP, 2017), (Blanco-Portela et al., 2018), (Durdyev, et al 2018), (Anees et al., 2018)</p>
<p>Cost/Financing Constraints: Perception of higher cost of sustainable products, Long pay-back periods from sustainable practices, Reluctance of construction companies to invest sustainable designs, Cost of greener products, Price of green items an extra burden, Sufficient funds not available.</p>	<p>(Bouwer, et al, 2006), (Geng & Doberstein, 2008), (Walker & Brammer, 2009), (Brammer & Walker, 2011), (Zhu, Geng, & Sarkis, 2013b), (McMurray et al., 2014), (Alberg Mosgaard, 2015), (Ahsan & Rahman, 2017), (Shen et al., 2017), (Iraldo & Barberio, 2017), (UNEP, 2017), (Durdyev, Zavadskas, Thurnell, Banaitis, & Ihtiyar, 2018), (Delmonico, Jabbour, et al., 2018), (Anees et al., 2018), (Nyantakyi, 2019)</p>



A SYNTHESIS OF SPP IMPLEMENTATION BARRIERS

The emerging research highlights that SPP practices have been recognized as an effective policy tool for sustainable production and consumption, while SPP implementation, especially in middle- and lower-income economies, remains a challenge. The following provides a synthesis of the identified challenges to SPP up-take across various public organizations and national contexts, forming the basis for recommendations to strengthening SPP implement effectiveness.

LEGISLATIVE FRAMEWORK, POLITICAL WILL & EFFECTIVE PERFORMANCE MONITORING

As public procurement is dictated by adherence to legislation and policy frameworks, the fundamental starting point for the successful implementation of SPP is to ensure the presence of a clear and unambiguous national legal framework. The framework needs to define national SPP objectives and provide policy guidance on applying and monitoring sustainable public procurement practices.

Unfortunately, findings suggest that prevailing insufficient or inconsistent government policies and regulations is a key impediment for successful SPP implementation (Nyantakyi, 2019), (Delmonico, et al., 2018), (Durdyev et al., 2018), (Ahsan & Rahman, 2017), (Ruparathna & Hewage, 2015), and in Latin America, inconsistent policy frameworks from both federal and state level, is often confusing SPP activities (Delmonico, Jose, et al., 2018). In the absence of a clear legal framework, procurement officials will hesitate to implement SPP practices due to concerns with compliance risk (Carlsson and Waara, 2006), and more likely to use aspects of SPP which are compulsory by law (Romodina & Silin, 2016). Mandatory policy frameworks are typically more effective in driving implementation, as they are not dependent on the initiative of individual ministries, departments or individuals (UNEP, 2017).

To implement the legal framework, consistent definitions and applications of SPP are needed (Sourani & Sohail, 2011), (Ruparathna & Hewage, 2015), (Ahsan & Rahman, 2017), followed by clear organizational guidelines and strategic goals for the application of SPPs (Sourani & Sohail, 2011), (Alberg Mosgaard, 2015), (Buniamin, et al 2016), (Ahsan & Rahman, 2017), (Delmonico et al., 2018), (Blanco-Portela et al., 2018). The guidelines need to address conflicts between the priorities of the purchasing process (Walker & Brammer, 2009), (McMurray et al., 2014), (Delmonico, Jabbour, et al., 2018). Simple and clear information to help procurement practitioners understand expected practices has been found to increase willingness to implement SPP (Faith-Ell et al., 2006).

Furthermore, findings from South Africa and Ghana, suggest that pluralistic regulatory frameworks leads to confusion around requirements, and opens up vulnerability to fraud and corruption due to the multitude of rules and regulations (Mabece, 2019), (Nyantakyi, 2019). The findings highlight the importance of a comprehensive monitoring and evaluation system to oversee SPP policy application and outcome. Effective monitoring is required to avoid SPP policy and practices being applied at the procurement practitioner's discretion, opening for opportunistic or fraudulent behavior. Auditing is further required to avoid unethical suppliers falsifying qualifications or reporting requirements (Adjei-Bamfo & Maloreh-Nyamekye, 2019).

KEY LEGISLATIVE & POLICY BARRIERS:

- Insufficient legislative and policy framework to guide SPP implementation and prioritizations.
- Inconsistent SPP definitions and application of government policies and regulations.
- Lack of political SPP goal setting and public communication.
- Lack of effective SPP compliance monitoring and evaluation system.





ENABLING INSTITUTIONAL FRAMEWORKS & ORGANIZATIONAL BUY-IN

Another key barrier to rolling out SPP activities is overwhelmingly the lack of high-level political buy-in and support from executive management (Sourani & Sohail, 2011), (Alberg Mosgaard, 2015), (Ahsan & Rahman, 2017), whether in the context of the UK (Walker & Brammer, 2009), Malaysia (McMurray et al., 2014), Pakistan (Ahsan & Rahman, 2017), or Latin America (Delmonico, Jabbour, et al., 2018), (Blanco-Portela et al., 2018). There is a need for strategic goal setting by upper management, as otherwise the tendency is for procurement departments to gravitate towards price-only competitive criteria (Brammer & Walker, 2011).

Management support also needs to address barriers of organizational culture or lack of awareness leading to a reluctance to change, which appears a pervasive barrier (Walker & Brammer, 2009), (Sourani & Sohail, 2011), (Ruparathna & Hewage, 2015), (Delmonico, Jabbour, et al., 2018). A non-supportive organizational culture constitutes a significant barrier to SPP, further supporting the need for top management commitment to instigate positive behavioral change towards SPP.

A key element for success has shown to be clear communication and awareness on sustainable procurement, and its role towards sustainable development. Empirical work from Italy found that the level of stakeholder awareness of GPP (Testa et al., 2012) and their awareness of GPP procedures (Testa et al., 2016), had strong relationships with the success of local government implementation of SPP. This dynamic is also confirmed by research on local governments in China, noting that GPP is positively associated with stakeholder awareness of GPP regulations and subsidy policies (Liu et al., 2019).

This is in line with other findings suggesting that external stakeholder expectations are positively associated with the procurement function assuming a strategic role on sustainable procurement (Roman, 2017). Nevertheless, a low level of SP awareness and understanding appears pervasive among public procurement managers, and other stakeholders such as contractors, funding organizations and end-users (McMurray et al., 2014). For this purpose, ISO standards on SPP could be helpful in developing an organizational framework for implementation, and findings suggest that ISO 14001 certified public authorities are more likely to develop GPP practices (Testa, Iraldo, Frey, & Daddi, 2012b).

Research across local government in China, confirms that innovation in green practices depends on a combination of organizational culture and encouragement, arguing that one green practice leads to the adoption of other green practices (Lin & Ho, 2011). The change of organizational culture needs to translate into an SPP enabling and empowered institutional frameworks addressing often rigid organizational set-ups (Delmonico, Jabbour, et al., 2018), or compartmentalized and bureaucratic internal organizational structures (Blanco-Portela et al., 2018) of public institutions.

Finally, the organizational buy-in and management support needs to translate into meaningful financial support and resourcing in order for SPP to be successful (Sourani & Sohail, 2011), (Ruparathna & Hewage, 2015), (Ahsan & Rahman, 2017), (Delmonico, Jabbour, et al., 2018), (Anees et al., 2018), (Blanco-Portela et al., 2018). SPP re-alignment needs to be resourced, given the general context of public procurement teams being stretched thin and experiencing “initiative fatigue” (Gormly, 2014).

KEY ORGANIZATIONAL BARRIERS:

- Lack of sustainable procurement awareness across stakeholders.
- Absence of high-level buy-in and support from executive management.
- Reluctance to change and organizational culture barriers.
- Lack of SPP guidelines, goal setting and performance measurement.
- Limited empowerment and enabling institutional frameworks.
- Lack of resourcing of procurement departments for SPP.

PRACTITIONER-LEVEL CAPACITY TO IMPLEMENT SPP

At an individual level, findings suggest that the human factor is a key influencer of sustainable transformation (Blanco-Portela et al., 2018), highlighting the importance of behavioral change at the individual level (Meehan & Bryde, 2011), (Grandia & Meehan, 2017). The individual-level factors are generated by the procurement practitioners, and the lack of awareness and training on sustainable procurement is clearly identified as the main barrier to implementing sustainable procurement, followed by the lack of guidance and resources, including expertise (McMurray et al., 2014). This aligns with consistent findings from the public sector in China (Zhu et al., 2013), Russia (Romodina & Silin, 2016), Cambodia (Durdyev et al., 2018), Pakistan (Anees et al., 2018), Latin America (Delmonico, Jabbour, et al., 2018) and Ghana (Nyantakyi, 2019).

Findings from Brazil further highlight that if sustainable procurement is not supported by the training of public procurement practitioners and suppliers, cultural challenges will continue to hamper SPP implementation (Delmonico, Jose, et al., 2018). On this basis, procurement organizations need to implement intensive training on designing and implementing SPP-informed tendering procedures, including defining sustainability requirements, qualifying suppliers, identifying the best offer for “sustainable value for money”, and how to evaluate the “environmental value” of the offer and integrate it into the monetization of the price (Testa et al., 2012a).

As stated, sustainable procurement is not difficult to draft; it is difficult to implement (UNEP Environment Management Group, 2006). Given the broad definition of SPP, the overall challenge lies in the implementation phase. A key barrier for implementation is often the organizations own capacity to apply sustainable procurement across its internal processes (Brammer & Walker, 2011), and the absence of practical tools to guide requisitioners, procurers and suppliers on evaluating goods and services using sustainable development criteria (UNEP Environment Management Group, 2006), (Gormly, 2014), (Aragão & Jabbour, 2017). Overall, the findings suggest a general lack of guidance and a shortage of relevant resources and tools to support practitioners in applying SPP practices.

Unfortunately, the procurement function is often conceptualized as a singular process, or a black box, which understates the diversity of categories, their individual complexities, and the special contractual arrangements and management requirements involved in delivering a broad public procurement portfolio. Specific category level expertise is required to perform meaningful sustainability assessments and life cycle analysis, whether procuring construction or cleaning services, or when evaluating the manufacturing process of a specific good. Practitioners are further challenged at the stage of integrating life cycle costs into the cost of the actual bids (Romodina & Silin, 2016).

This complicates the alignment of policy and procurement practice, plus the scope and depth of required training interventions. The need for technical expertise on “how to do it”, especially category-specific life-cycle cost analysis, varies significantly across different categories, highlighting the need for category-specific tools and criteria to assess product sustainability and life cycle costs. The EU and OECD has developed a series of publicly available category-specific GPP criteria and Life-cycle costing (LCC) guidelines that can be easily adapted for this purpose. To address the shortage of procurement practitioners with category-specific SPP expertise, training and guideline development is an imperative element of SPP implementation (Björklund, 2011), including the use of certifications and eco-labels to close the information gap (Iraldo & Barberio, 2017). Many governments may simply lack sufficient access to the expertise needed for implementing SPP, and hence pooling of resources, or establishing helpdesks, may be required to adopt sustainable procurement practices.

Finally, access to specialized practitioners is a particular concern for local governments (Geng & Doberstein, 2008), (Walker & Brammer, 2009), and findings suggest a significant association between the size of local governments and their focus on SPP (Michelsen & Boer, 2009), (Testa et al., 2012), suggesting that smaller departments and local governments face higher barriers in implementing SPP initiatives, due to less access to specialized personnel or full-time managers dealing with SPP (Rüdenauer, Koch, Möller, & Seebach, 2007). This suggests that national-level SPP strategies need to take account of the sustainable procurement capacity of local government teams and avoid a one-size-fits-all approach (Liu et al., 2019).

KEY PRACTITIONER-LEVEL BARRIERS:

- Training deficit in implementing SPP-informed tendering procedures.
- Lack of category-specific expertise and criteria to assess life cycle costs.
- Lack of processes and tools for conducting supplier due diligence.
- Lack of practical tools to guide requisitioners, buyers and suppliers.
- Lack of availability of the requested sustainably produced goods and services on national markets.



SUPPLY MARKET READINESS

It is essential to consider the readiness of the supply market, and individual suppliers, in the implementation of SPP. The lack of understanding by suppliers and the marketplace of SP criteria and evaluation processes, is consistently reported as a key external barrier for SPP implementation. The key challenge is supplier availability and awareness and ultimately concerns the actual availability of the requested sustainably produced goods and services (UNEP Environment Management Group, 2006), (Walker & Brammer, 2009), (McMurray et al., 2014), (Ahsan & Rahman, 2017), (Shen et al., 2017), (Delmonico, Jabbour, et al., 2018), (Anees et al., 2018), especially across highly specialized procurement categories in limited markets (Brammer & Walker, 2011).

A review of the literature suggests that the availability of sustainably produced goods and services in low-income and middle-income countries is a specific challenge, due to a combination of capacity constraints, limited awareness of SP, or general lack of market maturity and demand. The lack of available sustainable goods or services can also be a consequence of coordinated market resistance, where existing practices work well for industry stakeholders (Durdyev et al., 2018). Also, if the national supply market is unable to meet the requirements of the public tenders due to high SP criteria, governments will be concerned with contracts being awarded to foreign suppliers, undermining the objective of national economic growth and innovation opportunities.

In this regard, government-backed regulations can act as a key motivator for market development, and can influence market maturity by setting production and consumption trends, promote innovation and set social responsibility standards (Oruezabala & Rico, 2012), (Amann et al., 2014). In some sectors, public procurement constitute a dominating share of the market, i.e., public transport and construction, health services and education, and can have a considerable impact (Diófási & Valkó, 2014). For this purpose, Green Public Procurement (GPP) is a cornerstone of environmental policies in the EU.

By promoting and using GPP, public procurement can potentially provide industry with real incentives for developing green technologies and products (Testa et al., 2012a), can drive innovation and widen the market for eco-technologies (Diófási & Valkó, 2014), and operate as a market trigger for eco-innovation (Iraldo et al., 2007). Governments can also play an important role in mobilizing the power of consumer purchasing preferences to influence market demand for sustainable products, which has been an important change factor in Europe.

KEY SUPPLY MARKET BARRIERS:

- Lack of market awareness of SPP criteria and evaluation process.
- Absence of available sustainable goods and services as per SPP standards.
- Limited incentives for developing sustainable technology innovation.
- Market sensitization and consumer preferences.

THE SPP COST FACTOR

The interrelation between public procurement legislation, practices, and the supply market influences the SPP cost factor. As discussed, traditional public procurement is generally focused on identifying the lowest-cost technically responsive bid at the point of purchase, while SPP seeks to integrate a wider and longer-term costing model. Without factoring in life-cycle costing (LCC), which for example can translate into lower relative costs for energy efficient products and monetarize negative externalities, sustainable production will be considered more expensive than traditional production. Hence, higher prices of sustainable items in comparison to those of conventional products is considered a major hindrance to sustainable procurement adoption and has been consistently identified as a barrier to SPP implementation across budget-constrained public entities.

The higher real or perceived cost of sustainable goods and services is also problematic as public sector budgets are often allocated based on traditional product prices, whereas sustainable products generally come at a higher cost (Bouwer, et al, 2006). To overcome the price problem, the Chinese central government, for example, subsidized local governments for purchasing green vehicles (Zhu et al., 2013), and has further subsidized local governments for purchasing other energy-saving products, including energy-saving electric appliances and lighting (Liu et al., 2019).

The cost factor can be a barrier for public organizations across all income levels (Geng & Doberstein, 2008), as organizations feel the price of SPP as an extra burden on their limited budgets due to consistent budgetary constraints (Brammer & Walker, 2011). In low-income and middle-income countries the cost factor is amplified, and for example the higher cost of sustainable construction was considered the most significant barrier for implementation in Cambodia (Durdyev, et al, 2018), echoed across public health procurement in the UK (Brammer & Walker, 2011), Malaysia (McMurray et al., 2014), (Buniamin et al., 2016), Pakistan (Ahsan & Rahman, 2017), and Latin America (Delmonico, et al., 2018). In Ghana, public procurement officials, often reconsider sustainable public procurement objectives in favor of price savings over sustainable outcomes (Nyantakyi, 2019).

Due to higher real or perceived costs of sustainable goods and services, government incentives to promote sustainable technologies and production methods is important for SPP implementation (Sourani & Sohail, 2011), (Serpell et al., 2013), (Ruparathna & Hewage, 2015), (Shen et al., 2017), (Iraldo & Barberio, 2017). In Cambodia, the lack of government incentives was rated a significant barrier, highlighting the importance of incentivizing industry stakeholders, particularly in countries where sustainable technology and practices are in its infancy (Durdyev et al., 2018).

KEY SPP COST FACTOR BARRIERS:

- Real or perceived higher prices of sustainable products.
- Lack of government incentives or subsidies to address “price-gap”.
- Short-term price savings prioritized due to budgetary constraints.



CONCEPTUAL FRAMEWORK OF BARRIERS & CONDITIONS FOR SPP IMPLEMENTATION

Based on the identified constraints and barriers, a conceptual framework is developed that provides entry points for supporting SPP implementation. The model suggests that effective SPP requires intervention across several dimensions, namely at the Structural Level, the Organizational Level, the Individual Practitioner Level, and the wider Market Level. The framework is an extension of previous models on SPP application across international public procurement entities (Brammer & Walker, 2011), (Gelderman, Ghijssen, & Brugman, 2006).

FIGURE 1: FRAMEWORK OF BARRIERS & CONDITIONS FOR SPP IMPLEMENTATION

Level	Barriers for SPP	Conditions for SPP	Stakeholders
Policy Level	Insufficient legislative and policy framework to guide SPP implementation and prioritizations.	Concise Legislative Framework, Embedded SPP Targets in Overarching Policies, Effective Monitoring System, and Political Goal Setting	<ul style="list-style-type: none"> Government Parliament Relevant Ministries Civil Society Lobby Groups
	Inconsistent SPP definitions and application of government policies and regulations.		
	Lack of embedded SPP goal setting in overarching policies and public communication on SPP targets.		
	Lack of SPP monitoring and evaluation system overseeing policy application and outcomes.		
Organizational Level	Absence of organization-wide awareness on sustainable procurement.	Organizational Awareness & Buy-in, Enabling Institutional Framework, ISO Standards and Financial Resources	<ul style="list-style-type: none"> Public Entity Management Local Government Non-procurement Departmental Stakeholders End-users or Beneficiaries
	Absence of high-level buy-in and support from executive management.		
	Reluctance to change and organizational culture barriers.		
	Lack of organizational SPP guidelines, goal setting and performance measurement.		
	Limited empowerment and enabling institutional frameworks.		
	Lack of financial resourcing of procurement departments for SPP implementation.		
Practitioner Level	Training gap in designing and implementing SPP-informed tendering procedures.	Practitioner SP Capacity, Category-specific Tools & Methodologies	<ul style="list-style-type: none"> Procurement Managers Individual Practitioners Requisitioners
	Lack of category-specific expertise, tools, and criteria to assess life cycle costs.		
	Lack of processes and tools for conducting consistent and effective supplier due diligence.		
	Lack of practical tools to guide requisitioners, procurers and suppliers.		
Market-Level	Lack of industry and individual supplier awareness of SPP criteria and evaluation process.	Sufficient Supply Market Readiness, Willingness, and Absorption Capacity, Market Incentives, SME Support, Consumer sentiments	<ul style="list-style-type: none"> Industry Associations Individual Suppliers SMEs
	Lack of communication on SPP goals and objectives to market makers.		
	Absence of available sustainable goods and services (context and category-specific).		
	Lack of market incentives for developing sustainable technologies and innovation, or fiscal/tax incentives.		

SPP Cost Factor

FIGURE 2: IMPLEMENTATION FRAMEWORK DIMENSIONS:

- The first dimension emphasizes the role of a concise **legislative framework**, signaling the political will of the government and securing a clear mandate for SPP implementation, followed by associated monitoring and evaluation of outcomes.
- The second dimension underlines the need for enabling **institutional frameworks and organizational buy-in**, and associated incentives and pressures for SPP implementation. In part, this reflects organizational culture and ability/willingness to change and empower the required SPP-supportive frameworks.
- The third dimension focuses on **practitioner-level capacity** to implement SPP, including awareness and training on sustainable procurement processes, including category-specific life-cycle cost analysis, managing SPP-informed tendering procedures, and due diligence processes. Effective implementation also requires the availability of practical SPP tools to guide requisitioners, procurers and suppliers.
- The fourth dimension is focused on **supply market readiness**, including strategic communication with the supply market on SPP objectives, criteria, and evaluation processes, to overcome resistance to participation. This dimension is, in turn, influenced by government legislation on incentives for developing sustainable technologies and production methods to enhance the market for more sustainable goods and services, and support mechanisms in place to support SME capability issues.



The SPP Cost Factor is considered a cross-cutting dimension, impacted by the legislative framework and underlying government incentives, procurement strategies applied at the practitioner-level, and existing market situation in the national context.

CONCLUSION

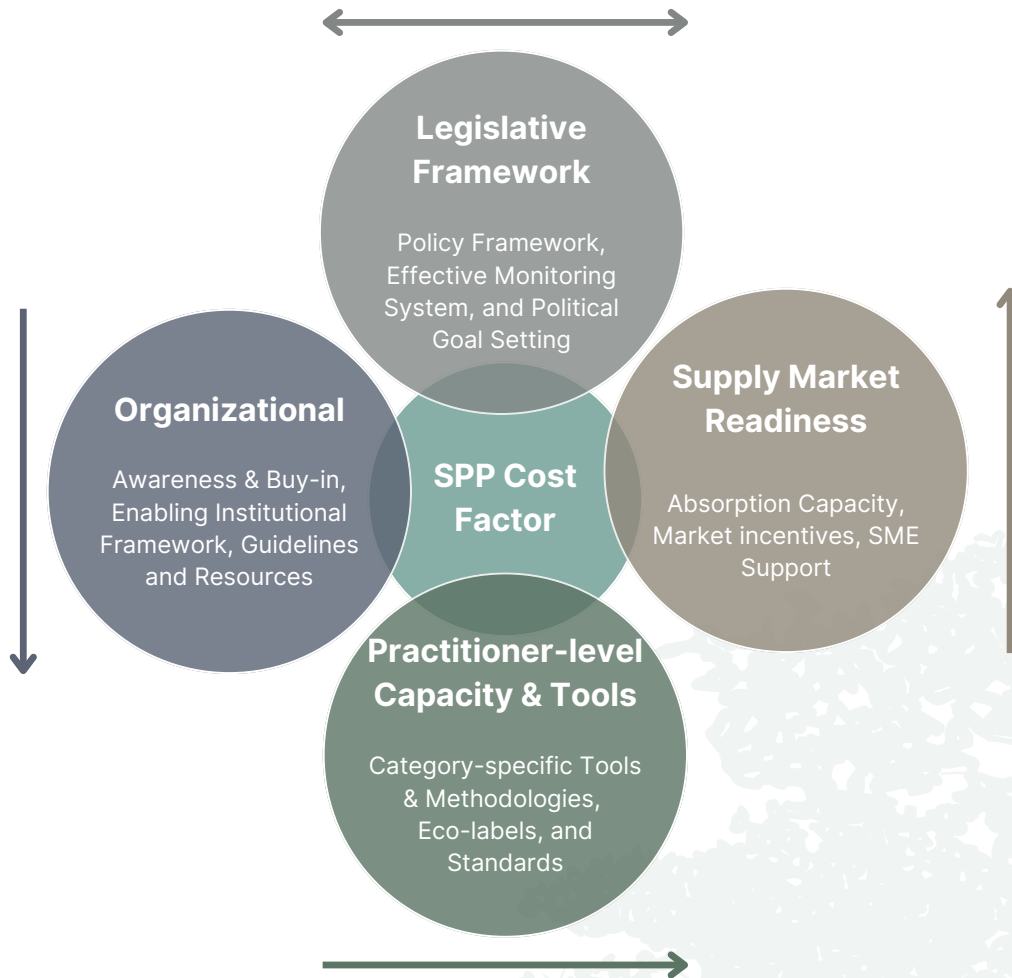
As the timeline for achieving the SDG 2030 Agenda is running out, and the effects of climate change and social inequality are increasingly manifesting themselves globally, it is essential that the full potential of public procurement is utilized to support sustainable development outcomes.

This review contributes to the SDG target 12.7, by reviewing barriers for SPP implementation, based on an analysis of research findings to-date, and incorporating the emerging literature on SPP experiences from low-income and middle-income countries. A conceptual framework was developed by building a typology of barriers across four dimensions, namely the legislative framework, the internal dynamics of implementing public organizations, challenges at the practitioner level, and the readiness of the national supply markets to absorb SPP. The model correspondingly develops an understanding of the needed prerequisite conditions for effective SPP implementation, and the associated stakeholders that need to be engaged at various levels of intervention.

The findings also contribute to more effectively measuring SDG indicator 12.7.1, which monitors country-level implementation of SPP policies and action plans. The findings can help inform the required scope of 12.7.1. national action plans by defining the recommended levels of intervention, and the prerequisite conditions for SPP implementation. This will facilitate a better understanding, and measure, of the completeness of action plans, and whether they are likely to generate the needed results and outcome. The effective monitoring of SDG target 12.7 is critical for benchmarking progress and ensuring continued momentum for SPP implementation, and the wider SDG 2030 Agenda.

These findings are important for designing more impactful and targeted implementation strategies for SPP, and supplements the approach adopted by the [Marrakech Task Force \(MTF\) Framework](#). The MTF Framework, further developed in the [UNEP Sustainable Procurement Implementation Guidelines](#), suggests a stepwise approach to SPP implementation, involving an initial legal review and market readiness analysis, followed by an SPP policy plan and training, before implementation (Federal Office for the Environment (FOEN), 2008). The findings contribute to further strengthening this implementation design, by including the importance of addressing organization-wide cultural change and buy-in, identifying category-specific practitioner level capacity and resource barriers, and integrating the impact of the SPP Cost Factor into the SPP implementation cycle. The cycle also highlights the interrelationship between government legislation and associated market incentives, and supply market readiness.

FIGURE 3: SCOPE OF SPP IMPLEMENTATION CYCLE



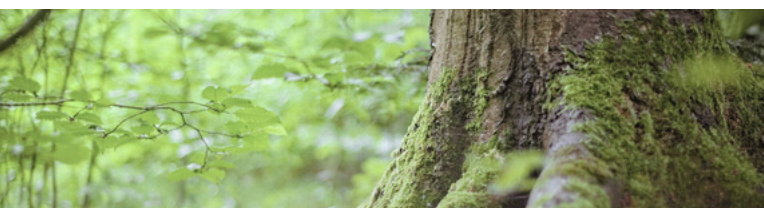
The findings validate the importance of political leadership and support from top government, with a clearly communicated commitment to SPP and political goal setting. A concise legislative framework, signaling the political will of the government, and a clear mandate for SPP implementation, is a fundamental requirement for public organizations to adopt SPP practices with confidence. This will require revising public procurement law to make it more conducive to SPP. The SPP commitment and targets, embedded within the obligation to Sustainable Development and the SDG Agenda, further need to be monitored and reported, with departments held accountable for performance. This requires that the oversight functions also align with the stated SPP objectives, and audit for long-term value for money. A series of useful resources are available online, including the [Procura+ Manual](#), providing a series of SP policy examples from EU cities (ICLEI, 2015).

Secondly, the findings introduce the importance of organizational buy-in and behavioral change as a key condition of SPP implementation, and the significance of departmental management and non-procurement stakeholder ownership. This is in line with findings suggesting that external stakeholder expectations are positively associated with the procurement function assuming a strategic role on sustainable procurement. Behavioral change requires intervention at the organizational level, and involves building an enabling environment including, a clear management commitment to SPP in the form of a separate departmental sustainable procurement policy statement, a clear set of policy guidelines, followed by the budgetary resources and mechanisms to support implementation.

There is a distinct need to acknowledge the human resources and support units required for SPP implementation and uptake. The process further needs to be encouraged, by incentive systems, internal rewards linked to performance, and an expanded awareness and sensitization of SPP to mid-level management and non-procurement staff, to influence departmental prioritization and requisitioner perspectives. Finally, the process needs to be enforced through oversight and performance reviews, including departmental level goal setting, and monitoring of SPP targets. SPP implementation is therefore not a technical challenge alone, but involves human-level factors, with organizational leadership and culture playing pivotal roles (Roman, 2017). This highlights the importance of communication and awareness raising activities for general staff, like seminars/workshops and in-house newsletters, to establish buy-in. Organizations can further incentivize behavioral change by, for example, integrating sustainable procurement into job descriptions and onboarding training for staff.

Thirdly, the findings unpack the technical barriers involved, underlining the category-specific challenges of SPP processing, and the subsequent wide range of category knowledge and specialization required. This provides more granularity on the nature of needed practitioner training and category expertise, identifying the necessity of category-specific tools and criteria definitions to assess product sustainability, especially concerning complex life-cycle cost analysis. Public procurement portfolios, whether in a central department or local government, usually include a vast diversity of categories, each with specific SPP requirements. As public procurement teams are generally lean, or simply understaffed, the extra workload of SPP practices can be a challenge. Training alone is therefore not the panacea for SPP implementation. In addition, implementing organizations need to address the “expertise-gap” at the practitioner level through new ways of pooling or sharing category expertise, lowering transaction time with more extensive use of eco-labels, conducting joint procurement, creating sharable knowledge platforms disseminating SPP standards and guidelines for critical categories, and/or by centrally managing procurement categories with complex SP requirements. An example of such an initiative is the [PIANOO](#) site, a Dutch public procurement expertise center, which provides comprehensive information on sustainable public procurement (SPP). The information is prepared specifically for public purchasers, and provides practical guidance and resources, plus details on the latest developments in the field of SPP. The [EU Commission](#) also provides online GPP criteria, Life-Cycle Costing tools and SP Guidelines for individual categories. Finally, a comprehensive UNDP [Guideline Note for Implementing Sustainable Health Procurement](#) is available online.

Fourthly, the findings highlight the impact of the higher cost associated with sustainable goods and services, the SPP Cost Factor, and its implications on public procurement decisions. The impact is a critical consideration, especially at the management levels of public institutions, tasked with often handling conflicting priorities between the service level expectations of local taxpayers, political visions, budget constraints, and the higher cost of SPP. The price concern is further exacerbated if budgets are allocated based on traditional lowest price methods. In addition, local procurement entities operate in political environments, where the priority may lean towards immediate and less costly solutions, securing quick wins before the next local election. These factors are realities facing procurement teams and limiting the space for SPP. It is therefore important to acknowledge that cost matters in SPP implementation, and as the world likely enters a post-COVID-19 period of recession, cost will likely matter even more. Under these circumstances, governments need to take a longer-term perspective and apply Life Cycle Costing (LCC) when evaluating costs in tendering. A number of LCC tools and methodologies are available for specific goods and services, like the [SMART SPP Guide and Excel Tool](#), or the [Clean Fleets LCC Tool](#) for calculating LCC for vehicle purchases. Alternatively, governments can consider measures to overcome the potential short-term “price-gap” on key categories. These measures could be budget incentives, subsidizing green products like electric vehicles, increasing green taxes, or simply reducing subsidies on fuel and other commodities to allow a level playing field. Governments need to use more effectively outcome-based, or performance-based sustainability specifications to better solicit innovation and introduce new technologies to meet sustainability targets. Examples and methodologies are available on the [Innovation Procurement Platform](#) and the EU [Guidance for public authorities on Public Procurement of Innovation](#).



FUTURE RESEARCH

As the demand for SPP implementation across all levels of government spending intensifies, further research is needed to identify context specific barriers and opportunities, like country in-come levels, organization types, maturity of national markets and public sentiment. While some high-income countries have progressed substantially, it remains unclear to what extent SPP is being implemented in low-income and middle-income countries, and how public organizations are managing challenges around cost, capacity gaps and market availability. It would be important to review best practices and lessons learned that can be adapted to middle- and lower-income contexts and identify priority interventions with the highest sustainability dividend. An important benchmark toward this objective has already been achieved by the UNEP, in the 2017 Global Review of Sustainable Procurement (UNEP, 2017).

Furthermore, it would be important to understand the scope of implementation across the broad SPP definition, as findings suggest that while environmental considerations are widespread, the social aspects of SP is given less consideration (Gormly, 2014), (UNEP, 2017). With emerging national legislation on human rights and forced labor in supply chains, like the California Transparency in Supply Chains Act (2012), FAR (Federal Acquisition Regulation) Human Trafficking Rules (2015), UK Anti-slavery Act (2015), French Vigilance Law (2017), EU Non-Financial Reporting Directive (2018), Australian Modern Slavery Act 2018, and the mandatory EU human rights due diligence law, expected to be put in place by 2021, it is critical that governments are similarly prepared to “walk the talk”. A series of guidelines and toolkits on Human Rights due diligence are already made available by [OECD](#), the [Danish Institute of Human Rights](#), and a range of other organizations and NGOs. Similarly, a review of the implications of SPP practices on corruption and malpractices, which remains a global drain on public spending, will be critical to ensuring continued confidence in public procurement institutions and processes.

Overall, it is clear that the pursuit and implementation of SDG 12.7, is directly linked to the achievement of a range of other SDGs, relating to gender equality (SDG5), decent work and economic growth (SDG8), and all goals related to climate change and the environment. SDG 12.7 is therefore an important influencer and accelerator of all SDG initiatives. It is therefore essential to embrace and mobilize the full potential of SPP in pursuit of the SDG 2030 Agenda.



REFERENCED WEBSITES AND OTHER USEFUL SPP RESOURCES

The PIANOo site, is a Dutch public procurement expertise center, which provides comprehensive information on sustainable public procurement (SPP): <https://www.pianoo.nl/en/public-procurement-in-the-netherlands/sustainable-public-procurement-spp>.

The UNEP Sustainable Public Procurement Implementation Guidelines provides a complete SPP implementation framework for organizations implementing sustainable public procurement: <http://www.unep.fr/scp/procurement/docsres/ProjectInfo/UNEPImplementationGuidelines.pdf>.

The Procura+ Manual provides clear, easy-to-understand guidance for European public authority on how implement sustainable procurement: <https://procuraplus.org/manual/>.

EU GPP criteria and Life-Cycle Costing tools and Guidelines for individual categories: <https://ec.europa.eu/environment/gpp/lcc.htm>.

The UNDP Guidelines for Sustainable Procurement of Healthcare Commodities and Services supports the implementation of sustainable procurement of health care commodities and services: <https://www.undp.org/content/undp/en/home/librarypage/hiv-aids/guidelines-for-sustainable-procurement-of-healthcare-commodities.html>.

OECD Due Diligence Guidance for Responsible Supply Chains in the Garment and Footwear Industry: <https://mneguidelines.oecd.org/OECD-Due-Diligence-Guidance-Garment-Footwear.pdf>.

OSCE Compendium of relevant reference materials and resources on ethical sourcing and prevention of trafficking in human beings for labor exploitation in supply chains: Second updated edition: <https://www.osce.org/cthb/450769>.

Danish Institute of Human Right - Toolkit on Human Rights for Procurement Policy Makers and Practitioners: https://www.hrprocurementlab.org/wp-content/uploads/2020/03/DIHR_Toolkit_public-procurement_2020.pdf.

The ISO 20400 Sustainable Procurement Guidance (2017) provides guidelines for organizations wanting to integrate sustainability into their procurement processes: <https://www.iso.org/news/2016/08/Ref2105.html>.

ICLEI provides training and services to public authorities wanting to implement sustainable, innovation, and circular public procurement: <https://sustainable-procurement.org/resource-centre/>.

The Innovation Procurement Platform provides links and resources to support implementation of innovation in public procurement processes: <https://innovation-procurement.org/>

The EU Guidance on Public Procurement of Innovation supports application of public procurement innovation (PPI): <https://innovation-procurement.org/implementing-innovation-procurement/>



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