

PAPER

Forecasting and Directions Regarding Sustainable Public Procurement

Elena Rusu¹, Otilia Manta^{2,3,4} 

¹Doctoral School of Economics, Moldova State University, Chisinau, Republica Moldova

²Romanian Academy, "Victor Slavescu" Centre for Financial and Monetary Research, Bucharest, Romania

³Romanian Academy, CE-MONT Mountain Economy Center, Vatra Dornei, Romania

⁴Research Department, Romanian American University, Bucharest, Romania

otilia.manta@rgic.ro

ABSTRACT

In the present research, the author presents the public procurement system as a significant lever for governments to accelerate the transition to more sustainable modes of consumption and production and, more generally, to contribute to the broader goal of sustainable development. Sustainable Public Procurement (SPP) is a process through which public entities procure goods, services, works, and utilities in optimal conditions, considering factors such as price and quality, in order to generate benefits entities while minimizing negative impacts on the environment. Consequently, this paper proposes some methodological issues that could contribute to the establishment of a SPP system, based on the model implemented and applied in EU countries. Additionally, this paper focuses on forecasting and presenting the current situations of public procurement as the basic element.

KEYWORDS

forecasting public procurement, "green" public procurement, sustainable development goals, sustainable development

1 INTRODUCTION

We are currently facing significant challenges regarding sustainable development. Billions of people continue to live in poverty and are deprived of well-being and a dignified life. Inequalities at both national and international levels are increasing. There are substantial disparities in opportunities, wealth, and power. Gender inequality remains a key contemporary challenge. Youth unemployment is a major concern. Threats to global health, increasing natural disasters, escalating conflicts, violent extremism, terrorism and humanitarian crises, and the forced displacement of people, are likely to undermine much of the development progress achieved in recent decades. The depletion of natural resources and the adverse effects of environmental degradation, desertification, drought, soil degradation, lack of fresh water, and declining biodiversity, exacerbate the list of challenges humanity faces. Climate change stands out as one of the most pressing issues today, with its negative impact

Rusu, E., Manta, O. (2023). Forecasting and Directions Regarding Sustainable Public Procurement. *IETI Transactions on Data Analysis and Forecasting (iTDAF)*, 1(2), pp. 98–107. <https://doi.org/10.3991/itdaf.v1i2.39987>

Article submitted 2023-03-29. Resubmitted 2023-05-23. Final acceptance 2023-05-23. Final version published as submitted by the authors.

© 2023 by the authors of this article. Published under CC-BY.

affecting the sustainable development efforts of all nations. Rising global temperatures, along with rising sea levels, ocean acidification, and other consequences of climate change, are particularly impacting coastal areas and the lowlands, including many less developed countries, and numerous small developing island states. The survival of many societies and ecosystems that sustain our planet are now at great risk.

2 MATERIALS AND METHODS

The authors base their arguments on data provided by the European Parliament Commission, the European Economic and Social Committee, and the Committee of the Regions, and other reliable sources to emphasize the importance of addressing and developing SPP. At the same time, the study conducts a comprehensive analysis of the international landscape of SPP.

To conduct this study, the authors employed research methods such as the monograph, data comparison, and graphical analysis. These methods were utilized to understand the entire process of SPP, drawing from bibliographic sources and the data gathered during the study.

3 RESULTS

A significant portion of the world's GDP is linked to government spending. The total public expenditure at both central and local levels of governments, which encompasses consumer and investment spending, is estimated to be around 20% of GDP in OECD countries and approximately 15% in non-OECD countries. Public procurement, through the reduction of remuneration of public employees, accounts for an estimated percentage of GDP that varies between 6% and 10% depending on the country [1]. In certain sectors, government procurement emerges as the primary sustainable source of sales, such as defense-related, health, research, and industry sectors.

Therefore, public procurement assumes a key role in achieving sustainable development goals. Specialized studies [2] [3], highlight that countries worldwide now recognize the significance of promoting public procurement in the context of sustainable development. Serving as a vital function that stimulates local economies and comprising a substantial portion of public expenditure, public procurement represents a pivotal tool for governments to achieve their objectives and deliver essential public services to citizens.

Eco-friendly or “green” procurement is a progressive approach that involves the careful selection of products and services to minimize their environmental impact. Companies and organizations must conduct an environmental impact assessment for products at every stage of their life cycle. This assessment includes considering the environmental costs associated with raw materials sourcing, manufacturing, transportation, storage, product use, and disposal.

As mentioned earlier, public procurement, which represent up to 20 percent of GDP in Eastern European and Caucasus countries [8], presents a largely un-tapped opportunity to drive business and domestic markets to innovation and increased sustainability. By altering spending patterns, a shift towards more sustainable goods and services can lead to positive social, environmental, and economic outcomes. These include poverty reduction, improved equity, reduced GES emissions, and increased energy and resource efficiency. SPP is thus emerging as a key policy tool to promote sustainable development and facilitate a transition towards an inclusive green economy [2].

Sustainable public procurement ensures a secure continuity that not only helps by providing basic public services that support the SDGs, but also by systematizing and adding value along the way. Climate change continues to have an impact on citizens and governments alike, reminding everyone of the importance and urgency of sustainable development. To address this, 17 objectives and 169 individual objectives have been established to guide prioritization, and efforts towards achieving sustainable development [3].

At present, the SDGs encompasses a broader range of areas, including climate change, economic inequality, innovation, sustainable consumption, peace, and justice, among other priorities. These goals are interconnected, as success in one field often requires addressing issues that are typically associated with another.

We have selected the case studies presented in Table 1 to highlight the impact of public procurement on sustainable development by demonstrating the implementation of the SDGs.

Table 1. Impact of public procurement in different countries on sustainable development

Objective	Title	Country
1. No poverty	The new shelters have become a major shift in providing decent housing for refugees	Northern countries
2. Zero hunger	Sowing the seeds of prosperity to end hunger in schools in El Salvador	El Salvador
3. Good health and well-being	Prevent cross-contamination and reduce total hospital property costs through results-based procurement in the Netherlands	Netherlands
4. Quality education	Helping migrants to better integrate into Finnish society through online courses	Finland
5. Gender equality	Gender equality in Stockholm ensures equal treatment in health care	Sweden
6. Clean water and sanitation	Improving local knowledge to improve health and sanitation	Zambia
7. Access to green energy	Wind power to fuel South Africa's energy sector switching from coal to clean energy sources	South Africa
8. Decent work and growth	Creating decent working conditions in global supply chains through supplier inspections	Malaysia
9. Industry, innovation and infrastructure	The Norwegian story of the electric "ferry"	Norway
10. Sustainable cities and communities	Purchasing cleaner public transport that uses biogas locally	Finland

Source: Developed by author based on the source [4].

Table 1 demonstrates a significant involvement in enhancing and promoting sustainable procurement across countries worldwide. Each country encounters unique challenges on its journey towards sustainable development. Particular attention should be given to the most vulnerable countries, especially those in Africa. Besides them, many middle-income countries also confronts significant challenges.

Green debt is a new tool in the sustainable procurement market that has continued to grow in the first half of 2021 [4]. The data for this period indicates a doubling of \$ 227.8 billion compared to 2020 [5]. In the first half of this year, the green issue

reached the equivalent of more than three quarters (76%) of the total amount issued in 2020, with an initial forecast of \$450 billion. This increase brings the cumulative volume of green bonds to \$1.3 billion. Analysis suggests that, even with a relatively modest growth rate, the annual volume of green bond issues could exceed \$1 trillion in 2023.

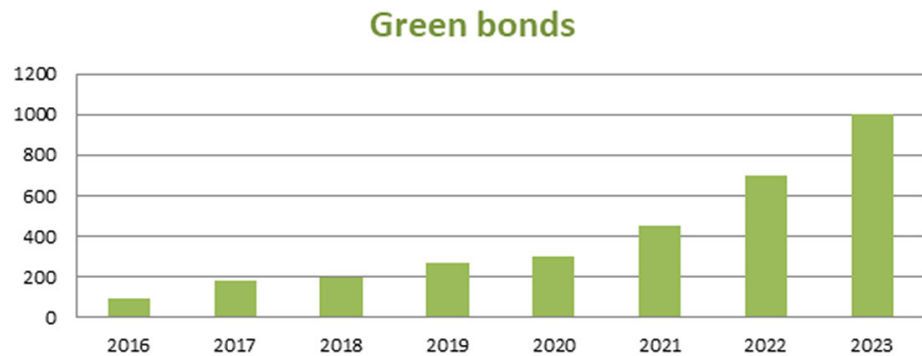


Fig. 1. Trillion annual green bonds projected for 2023

Source: Elaborated by the authors' based in the source [6].

Based on Figure 1, one can analyse the data on the growth of green purchases and forecast for 2021, 2022, and 2023 in the USA, Latin America, the Caribbean, South Africa, Europe, and Asia, which shows a significant upward trend up to 1000 trillion USD. Europe stood out as the largest emitting region, experiencing a more than doubling (107% annual volume increase) compared to the first half of 2020. This growth was primarily driven by green debt of \$119.2 billion, accounting for 52% of the total volume, from 352 issuers. More than half of the European volume originated from financial and non-financial corporations, constituting 30% and 22% respectively.

According to the analyzed source, it is found that Governments have an increasing involvement in the realization of public procurement “greener” or more sustainable. While green procurement (GPP) and sustainable procurement (PPP) refer to different concepts, their fundamental objective remains the same: use public procurement as a means to achieve minimum environmental results and, where appropriate SPP, major social outcomes.








Reasons for employing GPP or SPP include [7]:

- cost efficiency – some “greener” products and services are less expensive to use, maintain and dispose of, despite higher investment costs;
- governments can use market power to influence manufacturers to move faster to cleaner technologies; and
- increasing consumer awareness of the environmental and social implications associated with different types of purchases.

However, PPPs are one of the tools that governments can utilize to encourage both consumers and producers to adopt more sustainable behaviors. There is a need to increase support for social and environmental responsibility [6] in the private sector through regulations, incentives, and information, as well as to provide training and capacity building for small and medium-sized enterprises so that they can effectively deliver sustainable products. This direction is essential for the successful implementation of SPP policies [8].

Therefore, sustainable procurement can be organized into seven key themes, each identified by one of the icons presented in Table 2.

Table 2. Key themes for sustainable public procurement

Symbol	Key Theme Objective	Objective
	Organizational governance	– Allowing sustainability by communicating and forming internal and external priorities
	Human rights	– Emphasizing the sustainability of employees in making social procurement decisions by eliminating any discrimination and taking into account the impact of procurement on the rights of stakeholders
	Work practices	– Supporting the rights of universal workers through the supply chain, including health and safety, and supporting the development of human capacity and ensuring that human rights issues are properly addressed throughout the supply chain
	Environment	– Prevention of pollution and waste, using resources such as air, water, energy, and natural materials in a sustainable way and taking into account the impact of climate change
	Anti-corruption / fair competition	– Elimination of all forms of corruption and bribery and by supporting groups of underrepresented suppliers, such as women and young people, through the procurement process and the supply chain
	Consumer issues	– Pleading for consumer rights, which requires compliance with local and international laws
	Community development	– Purchasing reused products or requesting takeover programs, where possible, by creating local employment opportunities for women taking into account innovative local solutions

Source: Developed by the author based on the source [9].

Sustainable government procurement has become a necessity to promote more sustainable consumption and production patterns within society. As indicated in Table 2, the primary reason for engaging in SPP is based on profitability. In many

cases, public administrations can save money while also protecting the environment. Certain green products and services are less expensive to use, maintain, and dispose of, despite the higher initial investment cost. The EU transport policy contributes to the smooth functioning of the European economy by developing a modern infrastructure network that enhances travel efficiency, safety, and promotes sustainable and digital solutions [10]. In certain cases, such as copy paper in Germany, the price of the green option is equivalent to the conventional option. For employees, this means not only the composition of the materials used in the equipment, but also the durability of the equipment and the economical use of raw materials in the production of equipment and packaging. These requirements are reflected in the sustainable development strategy formulated for 2025, which includes objectives such as reducing packaging and increasing the utilization of recycled plastic.

The effort to establish a sustainable value chain is an integral part of the Hero Projects Social initiative [10]. This initiative includes the goal of linking future social obligations worldwide with the preservation of values. This is achieved through large-scale cooperation with international organizations such as the Global Fund for Nature and the sponsorship of local projects [10]. In order to develop the new sustainability strategy, the outcomes of the employee seminars and the findings from a representative survey involving clients from the USA, Germany, France, Brazil, and Japan were taken into consideration. The SDG proclaimed by the United Nations are also a crucial reference point for the new strategy. The SDGs are encompassed within three primary initiatives: Zero Emissions, Reduce, Reuse, Recycle and Hero for Social Projects.

As a result of the aforementioned projects, it has been determined that by 2030, it will be necessary to develop a sustainable and efficient management of natural resources, implement sound ecological management of chemicals and waste throughout their life cycle in alignment with adopted international frameworks, and significantly reduce their release into the air, water, and soil to minimize their negative impact on human health and the environment.

It has also been decided that by 2030, there is a need to substantially reduce waste generation through measures such as prevention, reduction, recycling, and reuse. It is a priority to encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate and respect the conditions of sustainability in their operations.

To enhance and foster SPP, it is important to ensure a substantial mobilization of sustainable resources. This can be achieved through enhanced development cooperation, providing developing countries with adequate and sustainable funding to implement comprehensive programs and anti-poverty policies in all their dimensions.

The tender quality criteria can be tailored to address the evolving economic, environmental, and social requirements of various stakeholders over time.

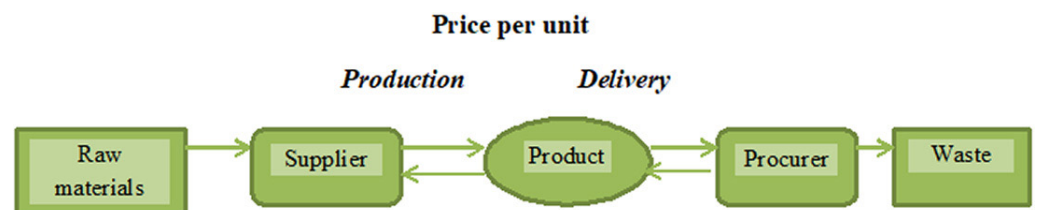


Fig. 2. Mandatory technical specifications

Source: Elaborated by the author based in the source [11].

All the criteria are important here, but three elements have a special role [5]:

- value proposition
- value creation and delivery
- value capture

Sustainable public procurement and processes, based on sustainability, should be integrated into the overall organisational business model to be successful [12].

Sustainable Development Goals change the levels of exchanged information and the nature of the collaboration between the supplier and procurer and other actors in the system [4].

Sustainable public procurement can have a significant impact on ending poverty by ensuring that supply chains protect and reward their employees. It can increase the participation of under-represented people, marginalized or vulnerable supplier groups in public through contracts, and help with local job creation opportunities. Sustainable public procurement also promotes the rights, health, and safety of workers throughout the supply chain, thus building resilience among the employees and improving their living conditions.

In the same context, it is important to promote SPP practices, in line with national policies and priorities needed to strengthen policy coherence for sustainable development [13].

One of the ambitions of the reform introduced by the 2014 public procurement directives was to facilitate the strategic use of public contracts to achieve wider societal objectives.

The implementation of green public procurement can begin with a few very simple measures, even without a comprehensive strategy. However, having a well-developed strategy and management system in place is essential ensure is the effective and systematic integration of sustainability into procurement activities in the long run. This includes setting clear targets, assigning responsibilities, and maintaining a continuous improvement approach.

Formalizing EPP ambitions in an EPP policy can help ensure the following:

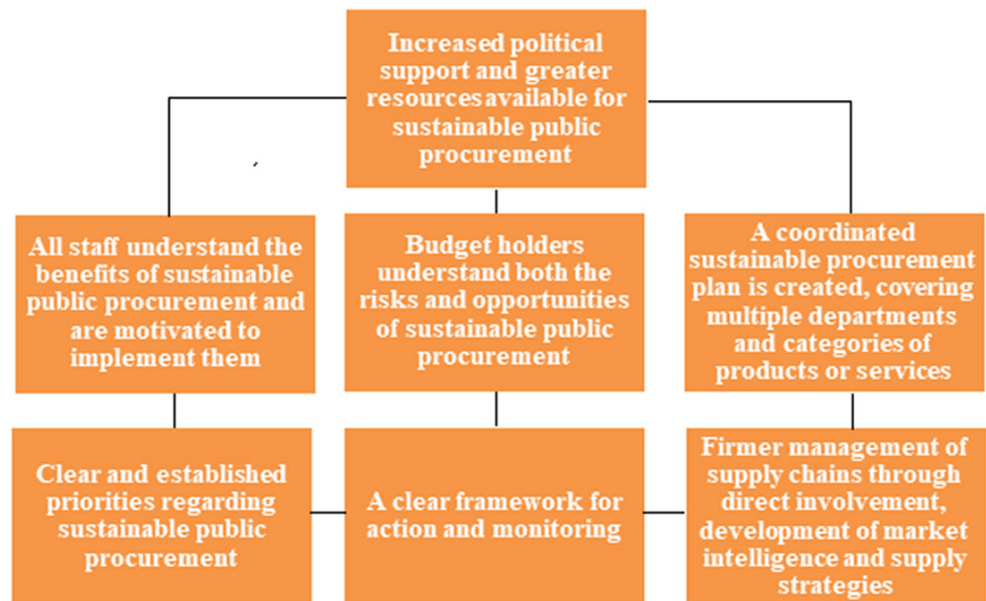


Fig. 3. Benefits of ecological public procurement within an organization

Source: Elaborated by the author based on the source [13].

Regardless of the type of policy, strategy, or commitment the organization to ensure organization-wide buy-in and adoption, maintaining continuous dialogue with all stakeholders is crucial. The dialogue should involve all key decision-makers, budget holders, and individuals responsible for day-to-day implementation, as well as all stakeholders who would be involved in or have an influence on the implementation of the EPP.

Ecological public procurement covers areas such as the purchase of energy-efficient computers and buildings, office equipment made of obtained wood in compliance with environmental regulations, recyclable paper, electric vehicles, means of public transport that protect the environment, ecological food for canteens, electricity from renewable energy sources, and air conditioning systems complying with the most advanced environmental protection solutions.

Green purchases also serve as an example and to influence the market. By promoting ecological procurement, public authorities can offer tangible incentives to industries for the development of eco-friendly technologies. In certain product sectors, works, and services, the impact can be significant as public purchasers command a significant share of the market (such as in the field of computers, energy-efficient buildings, and public transport).

In fact, when the associated costs over the whole life cycle of a contract are taken into account, public ecological purchases give the opportunity to save money while protecting the environment. From a purchasing perspective, it allows for the conservation of materials and energy, reduction of waste and pollution, and encouragement of sustainable behavioral patterns.

4 CONCLUSIONS

Sustainable government procurement is an important premise for governments worldwide to expediate the transition towards more sustainable consumption and production patterns and to help achieve sustainable development goals. Completing and supplementing the proposed programs and initiatives denotes supporting and developing SPP practices, providing an opportunity for countries to use it, including successful practices, while avoiding implementation errors or delays that have been observed in other countries.

Sustainable procurement is a comprehensive tool that plays a vital role in educating and guide consumers and producers towards adopting and practicing more sustainable behaviors.

It involves supporting social growth and environmental responsibility in the private sector through regulations, incentives, and information dissemination. Additionally, it bolstering the sustainable capabilities of small and medium-sized enterprises to effectively deliver sustainable products. These actions are essential for the implementation of a sustainable system in the public procurement policy of a state.

Author Contributions: For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used “Conceptualization, E.R. and O.M.; methodology, E.R.; validation, E.R. and O.M.; formal analysis, E.R. and O.M.; investigation, E.R. and O.M.; resources, E.R. and O.M.; data curation, E.R. and O.M.; writing—original draft preparation, E.R.; writing—review and editing, O.M.; visualization, O.M.; supervision, O.M.; project administration, E.R. and O.M.; funding acquisition, O.M. All authors have read and agreed to the published version of the manuscript.”

Funding: This research received no external funding.

Acknowledgments: This paper is developed within the project “Consolidation of sustainable public procurement in the Republic of Moldova” 20.80009.7007.15, financed from the State Budget within the State Program (2020–2023).

Conflicts of Interest: The authors declare no conflict of interest.

5 REFERENCES

- [1] “Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions,” *Public Procurement for the Creation of Environmental Conditions, Policy Documents: European Environmental Agency*, Brussels, 16.7.2008.
- [2] EU-funded “EU4Environment” Programme, the United Nations Environment Programme (UNEP), Promotion of Sustainable Public Procurement in the Republic of Moldova, 11 July, 2021. <https://www.eea.europa.eu/policy-documents/communication-from-the-commission-to-1>
- [3] SUSTENABILITY BREACKFAST 2020+, Seminarii în Brazilia, China și Germania. <https://www.kaercher.com/md/despre-kaercher/sustenabilitatea-ca-parte-a-strategiei-kaercher/angajatii-clarifica-obiectivele-dezvoltarii-durabile.html>, Accessed on 26.12.2022
- [4] Sustainable Debit Market, review, Summary H1 2021, Climate Bonds, September 2021, https://www.climatebonds.net/files/reports/cbi_susdebtsum_h12021_02b.pdf
- [5] “Project Overview,” Health Emergency Response in Interconnected Systems (HERoS). <https://www.heros-project.eu/> Accessed on 20.01.2023
- [6] K. Mónica, “Public Procurement as a Tool for Promoting More Sustainable Consumption and Production Patterns,” United Nations Department of Economic and Social Affairs (UN DESA), 2008. <https://www.greengrowthknowledge.org/research/public-procurement-tool-promoting-more-sustainable-consumption-and-production-patterns>
- [7] “Monitoring Sustainable Public Procurement Implementation: Recommendations and Case Studies,” Copyright © United Nations Environment Programme. p. 33, 2016. http://www.scpclearinghouse.org/sites/default/files/monitoring_sustainable_public_procurement_implementation.pdf
- [8] “Sustainable Development Goals,” Copyright © National Bureau of Statistics of the Republic of Moldova, <https://statistica.gov.md/pageview.php?l=ro&id=6306&idc=605> Accessed on 04.01.2023
- [9] “Safe, Sustainable and Connected Transport,” European Union. https://europa.eu/european-union/topics/transport_ro Accessed on 28.09.2022
- [10] “Sustainable Public Procurement and the Sustainable Development Goals,” Copyright © Nordic Council of Ministers, 2021. <http://norden.diva-portal.org/smash/get/diva2:1554600/FULLTEXT01.pdf> Accessed on 16.01.2023
- [11] K. Philipp and K. Jakub, “Price-Quality Ratios in Value-for-Money Awards,” *Journal of Public Procurement*, vol. 15, no. 3, pp. 275–290, 2015. <https://doi.org/10.1108/JOPP-15-03-2015-B001>
- [12] “The 17 Goals,” Department of Economic and Social Affairs, United Nations. <https://sdgs.un.org/goals> Accessed on 24.01.2022
- [13] “Green Public Procurement,” The Directorate-General for Environment, European Commission. http://ec.europa.eu/environment/gpp/index_en.htm

6 AUTHORS

Elena Rusu is lecturer and PhD(c) in Doctoral School of Economics, Moldova State University. (E-mail: gogolnicenco@mail.ru)

Otilia Manta, Doctor in Economics, Scientific Researcher in Romanian Academy, Vice-President of IRIEM; Member of Editorial Team IETI Transactions on Data Analysis and Forecasting (iTDAF); Distinguished Fellow of IETI. (E-mail: otilia.manta@rgic.ro).