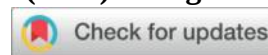




The Role of the New Development Triad — “Green Innovation, Green Economy, and Small and Medium-Sized Enterprises” — in Strengthening Triple Sustainability Governance (ESG) in Algeria



KENZA BELHOCINE ¹, OUARDA KHELIFI ², ZIDANI ABDELMOUTALEB ³

¹ Legal, Political and Shariaa research laboratory, University of Khenchela,(Algeria). EMAIL: belhocine.kenza@univ-khenchela.dz

² State laboratory for health and nutrition social security, University of Khenchela,(Algeria).Email: warda.khelifi@univ-khenchela.dz

³ Mohamed El Bachir El Ibrahimi , University Bordj-Bou-Arréridj ,(Algeria). Email: zidaniabdelmoutaleb@yahoo.fr

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Abstract:

This research paper aims to highlight the complementary relationship between green innovation, which enhances the green economy through small and medium-sized enterprises (SMEs), and the governance of triple sustainability (ESG). The functional integration among the new development triad represents a new mechanism and approach for designing and implementing solutions to strengthen ESG sustainability. Moreover, addressing environmental challenges creates opportunities for economic growth within the framework of clean technology and green innovation.

Keywords: Triple Sustainability (ESG), Green Innovation, Green Economy, Small and Medium-sized Enterprises (SMEs).

1. Introduction:

Sustainability has become a field of converging efforts aimed at achieving a higher standard of human life through development within an appropriate economic, social, and environmental framework—one that ensures the preservation of natural capital without its depletion.

Today, ESG (Environmental, Social, and Governance) sustainability governance represents one of the most important considerations taken into account when formulating strategies and designing national plans, as it

supports efforts to confront the environmental threats facing our planet amid economic challenges and corporate governance concerns.

An in-depth examination of the core solutions and foundational pillars that can enhance triple sustainability—across its environmental, economic, and institutional dimensions—reveals the new development triad, represented by green innovation, the green economy, and small and medium-sized enterprises (SMEs).

This research paper aims to highlight the complementary relationship between green innovation—which drives the green economy through SMEs—and the governance of triple sustainability.

It seeks to answer the following central question: **To what extent does integrating the new development triad—green economy, green innovation, and SMEs—into national programs contribute to strengthening ESG sustainability governance?**

2. The Impacts of the New Development Triad on the Issue of Triple Sustainability (ESG) in Algeria

Amid current developmental transformations, Algeria seeks to align the new development triad with the principles of the triple sustainability framework (ESG) by adopting the green economy as a strategic choice within the growth plans of 2015–2019 and 2016–2030, aiming to achieve balance among the economic, social, and environmental dimensions of sustainable development.

2.1 Green Economy and Growth Plans (2015–2019 / 2016–2030)

The United Nations Environment Programme (UNEP) began promoting the concept of the green economy in 2008, initially as a Global Green New Deal. This initiative resonated with various national proposals bearing similar names and was also promoted by green parties and social democratic parties. Furthermore, the Organisation for Economic Co-operation and Development (OECD) reinforced several variables related to both the green economy and green growth, treating them as interchangeable approaches to achieving sustainable development through identifying cleaner sources of growth (Levidow, 2018, p. 01).

The concept of the green economy gained further international prominence when the United Nations General Assembly, through its

resolution 64/236 of 24 December 2009, decided to convene the United Nations Conference on Sustainable Development (UNCSD) in 2012. The conference focused on the central theme of the green economy in the context of sustainable development and poverty eradication.

Additionally, the Eleventh Special Session of the Governing Council/Global Ministerial Environment Forum of UNEP, held in Bali, Indonesia, in February 2010, provided an opportunity for environment ministers to deliberate on environmental issues within the multilateral system. The topic of the green economy was one of the three main subjects under consideration.

In his summary of the discussions, the President of the Council/Forum stated that the green economy represents the right path toward a more robust, cleaner, and fairer global economy, and constitutes a necessary condition for establishing more stable economic foundations. He noted that many countries have shown the political will to transition toward a green economy, with some already committing to and implementing elements of such an economic program. This indicates that countries that act swiftly in this transition are likely to become the advanced economies of the future, whereas those that move slowly risk becoming the newly underdeveloped nations.

The discussions held during the Eleventh Special Session led to the adoption of the Nusa Dua Declaration, in which ministers and heads of delegations acknowledged that advancing the concept of the green economy within the context of sustainable development and poverty eradication could significantly contribute to addressing current challenges, creating opportunities for economic growth, and providing multiple benefits to all nations. They also emphasized the key leadership role played by the United Nations Environment Programme (UNEP) in advancing discussions to better define and promote this concept (United Nations Report on the Benefits, Challenges, and Risks Associated with the Transition to a Green Economy, 2011, pp. 04–05)

In 2011, the UNEP defined the green economy as an economy that “results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities” (Cantarell, 2014, p. 27)

Accordingly, the concept of the green economy can be built upon three fundamental pillars:

- Addressing environmental challenges.
- Stimulating economic growth.
- Rationalizing human management and promoting social justice.

Like many other countries, Algeria has recently undertaken a series of reforms and initiatives aimed particularly at diversifying the economy, improving the business climate, enhancing energy security, protecting the environment, developing green economy sectors, and promoting territorial development. Algeria views the green economy as a means to achieve the Sustainable Development Goals (SDGs), create employment opportunities, support economic growth, foster innovation, and reduce poverty—through the gradual transition toward an economy that takes into account the challenges of the circular economy and energy transition.

The new five-year growth plan (2015–2019) identifies the green economy as a lever for development and technological progress, encouraging investments in key sectors of the green economy, namely agriculture, water, waste recycling and recovery, industry, tourism, and renewable energy.

The new growth model (2016–2030) was approved in July 2016, aiming to ensure a continuous path of growth, double the share of the manufacturing sector, modernize agriculture, achieve an energy transition, and diversify exports (Huda, 2020, p. 50)

This model established the policies to be adopted to strengthen the transition toward a green economy, namely:

- Reducing spending in areas that deplete natural capital.
- Investing in capacity building and training to seize green economic opportunities.
- Supporting renewable energy initiatives.
- Promoting green architecture, as the transition to a green economy requires a focus on environmentally friendly construction that conserves water—given the scarcity of water resources—and reduces electricity consumption amid increasing energy demand.

Securing the water sector, which constitutes a fundamental component of ecological sustainable development.

Waste recycling, since green waste management leads to job creation and investment opportunities in recycling, organic compost production, and

energy generation. It also contributes to environmental protection from pollution, improves agricultural productivity, and thereby enhances triple sustainability (ESG)

Supporting sustainable agriculture by adapting new agricultural technologies to mitigate the impacts of climate change and strengthen development partnerships to face environmental challenges and support the economy (Tabni, 2019, pp. 200–201).

2.2 Green Innovation as a Modern Tool to Support Small and Medium-Sized Enterprises (SMEs) in Achieving Triple Sustainability (ESG)

Green innovation is considered a new mechanism and approach for designing and implementing solutions aimed at enhancing the green economy and promoting environmental sustainability, particularly through small and medium-sized enterprises (SMEs). In recent years, global attention toward green innovation has grown significantly due to its role in achieving both economic and environmental performance and its impact on fostering sustainable competitive advantage based on green product innovation. Consequently, this topic has attracted the attention of numerous researchers and economists and was later adopted by the business sector, particularly within innovative SMEs, becoming one of the most strategic tools used to serve the green economy and environmental sustainability (Kouider, 2019, p. 54).

The Organisation for Economic Co-operation and Development (OECD) defines innovation as: "The significant improvement of existing products—goods or services—through the introduction of entirely new products to the market, or through new processes, new marketing methods, or new organizational methods in business practices". (Khadija W., 2020, p. 153).

Green innovation refers to the creation of methods, technologies, and procedures that contribute to reducing the negative environmental impacts of production processes and products, ensuring the sustainability of the environment and its resources in a way that serves both current and future generations (Obaid, 2020, p. 171).

Accordingly, the concept of green innovation can be built upon the following key elements:

Innovation in green products aimed at reducing energy consumption, minimizing resource depletion, and protecting against pollution.

Development of green technological and organizational innovations that contribute to achieving triple sustainability (ESG).

The essence of green innovation lies in improving the environmental efficiency of a product through functional innovation at the stage of generating new product ideas. Green business innovation restructures or redefines relationships related to the creation and distribution of green jobs, leveraging the interconnections between them.

Green innovation also incorporates the concept of environmental management, which is now being promoted to address issues of environmental pollution. It has thus become a vital solution for overcoming pressures from customers, competitors, and regulatory bodies.

According to organizational theory, when a company perceives green innovation as an effective means of responding to institutional pressures or achieving a competitive advantage, it tends to develop the necessary green capabilities to implement such innovations through the creation of various organizational support mechanisms. Green innovation therefore plays a crucial role in promoting and activating green growth.

Hence, decision-makers must recognize the importance of implementing green innovation, as it has become the only viable option for the development and growth of small and medium-sized enterprises (Kouider, 2019, p. 55).

Although the Algerian legislator did not explicitly refer to green innovation in Law No. 03-10 concerning environmental protection within the framework of sustainable development, a close reading of its provisions reveals ****implicit reference**** to the concept through Article 02, which states : "as well as the use of cleaner technologies..." (Article 02, Law No. 03-10).

This can also be inferred from Article 76 of the same law, which stipulates that industrial enterprises importing equipment that allows, within the framework of their production processes or products, the elimination or reduction of the greenhouse effect and the mitigation of pollution in all its forms shall benefit from financial and customs incentives determined by the Finance Law (Article 76, Law No. 03-10).

In order to encourage green innovation, the Algerian legislator established a national award in the field of environmental protection for any company or enterprise that produces environmentally friendly products or adopts

technologies that do not harm the environment. Additionally, such enterprises are granted tax reductions as part of the incentive framework.

Green innovations play a key role in promoting and activating green growth, and they represent a fundamental pathway for achieving triple sustainability (ESG) within small and medium-sized enterprises (SMEs). Moreover, they enable these enterprises to strengthen their competitive advantage compared to other firms.

On the other hand, green innovation has become increasingly important for SMEs due to the rising environmental awareness among consumers, who now prefer to purchase products that are less harmful to the environment (Dhiab, 2019, p. 137).

3.Opportunities and Challenges of National Strategies Toward Achieving the New Triad for Supporting Triple Sustainability (ESG).

In pursuit of comprehensive sustainable development, the new development triad represents a strategic framework aimed at supporting triple sustainability (economic, social, and environmental – ESG). Within this context, Algeria, through its national strategies and programs, seeks to transition toward a green economy by promoting green innovation—particularly within the framework of small and medium-sized enterprises (SMEs)—as a necessary response to environmental degradation and growing global challenges.

These efforts are reflected in various national development plans, such as the New Growth Model (2016–2030) and the Renewable Energy Development Program (2011–2030), which together aim to build a diversified and sustainable economy that balances the three dimensions of development. Ultimately, Algeria’s commitment to green transformation contributes to strengthening environmental, social, and economic governance while advancing the principles of ESG-based sustainability.

3.1 National Strategies and Programs for Achieving the New Development Triad in Algeria.

The green economy and green innovation, particularly within the framework of small and medium-sized enterprises (SMEs), are considered a response to the effects of environmental degradation and global challenges—especially environmental ones. They have become an essential and inevitable

requirement to halt the multifaceted environmental deterioration and are described as tools for mobilizing nations toward sustainable development.

The transition to a green economy can be achieved through a focus on priority sectors such as agriculture, forestry, water, and tourism, and by relying on a set of enabling tools, including green energy, green investment, green technology, green buildings, and green jobs. Many countries have recognized the importance of establishing national green economy plans or integrating the green economy into their development strategies (Omar, 2019, p. 104).

Some economists argue that addressing environmental challenges provides opportunities for economic growth within the framework of clean technology and green innovation, which demonstrates positive contributions to achieving ESG sustainability governance (Wajdi, 2016, p. 168).

Like many other nations, Algeria has adopted several strategies for transitioning toward a green economy, including:

- The Hybrid Solar-Gas Power Plant in Hassi R'Mel Cement plants with fabric filters, under the slogan "Healthy Citizens."
- The Beni Haroun Dam.
- The Five-Year Public Investment Program (2010–2014).
- The New Five-Year Growth Plan (2015–2019).
- The New Growth Model (2016–2030) (Omar, 2019, pp. 112–113).
- The National Spatial Planning Scheme (2010–2030).
- The National Climate Plan (2015–2050).
- The National Program for the Development of Renewable Energies (2011–2030).

2.3The Challenges of Achieving Governance of the New Developmental Triad in Algeria.

-Reducing dependence on the hydrocarbons sector and moving toward alternative energies for a green economy :

Given the fluctuations affecting hydrocarbon exports amid changing global markets, declining national reserves, and the growing competition from alternative energies, Algeria must invest in sustainable productive sectors that generate wealth and employment opportunities. This can be achieved through the green economy sectors, which aim to strengthen the

interconnection between the economy, the environment, and development. This requires the adoption of effective economic policies to preserve the environment and limit its degradation due to climate change, which now threatens health and life in general. The renewable energy sector is considered one of the fundamental pillars of environmental performance in order to support economic growth, enhance green innovation, and reduce emissions. (Tbaybya, 2019, p. 22).

-Generalizing proactive green innovation systems and green products :

The Algerian state must generalize green innovation systems, particularly proactive environmental innovation, which involves a set of new practices or products introduced by enterprises such as environmental inventions, environmental awareness activities, and the promotion of an environmental culture, along with an administrative desire to preserve the environment. These activities or products do not represent mandatory responses to laws or external pressures. (Khadija K., 2019, p. 63).

Furthermore, the promotion of green products should be encouraged, as they reflect the use of natural resources and raw materials in harmony with environmental standards and requirements. Existing production processes must be adapted primarily to minimize waste during production, reduce pollution levels to the lowest possible degree, and create opportunities for reusing residues through collection, treatment, and classification. (Khadija K., 2019, p. 62).

- Promoting the small and medium-sized enterprises (SME) sector:

The SME sector is one of the most crucial sectors relied upon for the development of countries—particularly developing ones—due to its contribution to wealth creation, increasing the Gross Domestic Product (GDP), boosting exports, and promoting employment. However, unfortunately, it still plays a marginal role in advancing economic development in Algeria, despite its evolution since 2000 thanks to state support programs aimed at establishing such enterprises, as well as international cooperation programs. Nonetheless, the complexity of certain procedures, lack of expertise, and market fluctuations have driven many

entrepreneurs to withdraw, leaving the hydrocarbons sector as the main source of state revenue. (Salma, 2016, p. 681).

Therefore, government bodies and specialized institutions must focus on training and retraining available human capacities, making this a strategic axis within their programs that aim to promote SMEs across various sectors, especially the industrial ones. These institutions should also provide necessary facilitation measures, thereby enhancing the contribution of SMEs to job creation, GDP growth, and added value.

4. Conclusion:

The study addressed the role of the new development triad*—green innovation, the green economy, and small and medium-sized enterprises (SMEs)—in strengthening ESG (Environmental, Social, and Governance) sustainability governance in Algeria. It examined various dimensions related to the effects of this new developmental triad on the issue of ESG sustainability in Algeria, as well as the opportunities and challenges of national strategies aimed at achieving this triad to support ESG sustainability. Through this analysis, a set of findings and recommendations were reached:

4.1 Findings :

- Tackling environmental challenges provides opportunities for economic growth within the framework of clean technologies and green innovation.
- Green innovations play a key role in promoting and activating green growth; they also represent the primary pathway toward achieving the triple sustainability of small and medium-sized enterprises.
- Among the pillars for achieving ESG sustainability governance is the innovation of green products aimed at reducing energy consumption, limiting resource depletion, protecting against pollution, and developing green technological and organizational techniques.
- Global interest in green innovation has increased in recent years due to its role in achieving sound environmental and economic performance, as well as its impact on ESG sustainability governance.
- In recent years, Algeria has initiated a number of reforms and initiatives specifically aimed at diversifying the economy, improving the business climate, strengthening energy security, protecting the environment, and developing green economy sectors through developmental programs and

strategic plans that reflect international attention to rational ESG sustainability.

4.2 Recommendations:

- Algeria must invest in sustainable productive sectors, particularly those aligned with the green economy and led by small and medium-sized enterprises using green technologies—moving away from the traditional economy.
- It is necessary to orient SMEs toward investing in the green economy and binding them to proactive green innovation as a means to strengthen ESG sustainability governance.

5 .References

- Law No. 03-10 of January 8, 2003, on environmental protection within the framework of sustainable development. Official Journal, (No. 43).
- United Nations Report. (2011). Benefits, challenges, and risks associated with the transition to a green economy.
- Nouredine, A. M. W. (2016). International protection of the environment from the Stockholm Conference of 1972 to the Doha Conference of 2012. Beirut, Lebanon: Zain Legal Publications.
- Basir, K. K., & Amer, R. D. (2019). Green innovation and its impact on enhancing sustainable competitive advantage. *Journal of Economics and Administrative Sciences*, 25(112).
- Ben Talha, S. (2016). The role of small and medium-sized enterprises in achieving economic and social development in Algeria. *Economic Dimensions Journal*, 6(2).
- Ben Moussa, M., & Kouman, O. (2019, December 2–3). *Strategies and mechanisms for supporting the transition to the green economy in the context of sustainable development (with reference to the Algerian case). The 8th International Conference on Modern Trends in International Trade and Sustainable Development Challenges: Towards Promising Future Visions for Developing Countries, Faculty of Economic, Commercial, and Management Sciences – University of Martyr Hamma Lakhdar. Retrieved from [http://dspace.univ-eloued.dz/handle/123456789/4820]

- Khnous, S., & Obeid, S. (2020). Green architecture as a model for applying green innovation. *Afak Journal of Management and Economic Sciences*, 4(1).
- Ben Youb, F., Bouharine, F., & Tbaybya, S. (2019). Achievements of the green economy in the renewable energy sector as a vital alternative for diversifying the national economy. *Journal of Human and Social Sciences*, (52).
- Qalash, A., & Belhaji, K. (2019). The role of green innovation in enhancing corporate environmental responsibility: A review of selected experiences. *Journal of Entrepreneurship and Sustainable Development*, 2(1).
- Kaki, A. K., & Bouragba, K. (2019). The new triad: Green innovation, green economy, and SMEs, and the issue of sustainable development: Applying the approach to the Algerian case. *Revue Économie & Management*, 18(1).
- Mohamed, H. (2020). Presentation and analysis of Algeria's development programs during the period 2001–2019. *Journal of the Faculty of Politics and Economics*, (5).
- Messaoud, N., Rahmoun, R., & Tabni, M. (2019). The green economy as a mechanism for achieving sustainable development. *Journal of Business and Trade Economics*, 4(2).
- Wenoughi, N., & Merija, K. (2020). Green innovation as a new tool for supporting and promoting SMEs: Its position in Algerian legislation and its role in achieving sustainable development. *Academic Journal for Legal Research*, 11(3).
- Newton, A. C., & Cantarell, E. (2014). *An introduction to the green economy: Science, systems & sustainability*. New York: Routledge.
- Levidow, L. (2018). Green economy. In *The Routledge Companion to Environmental Studies*. Routledge.