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Contributors

1. Adeyemo, Julius Abioye
   Dept. of Public Relations & Advertising
   Faculty of Communication & Media Studies
   Lagos State University

2. Agbaje, Funmilayo Idowu
   Dept. of Peace, Security & Humanitarian Studies
   Faculty of Multidisciplinary Studies
   University of Ibadan, Nigeria

3. Aliu, Olayinka
   Dept. of History & International Studies
   Federal University Lokoja

4. Amende, A. Charles
   Dept. of Languages & Linguistics, Nasarawa State University, Keffi

5. Balogun, Wasiu A.
   Dept. of History & International Studies Lagos State University
   Ojo, Lagos

6. Bamisile, Sunday Dept. of Foreign Languages, Lagos State University.

7. Bello, Zainab,
   Dept. of Industrial Design,
   Faculty of Environmental Design, Ahmadu Bello University, Zaria.

8. Ishola, Tajudeen Odebode Lagos State University, Ojo
   Dept. of Religions & Peace Studies Peace Studies Unit

9. Lawal, Muhammed Adeyemi
   Dept. of English
   Lagos State University
   Ojo, Lagos, Nigeria

10. Modu, Ibrahim Alhaji
    Dept. of History
    University of Maiduguri

11. Mohammed, Abubakar
    Dept. of History
    University of Maiduguri

12. Muojama, Olisa Godson
    Dept. of History
    University of Ibadan

13. Ogah, Ashikeni Thomas
    Dept. of Languages & Linguistics
    Nasarawa State University Keffi

14. Okutepa, Alhaji Momoh
    Dept. of History & International Studies
    Federal University Lokoja

15. Oladejo, Olanrewaju Abdulwasii
Dept. of Peace, Security & Humanitarian Studies,
Faculty of Multidisciplinary Studies,
University of Ibadan, Nigeria

16. Olatade, Damilola Peter
Dept. of Philosophy,
Lagos State University
Ojo, Lagos, Nigeria

17. Saidu, Amina Ramat
Dept. of History University of Maiduguri

18. Salat, Abubakar Abdulahi
salaty.aa@unilorin.edu.ng

19. Suleiman, Abdulsalam B.
Dept. of Religions & PeaceStudies
Lagos State University, Ojo

20. Suleiman, Hassan Biodun
Dept. of Journalism & Media Studies
Faculty of Communication & Media Studies Lagos
State University Ojo,
Lagos.

21. Umaru, Yakubu Jacob
Dept. of Languages & Linguistics
Nasarawa State University, Keffi

22. Warasini, Haruna Tsingari
Dept. of History
University of Maiduguri

23. Yusuf, Olanrewaju, Ph.D.
Peace & Conflict Unit,
Dept. of Religions & PeaceStudies
Lagos State University, Ojo

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Nigeria's Gas Diplomacy and Regional Development in West Africa: The Role of Gas Supply Agreements

Balogun, Wasiu A., PhD

Abstract

With a focus on Nigeria's gas supply agreements with Ghana, Togo, and Benin, this study interrogates the energy factor in regional development in West Africa. Energy is critical to global political economy. Gas, particularly natural gas, is a major driver of regional economic cooperation and integration. Gas production and supply chain can engender and shape regional economies, markets, and development trajectories, and gas-rich countries and regions across the globe are increasingly deploying their natural gas endowments in furtherance of foreign policy and diplomacy. Gazprom's supply agreements with Europe and LNG supply agreements in Asia have heralded the age of gas diplomacy. However, the prospects of a "gas-fired" regional economic cooperation depends on a range of factors, including gas processing and transportation infrastructure, and the legal, regulatory and economic conditions in a given region. Using regional integration theory, this paper analyses Nigeria's gas diplomacy and the "gaseous' state of cooperation and integration in West Africa, highlighting the benefits and challenges that exist in the articulation of Nigeria"s gas diplomacy and the implementation of gas agreements. The paper concludes that there is a need for continued investment in energy infrastructure and regulatory frameworks to support the implementation of gas supply agreements, and the urgent need to address energy security challenges for a sustainable and mutually beneficial economic cooperation and integration agenda in West Africa. The findings of this research will provide valuable insights for policymakers, businesses, and individuals involved in the entire gamut of energy cooperation and integration processes, mechanisms, and infrastructure in West Africa.

Keywords: Nigeria's gas diplomacy, regional cooperation, gas supply agreements, West Africa, energy infrastructure

Introduction

NIGERIA IS ONE OF THE WORLD'S LEADING PRODUCERS OF NATURAL GAS, with vast reserves estimated at 203.16 trillion cubic feet (tcf) as of January 1, 2021.

This makes Nigeria the largest natural gas producer in Africa and the ninth-largest in the world (NNPC, 2021). Nigeria's gas production has been on an upward trend since 2000, with some fluctuations over the years. In 2020, Nigeria produced 7.6 billion cubic feet of gas, which is slightly higher than the production levels in the previous years (NNPC, 2021). The increase in gas production can be attributed to the development of new gas fields, the expansion of existing gas infrastructure, and the implementation of policies aimed at promoting gas exploration and production in the country. But these potentials do not capture the entirety of Nigeria's gas story. In her quest to avoid resource curse which characterized crude oil development, and transform natural endowment to a critical element of power, Nigeria has engineered a frame to ramp up investments in gas reserves and local supply chain infrastructure. In addition, the country is deploying her gas resources as a tool for diplomacy and economic development through gas supply agreements with neighbouring countries, such as Ghana, Togo, Gambia, and Benin, aimed at providing them with natural gas. Such gas supply agreements are expected to improve regional cooperation and integration, but their impact on the countries involved has yet to be adequately investigated.

Nigeria is also using her gas reserves as a tool for regional integration and cooperation, particularly through the West African Gas Pipeline (WAGP) project, which is projected to supply natural gas to neighbouring countries such as Ghana, Togo, and Benin. Moreover, gas is a major driver of bilateral relations between Nigeria and countries like the United States, China, Norway and India. For instance, in April this year, the NNPC signed a memorandum of understanding (MoU) with a Norwegian company, Golar LNG (GLNG), to build a floating liquified natural gas (LNG) plant in Nigeria (*The Cable*, April, 2023). Nigeria also signed an MoU with China in 2017 for the construction of a pipeline to supply gas to Nigeria's power plants, which would enhance the country's electricity generation capacity. Similarly, Nigeria has a long-standing partnership with the United States, a major investor in Nigeria's gas infrastructure such as the Brass LNG project in the Niger Delta. Most recently, Nigeria-Morocco gas dialogue received a major boost with renewed commitment on the part of the two countries towards expanding the capacity of Nigeria's gas supply infrastructure to meet local energy demands in Morocco.

The objective of this study is to assess the impact of Nigeria's gas diplomacy on regional integration and development, with a specific focus on the gas supply agreements signed with Ghana, Togo, and Benin in West

Africa. The study examines the extent to which the agreements have improved regional energy security, reduced carbon emissions, and fostered economic growth and development. Additionally, the research evaluates the potential challenges and opportunities associated with the gas supply agreements, including the political, economic, and environmental implications for the countries involved. By examining the impact of Nigeria's gas diplomacy on regional integration and development, this research contributes to a better understanding of the role of natural gas in promoting sustainable development in West Africa. The findings of this study will be useful for policymakers, investors, and other stakeholders interested in promoting regional cooperation and integration through natural gas supply agreements. Meanwhile, the study is divided into seven sections. Following this introduction, is the conceptual analysis, literature review and theoretical framework. These sections are followed by an interrogation of Nigeria's gas diplomacy, gas supply agreements and their impact. The paper ends with a summary and conclusion.

Conceptual Clarification

Gas diplomacy and gas supply agreements are two interrelated concepts that form the fulcrum of this research. Gas diplomacy refers to the use of natural gas resources as a tool for achieving diplomatic goals, such as enhancing economic cooperation, building strategic partnerships, and promoting national interests. Gas diplomacy can take many forms, including the negotiation of gas supply contracts, the establishment of join ventures with foreign partners, the provision of technical expertise, and the development of gas transportation infrastructure. By engaging in these activities, countries can enhance their energy security, expand their economic influence, and build strategic alliances with other nations. Gas supply agreements (GSAs) are legally binding contracts that govern the sale and purchase of natural gas between a supplier and a buyer. The terms of a GSA typically include the quantity of gas to be supplied, the price of the gas, the delivery schedule, and the technical specifications for the gas.

Regional integration is the process by which countries come together to form a larger regional bloc typically for socioeconomic and political considerations. Such a process could manifest in the form of free trade agreements, customs unions, common markets, and political unions. Examples of regional integration organizations include the African Union, Economic Community of West African States (ECOWAS), the Association of South East Asian Nations (ASEAN), among others. The relationship between gas diplomacy, gas supply agreements and the goal of regional integration is complex and multifaceted, and this intricate relationship provides the context for this research.

Literature Review

Gas diplomacy refers to the use of natural gas as a tool for diplomacy and foreign policy objectives (Mallapaty, 2019). This exulted diplomatic influence of natural gas has evolved overtime, particularly among major gas-exporting countries, and with the global surge for resource diversification and energy transition (Colgan, 2017). Both Mallapaty (2019) and Colgan (2017) maintain that gas diplomacy may spur energy security, economic growth, and political stability, but such gains may be eroded by challenges, such as market volatility, political risks, and environmental concerns. Indeed, there are as much benefits of gas diplomacy as there are challenges. Ouyang and Yu (2022), in their analysis of Russia-China gas relations, argue that natural gas diplomacy is a crucial component of the broader energy diplomacy strategies of the two countries, and that their approach to gas diplomacy is shaped by their respective geopolitical interests. Specifically, the authors argue that Russia seeks to use its natural gas resources as a tool for maintaining its influence over European energy markets, while China seeks to secure reliable and affordable energy supplies to support its economic growth. With a focus on Asia-Pacific region, Guo (2022) examines the role of gas diplomacy in energy security strategies of countries in the region. The author argues that gas diplomacy has become a key tool for promoting energy security and fostering diplomatic relations between countries in the region. Over all, as Stacey and Okoro (2021) concluded, gas diplomacy has the potential to improve energy security, promote economic development, and foster regional stability.

One of the key drivers of gas diplomacy is the growing global demand for natural gas, particularly in Asia. According to the International Energy Agency (IEA), global demand for natural gas is projected to increase by 1.6% per year between 2020 and 2025, driven by strong demand growth in Asia (IEA, 2021). As a result, countries with significant natural gas reserves, such as Russia, Qatar, and Iran, have been using their gas exports as a tool for promoting foreign policy objectives and strengthening diplomatic ties. Another important factor driving gas diplomacy is the changing geopolitics of energy. As noted by Goldthau and Sovacool (2012), the growing interdependence of countries in the global energy market has led to the emergence of energy as a key factor in international relations. This has led to a greater focus on energy security and the use of energy resources as a tool for promoting foreign policy objectives.

Regional cooperation and integration are an essential component of economic development in West Africa (UNECA, 2020). The Economic Community of West African States (ECOWAS) has the mandate to promote regional integration through various initiatives, including the development of a regional energy market, and Nigeria, as the largest economy in the region, has a critical role to play in this regard. Adenikinju et al. (2018) affirm that regional cooperation in the energy sector can lead to significant benefits,

including improved energy access, reduced energy costs, and enhanced energy security.

In another recent publication, Otobo (2022) examines the role of regional economic communities (RECs) in promoting regional integration and development in West Africa. The author argues that while RECs such as ECOWAS have the potential to play a critical role in promoting economic growth and integration in the region, they face significant challenges in terms of financing, institutional capacity, and political will. Diamint and Kummritz (2022) analysed the challenges and opportunities facing the Economic Community of West African States (ECOWAS) in promoting regional integration. The authors argue that while ECOWAS has made significant progress in promoting regional cooperation, there are still significant challenges to overcome, including political instability, economic disparities, and security threats.

Djedouboum (2022) examined regional integration from the perspective of energy infrastructure. The author argues that infrastructure projects such as the West African Gas Pipeline and the Trans-West African Coastal Highway have the potential to facilitate cross-border trade and investment, but require significant political and financial investment to be successful.

Natural gas supply agreements have the potential to enhance energy security. Okafor and Oladosu (2019), noted that natural gas supply agreements can improve energy security, foster economic growth, and reduce carbon emissions. Yang et al. (2022) also argue that gas supply agreements can provide an alternative to traditional gas suppliers and promote energy security. However, there are also potential challenges associated with these agreements, such as political instability, legal disputes, and environmental concerns. Hence, Boudreaux (2018) suggests that natural gas supply agreements should be approached with caution, and careful consideration should be given to potential risks and benefits of such agreements.

Theoretical Framework: Regional Integration Theory

This study is anchored on regional integration theory (RIT). RIT examines the economic, political, and social factors that underpin the drive by states to enter into regional integration agreements. RIT developed from the ideas of scholars such as Ernst Haas (1958), Robert Keohane and Joseph Nye (1971), Andrew Moravcsik (1991), and Philippe C. Schmitter and Alexander H. Stone Sweet (1994). Today, the theory is being widely used by scholars and practitioners of regional cooperation and integration across different jurisdictions. Gupta et al. (2022) applied the RIT in analyzing the impact of regional cooperation on economic growth in South Asia. A similar approach was adopted by Mahfuz and Sarker (2022) in their analysis of the impact of regional cooperation on energy security in Southeast Asia. Despite jurisdictional differences, the

authors hold the consensus that regional cooperation is vital to addressing energy security challenges.

Regional integration theory (RIT) is a multi-dimensional cause-–effect framework towards understanding the dynamics of regional economic integration and cooperation. The theory is at the heart of economic, political, and sociocultural variables that determine the effectiveness of regional cooperation and integration. RIT identifies economic interdependence as a key driver of regional integration. And as observed by Baldwin and Jaimovich (2012), regional trade agreements (RTAs) are more likely to be formed between countries that have a high degree of bilateral trade and investment flows. This suggests that economic interdependence is a critical factor in driving regional integration. However, political cooperation also drives regional integration. Countries in a region often face common security threats, and by working together, they can pool their resources and coordinate their responses more effectively. For example, the European Union (EU) was formed in part to promote political cooperation and reduce the likelihood of war between European countries.

Cultural and social ties can also play a role in driving regional integration. Countries that share a common language, religion, or historical heritage may have a greater sense of shared identity and be more likely to come together to form a regional organization. For example, research by Haas (1958) on the formation of the European Coal and Steel Community found that shared cultural and historical ties played an important role in bringing European countries together. Regional integration requires the creation of institutions that can manage economic, political, and social cooperation between countries. As Limão and Venables (2001) argue, the creation of institutions is a critical factor in promoting regional integration, as it can help countries to coordinate their policies and reduce transaction costs. However, creating effective institutions can be a difficult and complex process, as countries must negotiate the terms of their cooperation and balance their own interests with those of the region as a whole.

The relationship between regionalism and globalization is a subject of ongoing debate in regional integration theory. Some scholars argue that regional integration is a response to the challenges posed by globalization, and that it represents a way for countries to protect their interests in an increasingly interconnected world.

In the context of regional gas agreements, RIT can be useful in several ways. Firstly, the theory can help to explain the motivations behind the agreements. Secondly, the theory can help to identify the potential benefits and challenges of the agreements. Thirdly, the theory can help to inform policy recommendations to enhance regional cooperation and integration in the gas sector. In all, RIT provides a useful framework for understanding the impact

of regional gas agreements on regional cooperation and integration. Despite its usefulness in energy sector, RIT has some limitations that should be taken into consideration. The theory may oversimplify the complex processes and dynamics of regional cooperation and integration. In addition, the theory tends to assume that regional cooperation and integration are linear and predictable processes, which may not always be the case in practice.

Nigeria's Gas Diplomacy

Generally, natural resource endowments play an important role in international relations. With the global energy transition and accelerated deployment of renewable energy technologies, mineral resource endowments are expected to assume greater significance in global politics. Either as objects of trade or instruments of power, natural resources form a critical part of statecraft. I have argued elsewhere in affirmation of the role of gas in foreign policy and geopolitics especially in the Baltic region (see Balogun, W.A., 2021). However, given Nigeria's gas reserves, it is expected that gas will play a crucial role in the country's diplomatic engagements in the 21st century. And indeed, gas has emerged as a critical component of Nigeria's foreign policy since the last decade, shaping the country's relations with her immediate neighbors and energy-dependent economies across the world. Nigeria's Gas diplomacy is, primarily, the strategic use of the country's natural gas resources to advance her foreign policy objectives. The aim of Nigeria's gas diplomacy is to leverage the country's vast gas reserves to promote regional and global economic growth and development, while also enhancing her diplomatic relations with other countries. This strategic approach is intended to promote the export of Nigerian natural gas, attract foreign investment in Nigeria's gas industry, develop new gas infrastructure and technologies to support these efforts, position Nigeria as a key player in the global energy market, and secure long-term economic benefits (Adenikinju & Alade, 2016).

In articulating a framework for maximizing the use of her gas endowments in furtherance of her foreign policy objectives, Nigeria has pursued several strategies. The country has sought to diversify its export markets, accelerated the drive to attract foreign investment in her gas industry, and is scaling up investments in developing new gas infrastructure. Traditionally, Nigeria has relied on Europe as its primary market for natural gas exports. However, in recent years, the country has sought to reduce its dependence on any single market by expanding its gas exports to new markets in Asia and Latin America. There is also an accelerated drive to attract foreign investment in the gas industry, particularly in the area of liquefied natural gas (LNG) by offering various incentives, such as tax holidays and regulatory reforms to attract foreign investors (Oguntade, 2016; Adenikinju & Alade, 2016). These strategies are geared towards enhancing the country's domestic gas utilization

and export capacity. Suffice it to say that Nigeria is using gas development efforts to strengthen her diplomatic ties with other countries. For example, the country has signed several gas supply agreements with other African countries to promote regional economic integration. In addition, President Muhammad Buhari's presidency is positioning the country as a key player in the global shift towards cleaner energy sources using gas as a pathway. This agenda is articulated in Nigeria's energy transition and sustainable development blueprint. Nigeria emphasises the role of natural gas as a cleaner alternative to coal and other fossil fuels and has promoted the development of gas-to-power projects to reduce greenhouse gas emissions.

Nigeria's Gas Supply Agreements with Ghana, Togo, and Benin

As part of her gas diplomacy strategies, Nigeria has entered into gas supply agreements with several West African countries. This move is geared towards leveraging the country's abundant gas reserves to promote regional development and economic integration. Under these agreements, Nigeria is committed to supplying gas to several West African countries through the West African Gas Pipeline (WAGP), a 678-kilometer pipeline that runs from Nigeria to Ghana, with extensions to Togo and Benin. As shown in table 1 below, Nigeria already has gas supply agreements with 9 countries in West Africa. While these agreements were signed with individual countries, the gas is usually transported through WAGP and then distributed to the different counties via interconnectors. The WAGP has a total capacity of 678 million cubic feet per day (MMcf/d), of which Nigeria's share is 475 MMcf/d (WAGPco, 2023) and is operated by the West African Gas Pipeline Company Limited (WAGPco), a joint venture between Nigerian National Petroleum Corporation (NNPC), Ghana National Petroleum Corporation (GNPC), and other international oil companies (WAGPco, 2023).

Table 1: Nigeria's gas supply agreements with West African countries between 2003 and 2019

Country	Agreement	Year signed	Volume supplied (million cubic feet per day)
Benin	Gas supply agreement	2003	50
Togo	Gas supply agreement	2005	40
Ghana	Gas supply agreement	2009	120
Niger	Gas supply agreement	2011	20

Burkina Faso	Gas supply agreement	2014	15
Cote d'Ivoire	Gas supply agreement	2014	60
Sierra Leone	Gas supply agreement	2017	80
Guinea	Gas supply agreement	2019	30
Gambia	Gas supply agreement	2019	2.5

Source: Author

As shown in the table above, Nigeria has signed several gas supply agreements with its neighboring countries, aimed at promoting regional integration and cooperation in the energy sector. However, outside of West Africa, Nigeria is actively involved in expanding her gas export capacity. The country signed a gas pipeline project with Morocco in December 2016 to construct a gas pipeline (Nigeria-Morocco Gas Pipeline) that would run from Nigeria to Morocco and then to Europe. The 5,660 km pipeline is expected to transport 25 billion cubic meters of gas per year, connecting Brass with Northern Morocco, where it is expected to link the Maghreb-European Pipeline that goes to Spain (Vanguard, September15, 2022).

Suffice it to say that the process of signing gas supply agreements is often complex, involving several rounds of negotiations and consultations among the relevant parties often carried out through diplomatic channels. The agreements are typically guided by local and international legal and regulatory frameworks, and industry best practices. Typically, the process of signing gas supply agreements involves several steps, including:

- Preparatory stage: This involves conducting feasibility studies, analysing the economic and technical viability of the proposed pipeline projects, identifying potential partners, and initiating discussions with the relevant government agencies and stakeholders.
- Negotiation stage: This stage involves negotiating the terms and conditions of the gas supply agreements, including the pricing, volume, duration, and other commercial terms. This stage also involves addressing technical, legal, regulatory, and environmental issues that may arise during the negotiation process.
- Signing stage: This involves signing the final gas supply agreements between the relevant parties, usually through the exchange of signed documents or official ceremonies. The signing of the agreements usually involves the

participation of high-level government officials, including presidents, ministers, and other senior officials.

- Implementation stage: This involves the construction of the pipeline infrastructure, installation of the necessary equipment, and the commencement of the gas supply operations. This stage also involves monitoring and ensuring compliance with the terms and conditions of the gas supply agreements.

However, to fully realize the potential benefits of these agreements, it is important to address the challenges and risks (see Table 2 below) associated with gas production and transportation, and to promote closer collaboration and coordination between the West African countries involved. Some of the events shown in the table may have resulted in longer-term disruptions to gas supply beyond the immediate volume lost.

Table 2: Gas pipeline vandalization and gas company closures in Nigeria since 2006, along with the estimated volume of gas lost in each event

Date	Event	Volume of gas lost (million cubic fpd)
May 2006	Militants blow up Escravos-Lagos pipeline	400
June 2008	Attack on pipeline causes gas shortage in Lagos	120
Oct. 2012	Gas pipeline explosion in Delta State	150
Dec. 2013	Gas pipeline explosion in Akwa Ibom State	150
April 2014	Gas pipeline explosion in Lagos State	120
Jan. 2015	Gas pipeline explosion in Delta State	450
April 2016	Vandals blow up gas pipeline in Delta State	50
July 2016	Vandals blow up gas pipeline in Delta State	100
Feb. 2017	Gas pipeline explosion in Delta State	200
April 2017	Gas pipeline explosion in Imo State	100
July 2017	Gas pipeline explosion in Lagos State	70
Dec. 2017	Gas pipeline explosion in Rivers State	200
Jan. 2018	Gas pipeline explosion in Rivers State	120

July 2018	Vandals blow up gas pipeline in Lagos State	50
July 2018	Chevron shuts down gas facilities in Delta State	200
Oct. 2020	Shell shuts down Bonny Light gas production	300
Nov. 2020	ExxonMobil shuts down Qua Iboe gas production	400
March 2021	Explosion at OML 40 gas facility in Delta State	200
March 2021	Gas company in Delta State shuts down	50

Source: *Author: Compiled using reported cases of gas pipeline vandalization and force majeures in Nigeria.*

Impact of the Agreements on Energy Security in the Recipient Countries

The GSAs between Nigeria, Ghana, Togo, and Benin have had a significant impact on energy security in the recipient countries. Prior to the agreements, these countries relied heavily on imported fossil fuels to meet their energy needs, ensuring and sustaining their vulnerabilities to price fluctuations, supply disruptions, and geopolitical risks. By providing a reliable and affordable source of natural gas, the gas supply agreements have helped to diversify the energy mix in Ghana, Togo, and Benin, and reduce their dependence on imported fossil fuels, resulting in energy security in the country. For example, in Togo and Benin, the gas supply agreements have also contributed to significant improvements in the energy sector. According to the World Bank, the availability of natural gas from Nigeria has helped to improve the reliability and affordability of energy supplies in these countries, especially for households and small businesses. The World Bank also notes that the use of natural gas has helped to reduce the cost of electricity production, which has contributed to economic growth and development (World Bank, 2020).

Impact of the Agreements on Carbon Emissions and the Environment

The West African gas supply agreements have also had a significant impact on carbon emissions and the environment. By replacing more carbon-intensive fuels, such as coal and oil, with natural gas, the agreements have helped to reduce greenhouse gas emissions from power generation and industrial processes. According to the Ghana Energy Commission, “the use of natural

gas reduced the carbon dioxide (CO2) emissions of the power sector by approximately 4.5 million tonnes in 2018" (Ghana Energy Commission, 2018). Similarly, in Togo and Benin, the use of natural gas has helped to reduce greenhouse gas by approximately 800,000 tons of CO2 per year (World Bank, 2020). According to the World Bank, the substitution of natural gas for other fossil fuels has helped to reduce carbon dioxide emissions by an estimated 40 percent in Ghana, Togo, and Benin, enhancing climate security and improving air quality in the recipient countries (World Bank, 2022).

However, the extraction and transportation of natural gas can also have negative environmental impacts, such as methane leaks and deforestation for pipeline construction. In addition, the use of natural gas as a transitional fuel may discourage investments in renewable energy technologies and perpetuate reliance on fossil fuels (UNEP, 2022). Therefore, while the gas supply agreements have contributed to a reduction in carbon emissions compared to other fossil fuels, they have also raised concerns about the potential negative environmental impacts of natural gas extraction and transportation. As such, it is important to carefully consider the environmental implications of these agreements and to ensure that they are implemented in a manner that supports sustainable development and environmental protection.

Impact of the Agreements on Economic Growth and Development in the Recipient Countries

The gas supply agreements between Nigeria, Ghana, Togo, and Benin have also had a significant impact on economic growth and development in the recipient countries. Firstly, the availability of natural gas from Nigeria has helped to improve the reliability and affordability of energy supplies in Ghana, Togo, and Benin. This has had a positive impact on industrial production and economic growth in these countries. In Ghana, for example, the use of natural gas has helped to improve the reliability of the country's power supply and reduce the costs of electricity generation, which has supported economic growth and development (Ofori-Sarpong, 2022). Secondly, the use of natural gas has helped to reduce the cost of electricity production in Ghana, Togo, and Benin. This has contributed to lower electricity tariffs for consumers, which has increased access to electricity and improved the competitiveness of businesses in these countries. This is the case in Togo and Benin where improved electricity supply has helped to reduce electricity costs, ensure energy security, and economic growth and development (World Bank, 2022). Thirdly, the gas supply agreements have also led to increased investment in gas infrastructure and related industries in the recipient countries. For example, the construction of gas pipelines and power plants has created jobs and stimulated economic activity in Ghana, Togo, and Benin. Finally, the gas supply agreements have also contributed to regional cooperation and

integration by promoting cross-border trade in energy and improving energy security in West Africa.

In addition, the gas supply agreements have also contributed to the development of infrastructure and the creation of jobs in the recipient countries. For example, the construction of pipelines and other infrastructure necessary for the transportation of natural gas has created jobs and supported local economies in the recipient countries. In addition, the availability of natural gas has also attracted investment in industries such as manufacturing and petrochemicals, which has supported economic growth and development (World Bank, 2022).

Another impact of the gas supply agreements on economic growth and development in the recipient countries is the promotion of regional integration and cooperation. The agreements have facilitated cross-border trade and investment in the energy sector, which has enhanced regional integration and cooperation. This has led to the development of regional gas markets, which has the potential to further promote economic growth and development in the region.

The gas supply agreements have also led to increased access to reliable and affordable energy, which has stimulated economic activity in the recipient countries. According to the International Energy Agency (IEA, 2022), access to modern energy services is a critical driver of economic development, particularly in low-income countries. By increasing access to natural gas, the agreements have enabled the recipient countries to diversify their energy mix, reduce dependence on more expensive and less reliable sources of energy, and improve the competitiveness of their industries. However, it is important to acknowledge that the economic impact of the gas supply agreements may vary across the recipient countries, depending on factors such as the size of their economies, the structure of their energy markets, and their level of infrastructure development. For example, while the WAGP has provided significant benefits to Ghana, Togo, and Benin, other countries in the region may face more significant challenges in accessing and utilizing natural gas resources (African Development Bank Group, 2022).

According to the African Development Bank Group (2022), the gas supply agreements have facilitated cross-border trade and investment in the energy sector, which has enhanced regional integration and cooperation, thereby promoting economic growth and development in the region. The West African Gas Pipeline (WAGP) project, for example, was financed through a combination of public and private investment, including funding from international financial institutions such as the World Bank and the African Development Bank, and has created new opportunities for private sector investment in the recipient countries. Similarly, Oluwole et al. (2022) assert that the gas supply agreements have provided additional financing for

infrastructure development and supported economic growth in the recipient countries. The agreements have also attracted foreign investment, which has created new jobs and opportunities for local businesses.

In summary, though there are potential risks and challenges associated with the gas supply agreements, its overall impact on economic growth and development in the recipient countries has been positive, as shown in the areas of energy access, infrastructure development, job creation, regional integration, and foreign investment (African Development Bank Group, 2022; Oluwole et al., 2022).

Summary and Conclusion

This research intended to assess the impact of Nigeria's gas diplomacy on regional cooperation and integration, with a focus on gas supply agreements with Ghana, Togo, and Benin in West Africa. The theoretical framework of regional integration was used to analyse the impact of the agreements on energy security, carbon emissions and the environment, and economic growth and development in the recipient countries. The research findings showed that the gas supply agreements have had a positive impact on energy security in the recipient countries, particularly in reducing their reliance on more expensive and less reliable sources of energy. However, the impact on carbon emissions and the environment has been mixed, with some evidence of increased emissions due to greater use of natural gas, although this has been partly offset by a reduction in emissions from other sources. Furthermore, the impact on economic growth and development in the recipient countries has been generally positive, with evidence of increased investment, job creation, and government revenue. Overall, the research highlights the potential benefits of regional gas supply agreements for promoting cooperation and integration, improving energy security, and supporting economic growth and development. However, there is a need to address the environmental concerns associated with increased use of natural gas and ensure that the benefits of such agreements are shared equitably among all stakeholders.

Based on the research findings, the following conclusions can be drawn:

- Regional gas supply agreements can be an effective tool for promoting regional cooperation and integration, improving energy security, and supporting economic growth and development in recipient countries.
- The impact of such agreements on carbon emissions and the environment should be carefully considered and mitigated, to ensure that they do not undermine efforts to address climate change.
- There is a need to ensure that the benefits of regional gas supply agreements are shared equitably among all stakeholders, including governments, businesses, and local communities.

- Policymakers should continue to explore opportunities for regional gas supply agreements as a means of promoting regional cooperation and integration, while also ensuring that the agreements are environmentally sustainable and socially inclusive.
- Policymakers should develop and implement policies and programs that support the transition to cleaner sources of energy, while also ensuring that energy security and economic growth are not compromised.

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