

# Strengthening Korea's Economic and Development Cooperation with Africa: Focusing on Key Agendas of the 2024 Korea-Africa Summit

Jin-sang Lee and Young Ho Park



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## Executive Summary

This report examines strategies for strengthening Korea's economic and development cooperation with Africa, focusing on key agendas from the 2024 Korea-Africa Summit. The analysis covers critical areas, including agriculture, environmental issues, urban transportation, technical and vocational education and training (TVET), healthcare, digital cooperation, and the sharing of Korea's development experience. Additionally, the report provides recommendations for securing reliable critical minerals and leveraging international development financial institutions to support cooperation efforts.

Africa faces significant agricultural challenges, including low productivity, limited use of modern inputs, poor infrastructure, and vulnerability to climate change. Customized smart farm solutions adapted to African contexts are necessary to support the establishment of agricultural processing facilities and cold chain systems. Korea can build partnerships to develop agricultural policies and regulatory frameworks, promote public-private partnerships in the agriculture sector, and support the development of agricultural research and extension services. This will improve irrigation and water management systems and promote the adoption of climate-resilient crop varieties and farming practices.

The Korea-Africa Partnership can address critical environmental challenges in Africa, including the impacts of climate change, desertification, deforestation, and loss of biodiversity. Various projects can be developed, such as reforestation, sustainable land management, and biodiversity conservation. Supporting early warning systems for climate-related disasters will benefit

recipient countries. Training on environmental impact assessments and green growth strategies, promoting sustainable urban planning, and developing green infrastructure will also be beneficial. Korea can assist in implementing integrated water resource management approaches to promote circular economy initiatives and waste management solutions.

Rapid urbanization in Africa is creating significant challenges related to traffic congestion, road safety, and air pollution. Korea can develop pilot projects for intelligent transportation systems (ITS) in major African cities to support the development of bus rapid transit (BRT) systems, provide technical assistance for transportation master planning, and promote electric mobility solutions adapted to African contexts. Additionally, Korea can help develop non-motorized transport infrastructure (e.g., bicycle lanes, pedestrian walkways) and support capacity building for urban transport authorities to promote transit-oriented development approaches.

TVET is a top priority area for Africa's skills development. TVET projects focused on key industries (e.g., manufacturing, ICT, agriculture) should support the development of national qualification frameworks and promote industry-academia partnerships for TVET. Korea's ODA projects can include quality assurance systems for TVET to support the modernization of TVET infrastructure and equipment and promote entrepreneurship education within TVET programs, including e-learning and blended learning approaches.

Africa's healthcare challenges include a high burden of infectious diseases, rising non-communicable diseases, and weak health systems. Projects should aim to strengthen primary healthcare systems, support the development of

telemedicine and e-health solutions, and establish centers of excellence for specific diseases. Promoting pharmaceutical and medical device manufacturing capabilities through capacity building for health policy and management, along with community health worker programs and health education initiatives, is essential.

Digital transformation is urgently needed in African countries. Korea has developed a well-designed e-government system that is envied by many. African countries need to improve customs, procurement, statistics, and more. Partnership projects can develop innovation hubs and tech parks to provide technical assistance for ICT policymaking and regulation, promote digital financial inclusion initiatives, and support the development of digital content in local languages. Digital literacy programs targeting underserved populations will be necessary to promote the adoption of emerging technologies (e.g., AI, IoT, blockchain) in key sectors.

Korea's development experience can serve as a benchmarking model for African countries. Korea's Knowledge Sharing Program (KSP) includes economic planning, industrial policy, export promotion strategies, human resource development, public sector reform, governance improvements, science, technology, and innovation policies, among others. Korea-Africa partnership projects that adapt Korean development models will provide policy advisory services tailored to specific African countries. This will support the development of think tanks and policy research institutes and organize study visits and exchange programs for African policymakers and experts to explore the adaptation of Korean development approaches.

There is a growing concern regarding the security of critical minerals for the clean energy transition, highlighting Africa's significant mineral resources. Korea can strengthen partnerships with African countries rich in critical minerals to support sustainable and responsible mining practices and assist in developing mineral processing and value-addition capabilities. This can include technology transfer in the mining and mineral sectors, developing transparent and effective mineral governance frameworks, investing in geological surveys and resource mapping, and promoting local content development in the mining supply chain.

Development finance institutions (DFIs) will be crucial for the Korea-Africa partnership to support economic cooperation. Improving co-financing arrangements with multilateral and bilateral DFIs can strengthen cooperation with the African Development Bank. This will utilize innovative financing mechanisms like blended finance and enhance Korea's capacity to structure and implement complex development projects. Strategic partnerships with European DFIs with extensive African experience can strengthen Korea's development finance institutions to better support African projects. Additionally, it can promote private sector participation through public-private partnerships and risk mitigation instruments.

The 2024 Korea-Africa Summit provides a strong foundation for deepening this cooperation. Moving forward, it will be crucial to translate the summit's commitments into concrete actions and sustainable long-term partnerships. This will require continued high-level engagement, regular policy dialogues, and the establishment of effective implementation mechanisms.



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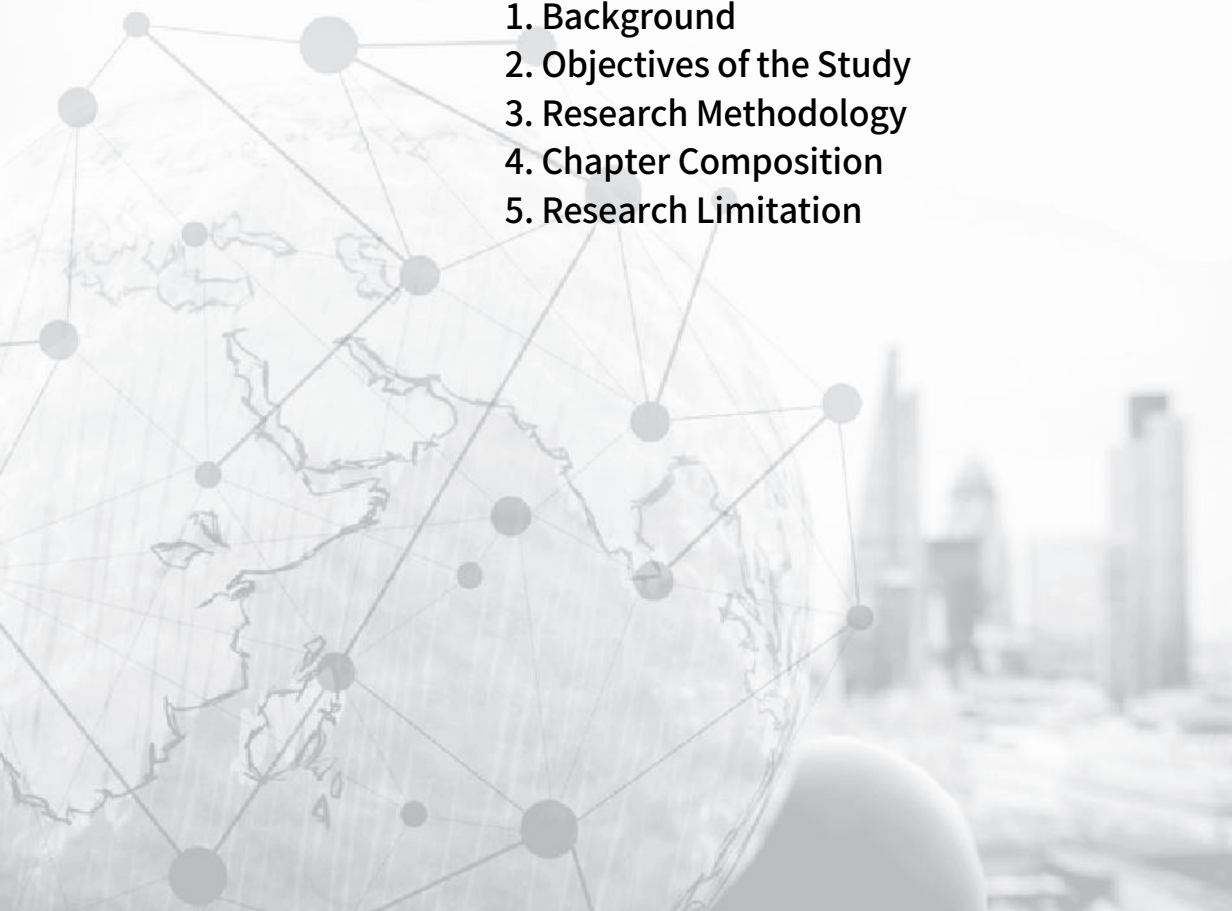
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## Chapter 1



# Introduction

1. Background
2. Objectives of the Study
3. Research Methodology
4. Chapter Composition
5. Research Limitation





# 1. Background

Africa, often referred to as the last frontier market of the 21st century, is garnering increasing global attention due to its vast natural resources, burgeoning population of 1.4 billion, and untapped economic potential. Many nations are vying for a foothold in African markets, recognizing the long-term opportunities in its development trajectory.

Korea's presence in Africa, however, remains relatively limited despite being a global economic powerhouse ranking 14th in GDP worldwide.<sup>1)</sup> This disconnect can be attributed to various factors, including geographical distance, lack of historical ties, information asymmetry, and perceived high risks associated with African markets.

The year 2024 marks a pivotal moment in Korea-Africa relations with the convening of the Korea-Africa Summit. This high-level meeting, unprecedented in its scale and scope with the participation of 25 African heads of state, provides a unique opportunity to recalibrate and intensify Korea's engagement with the African continent. The summit's agenda, focusing on shared growth, sustainability, and solidarity, aligns closely with both Africa's development needs and Korea's strengths and aspirations in international cooperation. Korea's engagement with Africa has evolved significantly over the past few decades, transforming from a focus on unilateral aid to a more nuanced and multifaceted partnership. This evolution is reflected in the history of Korea-Africa High-Level Forums, which have served as a cornerstone for diplomatic, economic, and developmental cooperation since the first Korea-Africa Summit in Seoul in 2006.

The need for this research stems from the growing importance of Africa as a strategic partner for Korea. Africa presents significant opportunities for economic cooperation, trade, and investment. Moreover, the continent's development challenges and aspirations align well with Korea's development

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1) Business Korea (2024, Accessed on 20 July 2024).

cooperation strategies, particularly in areas such as industrialization, human resource development, and technological innovation. The relationship between Korea and Africa is shaped by historical developments, global economic shifts, and emerging geopolitical dynamics. Unlike European nations with colonial legacies or the United States with its Cold War-era interventions, Korea's presence in Africa has been relatively recent and primarily economically driven.

Korea's own economic journey – from a war-torn, impoverished nation in the 1950s to a high-income, technologically advanced economy today – resonates deeply with many African countries' aspirations. This shared experience of rapid development, often referred to as the “Miracle on the Han River,” positions Korea uniquely among Africa's partners. The rapid pace of technological advancement presents both opportunities and challenges for Africa's development. Korea, as a global leader in technology and innovation, is well-positioned to support Africa's digital transformation across various sectors. For Korea, deepening ties with Africa is not just an economic imperative but also a means to enhance its global influence and contribute to international peace and security. As Korea faces domestic economic challenges, including an aging population and slowing growth rates, Africa's young, growing population and untapped markets present potential avenues for continued economic dynamism.

Africa itself has undergone substantial changes in recent decades, experiencing sustained economic growth, improvements in governance, and increased regional integration efforts. The establishment of the African Continental Free Trade Area (AfCFTA) in 2018 marked a significant step towards creating a single market for goods and services across the continent.<sup>2)</sup> However, challenges persist, including infrastructure deficits, climate change vulnerabilities, and uneven development across regions. The international community's focus on addressing global challenges, as encapsulated in the

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2) AfCFTA officially commenced in January 2021.

UN Sustainable Development Goals (SDGs), provides a framework for Korea-Africa cooperation. Issues such as climate change, food security, and global health crises require collaborative, cross-border solutions. The nature of development assistance has evolved significantly, with growing emphasis on partnerships that go beyond traditional aid, incorporating trade, investment, and knowledge exchange. Korea's transition from aid recipient to donor offers valuable lessons in this evolving landscape.

This study aims to articulate a comprehensive strategy for Korea's engagement with Africa, with a particular focus on the key agendas discussed at the 2024 Korea-Africa Summit. By analyzing the summit's outcomes and contextualizing them within broader trends in Africa's development and international partnerships, we seek to identify specific areas where Korea can make meaningful contributions while also advancing its own economic and strategic interests.

Through this analysis, we aim to provide policymakers, businesses, and scholars with actionable insights and recommendations. The goal is to foster a more robust, mutually beneficial, and sustainable partnership between Korea and Africa, one that contributes to shared prosperity and addresses global challenges in the decades to come.

## **2. Objectives of the Study**

This comprehensive research endeavor is embarked upon with the primary objective of crafting a nuanced and actionable framework to enhance and fortify the multifaceted relations between Korea and Africa. The study places particular emphasis on meticulously examining and interpreting the outcomes and far-reaching implications of the landmark 2024 Korea-Africa Summit. This ambitious undertaking is characterized by its multifaceted and interdisciplinary approach, reflecting the intricate tapestry of international relations and development cooperation in the complex

landscape of the 21st century.

The first cardinal objective of this exhaustive study is to conduct an in-depth analysis of the 2024 Korea-Africa Summit. This entails a meticulous examination of the summit's proceedings, delving into the minutiae of discussions, negotiations, and agreements reached during this pivotal gathering. Furthermore, the study aims to scrutinize the immediate and long-term outcomes of the summit, dissecting the joint declarations issued as a result of this high-level meeting. In addition to this focused analysis, the research seeks to draw comprehensive comparisons and contrasts between this summit and previous Korea-Africa forums. This comparative approach is designed to identify evolving priorities, changing approaches, and shifts in the nature of the Korea-Africa relationship over time, providing valuable insights into the trajectory of this important partnership.

Another crucial objective of this research is to align Korea's vast capabilities with Africa's pressing development needs. This involves conducting a comprehensive needs assessment of key African development priorities, with a specific focus on areas that were highlighted and emphasized during the 2024 summit. Concurrent with this assessment, the study aims to meticulously map out Korea's technological, industrial, and developmental expertise in relation to these identified needs. By juxtaposing Africa's requirements with Korea's capabilities, the research seeks to propose innovative and synergistic cooperation strategies that effectively leverage Korea's experiences and capabilities to address Africa's multifaceted developmental challenges.

The study also aims to develop detailed, sector-specific strategies for enhancing Korea-Africa cooperation. This involves formulating comprehensive and actionable strategies for key sectors that were identified as priority areas during the summit. These sectors include, but are not limited to, agriculture and food security, environmental sustainability, urban development, healthcare systems, and technical and vocational education and training (TVET). Each of these sector-specific strategies will be developed with careful consideration

for both Korea's strengths and Africa's unique contexts and needs, ensuring a tailored and effective approach to cooperation.

Addressing the critical issue of mineral resources and resource security forms another important objective of this research. The study aims to analyze the strategic importance of Africa's vast mineral resources within the context of the ongoing global energy transition. This involves evaluating current supply chains for critical minerals and projecting potential future scenarios. Based on this thorough analysis, the research seeks to propose comprehensive strategies for Korea to secure reliable and sustainable access to these crucial resources, while ensuring mutual benefits for African countries and promoting responsible resource management.

Enhancing financial cooperation mechanisms between Korea and Africa is yet another key objective of this study. This involves a thorough examination of the current constraints and challenges in financing Korea-Africa projects. The research aims to explore innovative financing models, with a particular focus on leveraging international development financial institutions (DFIs). Furthermore, the study seeks to develop concrete recommendations for expanding and optimizing co-financing arrangements between Korean institutions and global partners, with the goal of increasing the scale and effectiveness of Korea-Africa economic cooperation.

Lastly, this research endeavor aims to make a significant contribution to academic and policy discourse surrounding Korea-Africa relations and South-South cooperation more broadly. By providing a comprehensive analysis of the current state and future potential of Korea-Africa relations, the study seeks to inform future policy decisions and academic research in this field. Additionally, the research aims to identify areas for further investigation and study, thereby laying the groundwork for continued scholarly and policy-oriented exploration of Korea-Africa relations.

By addressing these multifaceted objectives, the study aspires to provide a holistic, forward-looking, and practically oriented framework for enhancing Korea-Africa relations. The insights and recommendations derived from

this exhaustive research are intended to serve as a valuable resource for policymakers, business leaders, academics, and civil society actors engaged in fostering stronger, mutually beneficial ties between Korea and the African continent. Ultimately, the study seeks to make a meaningful contribution to the shared goal of sustainable development and prosperity for both Korean and African societies in an increasingly interconnected global landscape, paving the way for a more equitable and prosperous future for all.

### **3. Research Methodology**

This study employs a comprehensive and multi-faceted research methodology, meticulously designed to provide a thorough and nuanced understanding of the complex dynamics that characterize Korea-Africa relations. The research approach places particular emphasis on the outcomes and far-reaching implications of the landmark 2024 Korea-Africa Summit, recognizing its pivotal role in shaping future cooperation between these two regions. This methodology is characterized by its innovative combination of qualitative and quantitative approaches, ensuring a robust and multidimensional analysis that can effectively inform policy decisions and strategic planning at the highest levels.

At the foundation of this research methodology lies an extensive and exhaustive literature review. This comprehensive examination of existing literature serves to establish a solid contextual foundation for the study, providing a rich tapestry of background information and theoretical frameworks. The literature review encompasses a wide array of sources, including scholarly academic journals and books focusing on international relations, development economics, and African studies. These academic sources are complemented by a thorough examination of policy papers and reports emanating from Korean government agencies, think tanks, and

research institutions, offering insights into the official perspectives and strategies guiding Korea's engagement with Africa.

Furthermore, the literature review extends to publications from prestigious international organizations such as the World Bank, African Development Bank, various United Nations agencies, and the Organization for Economic Co-operation and Development (OECD). These sources provide a global context for Korea-Africa relations and offer comparative perspectives on development cooperation. Historical documents tracing the evolution of Korea-Africa relations are also carefully studied, providing a temporal dimension to the analysis and allowing for the identification of long-term trends and shifts in the relationship. Additionally, contemporary media reports and analyses on Africa-related issues are scrutinized to capture current trends, public discourse, and emerging challenges and opportunities in the Korea-Africa partnership.

Complementing the qualitative depth of the literature review, the study employs rigorous quantitative data analysis to provide empirical grounding for its arguments and recommendations. This involves a meticulous statistical analysis of relevant datasets, covering a wide range of indicators that collectively paint a comprehensive picture of the economic, social, and environmental landscapes in both Korea and African countries. The analysis examines economic indicators such as GDP growth rates, providing insights into the economic trajectories and potential areas for economic cooperation between Korea and African nations.

Development indices, including the Human Development Index, Ease of Doing Business rankings, and Corruption Perception Index, are carefully analyzed to understand the broader development contexts and challenges faced by African countries, as well as to identify areas where Korea's expertise and experience might be most effectively applied. Social indicators, such as education enrollment rates, healthcare access metrics, and poverty rates, are examined to gauge the social development needs of African countries and to assess the potential impact of Korea-Africa cooperation in

these crucial areas.

Environmental data, including climate vulnerability indices and renewable energy adoption rates, are also analyzed, recognizing the growing importance of environmental sustainability in development cooperation and the potential for Korea to contribute its technological expertise in areas such as green energy and climate change mitigation. These quantitative analyses draw from a diverse range of data sources, including international organizations and specialized databases, ensuring the use of reliable, up-to-date, and comprehensive information.

To provide concrete examples and extract valuable lessons from real-world experiences, the study incorporates in-depth qualitative case study analyses. These case studies focus on a range of subjects, including successful Korean business ventures in Africa, which offer insights into effective strategies for market entry and business operations in the diverse African context. The challenges faced by Korean companies in African markets are also examined, providing a balanced perspective and highlighting areas where policy interventions or support mechanisms might be necessary.

Additionally, the case studies explore impactful development projects in key sectors such as agriculture, healthcare, and infrastructure, offering tangible examples of successful cooperation and identifying best practices that could be replicated or scaled up. Each case study involves a thorough document analysis and interviews with key stakeholders, providing rich, contextual information that complements and enriches the quantitative data analysis.

A comprehensive SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis forms another crucial component of the research methodology. This strategic assessment of Korea's position in engaging with Africa involves a multifaceted examination of various factors. The analysis identifies Korea's unique strengths and competencies in relation to Africa, such as its own development experience, technological expertise, and successful economic transformation. Weaknesses in current engagement



strategies are critically analyzed, providing insights into areas that require improvement or recalibration.

The SWOT analysis also maps out opportunities in African markets and development needs, identifying potential areas for mutually beneficial cooperation and investment. Potential threats and challenges to successful engagement are assessed, allowing for the development of mitigation strategies and risk management approaches. This SWOT analysis draws on insights from the literature review, quantitative data analysis, and expert consultations, providing a comprehensive strategic framework for understanding Korea's position and potential in Africa.

Policy document analysis forms another key component of the research methodology. This involves a detailed examination of policy documents related to the 2024 Korea-Africa Summit and broader Korea-Africa relations. Summit declarations and communiqués are meticulously analyzed to understand the official outcomes and commitments made during this landmark event. Korean government strategy papers on Africa are scrutinized to gain insights into Korea's long-term vision and strategic approach to engaging with the continent.

African Union and regional economic community policy documents are examined to understand African perspectives and priorities in international cooperation. Bilateral agreements between Korea and African nations are also analyzed to identify specific areas of cooperation and to understand the legal and policy frameworks guiding these partnerships. Content analysis techniques are employed to identify key themes, priorities, and evolving approaches in official policy, providing insights into the formal frameworks and intentions guiding Korea-Africa relations.

Finally, to ensure the highest standards of academic rigor and practical relevance, the research methodology includes a peer review and validation process. Draft findings and recommendations are subjected to thorough peer review by experts in relevant fields, including international relations, development economics, and African studies. This peer review process

helps to ensure the accuracy, relevance, and academic rigor of the study's findings and recommendations.

This multi-method approach allows for the triangulation of data and insights, enhancing the validity and reliability of the study's findings. By combining quantitative rigor with qualitative depth, the methodology aims to provide a comprehensive and nuanced understanding of the complexities involved in Korea-Africa relations. The resulting analysis and recommendations are grounded in expert knowledge and strategic foresight, offering a solid foundation for policy formulation and strategic decision-making in the realm of Korea-Africa cooperation.

## **4. Chapter Composition**

This research aims to explore Korea's development and economic cooperation with Africa, focusing on the main agenda of the 2024 Korea-Africa Summit, as outlined earlier. To achieve this objective, the chapters have been structured as follows, and the research methodology has been employed accordingly.

In Chapter I, the study will explore the background and significance of strengthening economic and development cooperation between Korea and Africa. We will examine Africa's strategic value, changes in Korea's Africa policy, and the significance of the 2024 Korea-Africa Summit. The chapter will also clearly define the study's objectives and scope, and provide a detailed explanation of the research methodologies used. For research methodology, the study will conduct an extensive literature review. This will include academic journals, policy reports, and publications from international organizations, which will help in understanding the historical context and current trends in Korea-Africa relations. Additionally, the study conducts expert interviews to gain insights from the field and analyze policy documents to understand the official cooperation framework.

Chapter II will provide a detailed analysis of the background, agenda, and outcomes of the 2024 Korea-Africa Summit. The study will highlight the characteristics and importance of this summit by comparing it with past Korea-Africa high-level forums. The study will also closely examine the joint declaration adopted at the summit to identify future directions for cooperation.

Chapter III will analyze Korea's ODA strategies for Africa, focusing on the key agendas discussed at the 2024 summit. The study will assess the current status of core areas such as agricultural development, environmental issues, urban transportation, vocational education and training, healthcare, and digital cooperation, and propose cooperation strategies that leverage Korea's strengths. Particular emphasis will be placed on ways to share Korea's development experience.

Chapter IV will develop government support strategies for Korean companies entering the African market. The study will conduct a comprehensive analysis of the opportunities and threats in the African market, as well as Korea's strengths and weaknesses, to formulate effective support strategies. In particular, the study will emphasize the need for customized strategies by country and region, considering Africa's diversity. The main research method will be SWOT analysis.

Chapter V will address the status of critical mineral resources in Africa and Korea's strategy for securing a stable supply. The study will analyze the importance of strategic minerals in the energy transition, the status of global supply chains, Africa's potential, and explore the government's role in supporting private sector mineral development.

In Chapter VI, the study will explore ways to strengthen cooperation with Africa by leveraging international development financial institutions. The study will analyze financial constraints in supporting Africa and examine the role and importance of Development Financial Institutions (DFIs). This study will analyze successful cases of DFI support and propose cooperation plans between Korea's policy finance institutions and DFIs.

Finally, the conclusion chapter will synthesize the preceding analyses to present comprehensive strategies and policy recommendations for strengthening Korea-Africa economic and development cooperation. In particular, this study will propose specific implementation plans and monitoring systems to develop the outcomes of the 2024 summit into substantial cooperation.

## 5. Research Limitation

The research limitations of this comprehensive report on Korea-Africa relations can be elucidated in a more expansive and detailed manner as follows:

First, regarding data limitations, the study encountered significant challenges in obtaining reliable and up-to-date data from numerous African nations. This limitation was particularly pronounced in the realms of economic indicators, social development metrics, and industry-specific statistics. The paucity of current data necessitated the use of somewhat outdated information in certain analyses, and in some instances, researchers were compelled to rely on estimations. This reliance on potentially obsolete or approximated data may have inadvertently introduced inaccuracies or biases into the study's findings and conclusions.

Secondly, the research confronted issues related to the generalization of regional diversity. Africa, as a vast continent comprising 54 sovereign nations, presents an extraordinary tapestry of cultural, economic, and political diversity. However, the constraints of this study often necessitated treating 'Africa' as a homogeneous unit for analytical purposes. This approach, while pragmatic, inevitably resulted in a degree of oversimplification that may not adequately reflect the unique characteristics, challenges, and opportunities present in individual countries or regions. The nuanced differences between North African nations and those in Sub-Saharan Africa, or the distinct

economic structures of coastal versus landlocked countries, may not have been fully captured in the analysis.

Thirdly, the study faced significant time limitations in analyzing the outcomes of the 2024 Korea-Africa Summit and formulating consequent strategies. The restricted time frame made it challenging to conduct a comprehensive assessment of the long-term implications of the summit's resolutions and agreements. As a result, the long-term efficacy of some proposed strategies remains speculative and will require validation through future research and longitudinal studies. This temporal constraint may have led to a focus on more immediate and short-term outcomes at the expense of longer-term strategic considerations.

Fourth, there was an absence of primary field research. One of the most significant limitations of this study was the inability to conduct direct, primary field research in Africa due to budgetary and time constraints. This absence of on-the-ground investigation has potentially profound implications for the depth and accuracy of the research findings. Africa, with its 54 countries, presents a complex mosaic of histories, cultures, and economic landscapes. The lack of field research may have perpetuated certain misconceptions or over generalizations about the continent, which often stem from inaccurate or exaggerated information, or overly broad perspectives. Field research is crucial for accurately capturing the realities of Africa. It allows researchers to directly experience regional specificities, engage in meaningful dialogue with local stakeholders, and understand subtle socio-cultural contexts that may not be apparent in secondary data or statistical analyses. On-site observations can yield critical insights and information that might be overlooked in desk-based research. The reliance on secondary sources and existing studies, while valuable, may not fully capture the complex and diverse realities of Africa. This limitation potentially led to surface-level analyses or overly generalized conclusions in some areas of the study. For instance, the research may have missed nuanced challenges or innovative solutions that are only discoverable through direct observation and interaction.

The rapid changes occurring across Africa, particularly in areas such as digital technology adoption, youth entrepreneurship, and urbanization, may not be adequately reflected in secondary data sources. These constraints necessitate cautious interpretation and application of the research findings. While the analyses and recommendations presented in this study are based on available secondary data and expert opinions, they may not fully reflect the complexities and diversities of the actual situations on the ground. Future research would greatly benefit from allocating sufficient time and resources for extensive field studies. This would enable a more profound understanding of Africa's realities and facilitate the development of more accurate and effective strategies for Korea-Africa cooperation.

Fifth, the study encountered significant challenges in conducting objective analyses on certain topics, particularly those related to resource development and governance issues, due to their political sensitivity. This sensitivity manifested in various ways:

In the realm of resource development, many African countries consider mineral resources as core national assets and matters of strategic importance. Consequently, information related to resource development is often classified as state secrets, making it difficult for researchers to access accurate and detailed data. The international competition for African resources, involving countries like China, the United States, and European nations, further complicates the acquisition of sensitive information. Even data regarding Korean companies' involvement in resource development projects may be treated with heightened sensitivity within this competitive international context. Issues of corruption and illegal transactions in resource development processes are particularly sensitive topics. Stakeholders are often reluctant to speak candidly about these matters, creating substantial obstacles in accurately assessing and analyzing the actual situations. In terms of governance-related issues, the complex power structures and political systems in many African countries made in-depth analysis challenging, as such inquiries could potentially provoke negative reactions from local governments.

This risk may have resulted in analyses remaining at a superficial level or primarily reflecting official positions. Discussions about corruption and government transparency, key elements of governance, are extremely sensitive topics. Obtaining accurate information or conducting frank interviews with relevant parties on these subjects proved to be particularly challenging.

Sixth, the fast-paced nature of technological advancements, especially in fields such as digital cooperation and renewable energy, posed a significant challenge to the study. There is a risk that some analyses or proposals may quickly become outdated due to the rapid evolution of technology. Accurately predicting the direction and speed of technological progress is inherently difficult, complicating the formulation of medium to long-term strategies. This challenge is particularly pronounced when attempting to outline future directions for Korea-Africa technological cooperation.

Furthermore, the significant and rapidly changing disparities in technological access between countries, as well as between urban and rural areas within African nations, made it challenging to conduct generalized analyses. While this necessitates the development of detailed and differentiated strategies for Korea-Africa technological cooperation, accurately reflecting these nuances proved to be a formidable task.

Consequently, the study was limited in its ability to present long-term visions alongside flexible, short-term adjustable approaches in formulating Korea-Africa technological cooperation strategies. The research also fell short in proposing mechanisms for continuous monitoring of technological changes and regular updates of research findings, which could have mitigated some of these limitations.

Despite these limitations, this study has endeavored to provide a comprehensive analysis of Korea-Africa cooperation by employing diverse methodologies and utilizing a wide range of sources. It is hoped that future research will address these limitations, enabling even more in-depth and accurate analyses of this important relationship.

## Chapter 2



# Overview of the 2024 Korea-Africa Summit

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1. History of Korea-Africa High-Level Forums
  2. Government-Level Strategies for Economic Cooperation with Africa
  3. Comparative Analysis of Previous Korea-Africa High-Level Forums and the 2024 Korea-Africa Summit
  4. Analysis of the 2024 Korea-Africa Summit Joint Declaration



# 1. History of Korea-Africa High-Level Forums

As the need for cooperation between Korea and Africa has been increasing during the last 20 years. High-level cooperation forums between the two sides have been held regularly, starting with the 1st Korea-Africa Summit held in Seoul in 2006.<sup>3)</sup> The agenda has been diversifying and deepening. Initially limited to development cooperation between the two sides, it has gradually expanded to economy, security, culture, etc., and cooperation to respond to global issues (climate change, SDGs, etc.) has also been strengthened.

In terms of cooperation methods, it has evolved from unilateral aid to mutually beneficial partnerships, and economic cooperation through expanded private sector participation has also been emphasized. The Korea-Africa Forum has established itself as a key platform for deepening diplomatic, economic, and development cooperation relationships between the two sides, and has also contributed to strengthening global partnerships (Table 2.1).

**Table 2.1. History of Korea-Africa High-Level Forums**

No.	Time and Place	Key Agenda	Participating Countries (Africa)	Major Achievements and Characteristics
1st	November 2006, Seoul	<ul style="list-style-type: none"> <li>- Sharing development experiences</li> <li>- Human resource development</li> <li>- ICT cooperation</li> <li>- Agriculture and fisheries cooperation</li> </ul>	Total 25 countries (5 heads of state, 10 ministerial-level)	<ul style="list-style-type: none"> <li>- Adoption of 'Korea-Africa Development Cooperation Initiative'</li> <li>- Promise to triple ODA to Africa by 2009 compared to 2005</li> </ul>

3) Chang (edition, 2020).

**Table 2.1. Continued**

No.	Time and Place	Key Agenda	Participating Countries (Africa)	Major Achievements and Characteristics
2nd	November 2009, Seoul	<ul style="list-style-type: none"> <li>- Climate change response</li> <li>- Green growth</li> <li>- Food security</li> <li>- Energy resources cooperation</li> </ul>	Total 15 countries (1 head of state, 12 ministerial-level)	<ul style="list-style-type: none"> <li>- Announcement of 'Korea-Africa Development Cooperation Basic Plan'</li> <li>- Promise to double ODA to Africa by 2012 compared to 2008</li> <li>- Emphasis on joint response to global issues, seeking diversification of economic cooperation</li> </ul>
3rd	October 2012, Seoul	<ul style="list-style-type: none"> <li>- Strengthening economic cooperation</li> <li>- Development cooperation</li> <li>- Peace and security</li> <li>- Social and cultural exchange</li> </ul>	Total 18 countries (1 head of state, 11 ministerial-level)	<ul style="list-style-type: none"> <li>- Adoption of 'Seoul Declaration'</li> <li>- Promise to double ODA compared to 2009-2012</li> <li>- Development into comprehensive partnership.</li> <li>- Establishment of mid-to-long-term cooperation plan</li> </ul>
4th	December 2016, Addis Ababa (Ethiopia)	<ul style="list-style-type: none"> <li>- SDGs implementation</li> <li>- Support for Africa's industrialization</li> <li>- Youth job creation</li> <li>- Science and technology innovation cooperation</li> </ul>	Total 14 countries (4 ministerial-level)	<ul style="list-style-type: none"> <li>- Adoption of Addis Ababa Declaration</li> <li>- Announcement of Korea-Africa Cooperation Mid-term Strategy</li> </ul>
5th	March 2022, Seoul	Strengthening Korea-Africa cooperation in the post-COVID-19 era	Total 10 countries (3 ministerial-level)	- 2022 Seoul Declaration, Cooperation Framework (2022-2026)
6th	June 2024, Seoul	<ul style="list-style-type: none"> <li>- Shared Growth</li> <li>- Sustainability</li> <li>- Solidarity</li> </ul>	25 African heads of state and representatives of international organizations	<ul style="list-style-type: none"> <li>- Announcement of plan to expand ODA to \$10 billion by 2030</li> <li>- Announcement of plan to provide \$14 billion in export financing</li> </ul>

Source: "Korea-Africa Forum." Ministry of Foreign Affairs, [https://www.mofa.go.kr/www/wpge/m\\_23299/contents.do](https://www.mofa.go.kr/www/wpge/m_23299/contents.do) (Accessed on 15 July 2024).

## 2. Government-Level Strategies for Economic Cooperation with Africa

As the 2000s began, Africa emerged as a new and promising market, which prompted the implementation of various government support policies aimed at fostering trade cooperation and establishing economic partnerships. Korea, being a late entrant into the African market, recognized the need to expand economic cooperation and actively sought ways to overcome disadvantages. Given that economic cooperation with underdeveloped countries like those in Africa primarily relied on the private sector, the Korean government took the initiative to lead such collaborations. Due to the weak entry base in Africa, the government had no choice but to take the lead and create a foundation for entry.

To leverage Official Development Assistance (ODA) for economic cooperation, specific policies were devised. Development aid was actively utilized not only for humanitarian purposes but also as a means to enhance national brands and provide infrastructure support for companies entering the market.

In 2010, under the leadership of the Ministry of Strategy and Finance, a comprehensive “Korea-Africa Economic Cooperation Plan” was formulated through collaboration with relevant ministries.<sup>4)</sup> This plan serves as Korea’s blueprint for economic cooperation with Africa, outlining implementation strategies and sector-specific collaboration. Table 2.2 provides a summary and introduction of Korea’s Strategy for Promoting Economic Cooperation with Africa.

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4) Lee (2020), Issues Raised on Korea’s ODA to Africa: Future Perspective, in *South Korea’s Engagement with Africa: A History of the Relationship in Multiple Aspects*, edited by Youngkyu Chang, Palgrave.

**Table 2.2. Korea's Strategy for Promoting Economic Cooperation with Africa**

Strategies	Description
Three Major Strategies	1) Maximize the effectiveness of economic cooperation by focusing on regional base countries
	2) Supporting the creation of a foundation for self-sustaining growth of African countries by leveraging Korea's comparative advantages such as economic development experience
	3) Taking into account the political and social instability in Africa, a cooperative plan in which the public and private sectors jointly participated will be prepared
Three Major Tasks	1) Expansion of institutional and human network centered on regional base countries
	2) Strengthen cooperation in agriculture and IT, which can enhance the development capabilities of African countries, along with cooperation in the energy and resources sectors.
	3) Diversify financial support methods and expand the scope of development aid.
Establishment of foundation for economic cooperation	<ul style="list-style-type: none"> <li>- Activating intergovernmental policy dialogue to mitigate the risks associated with private entry.</li> <li>- Expanding cooperation with local communities.</li> <li>- Promoting organic solidarity through public-private consultative bodies, such as business forums and investment seminars</li> </ul>
Expansion of human network	<ul style="list-style-type: none"> <li>- High-level visits to Africa to facilitate the advancement of domestic companies by establishing a cooperative network.</li> <li>- Summit diplomacy to lay the foundation for economic cooperation.</li> <li>- Dispatching public-private partnership delegations and economic delegations.</li> <li>- Inviting high-level African officials to discuss Korea-Africa cooperation measures and enhance their understanding of the Korean economy.</li> </ul>
Strengthening institutional cooperation	<ul style="list-style-type: none"> <li>- Promotion of Free Trade Agreements (FTAs) with key countries to expand trade and investment</li> <li>- Expanding the Double Taxation Prevention Agreements and Investment Guarantee Agreements to facilitate investment.</li> <li>- Developing projects through regular consultations with international organizations such as the World Bank (WB) and the African Development Bank (AfDB) to secure co-financing.</li> </ul>
Expansion of financial support	<ul style="list-style-type: none"> <li>- Credit reinforcement support, such as export finance and export insurance centered on key countries</li> <li>- Expanding loans for domestic companies involved in large-scale projects, such as infrastructure and plants.</li> <li>- Extending export insurance support to facilitate the smooth implementation of exports by domestic plant and construction companies.</li> <li>- Increasing financial support of Export-Import Bank of Korea to support for small and medium-sized plant construction.</li> <li>- Expanding financial support through co-financing and trust funds in collaboration with international financial organizations.</li> </ul>

Source: Prepared by authors based on Lee (2020).

### 3. Comparative Analysis of Previous Korea-Africa High-Level Forums and the 2024 Korea-Africa Summit

The main differences and characteristics of the 2024 Korea-Africa Summit are shown Table 2.3 below. This indicates that Korea’s Africa policy has entered a new phase and suggests that cooperation between the two sides will deepen and expand in the future.

**Table 2.3. Comparative Analysis of Previous Korea-Africa High-Level Forums and 2024 Summit**

Items	High-Level Forums (previous)	2024 Summit
Level of Participation and Scale	Mainly ministerial-level attendance, some heads of state participation	Attendance of 25 African heads of state and representatives of international organizations (largest scale to date)
Scope and Depth of Agenda	Gradual expansion of agenda (from development cooperation to economy, security, culture, etc.)	Comprehensive and integrated agenda setting (shared growth, sustainability, solidarity)
Nature of Cooperation	Gradual shift from aid-centric to partnership	Emphasis on full partnership, presentation of mutually beneficial cooperation model
Scale of Economic Cooperation	Promises of gradual ODA expansion	Announcement of large-scale economic cooperation plans (ODA \$10 billion, export financing \$14 billion)
Mid to Long-term Vision	Establishment of 2~3-year mid-term plans	Presentation of long-term vision until 2030
Response to Global Issues	Gradual inclusion of global issues (climate change, SDGs, etc.)	Emphasis on joint response to global challenges (sustainability axis)
Specificity of Sectoral Cooperation	Presentation of general cooperation directions	Specification of concrete cooperation areas (e.g., critical minerals cooperation, digital cooperation)

Source: Authors compiled based on the outcome of the Korea-Africa Summit resources.

## 4. Analysis of the 2024 Korea-Africa Summit Joint Declaration

The Korea-Africa Summit held in Korea in June 2024 was the largest ever, with leaders from 25 African countries and representatives from international organizations participating under the theme “Creating the Future Together: Shared Growth, Sustainability, and Solidarity” to discuss cooperation in various fields.

The summit set a new direction for Korea-Africa cooperation based on three axes: Shared Growth, Sustainability, and Solidarity. To promote the cooperation discussed at the summit, Korea announced that Korea’s ODA to Africa will be increased to \$10 billion by 2030. Additionally, Korea plans to provide \$14 billion in export financing to Korean companies to promote trade and investment with Africa by 2030 (Table 2.4).

**Table 2.4. Korea-Africa Summit Cooperation Agenda Framework**

Cooperation Direction (3 Pillars)	Main Agenda
Shared Growth	<ul style="list-style-type: none"> <li>(1) Support for industrialization, expansion of trade and investment, promotion of business advancement</li> <li>(2) Building institutional foundations for economic cooperation: Expanding market entry into Africa through Economic Partnership Agreement (EPA), Trade and Investment Promotion Framework (TIPF), Double Taxation Avoidance Agreement (DTAA), Investment Protection Agreement (IPA), etc.</li> <li>(3) Cooperation in national infrastructure such as roads, railways, ports, airports, electricity</li> <li>(4) Cooperation in urban infrastructure such as smart cities, intelligent transportation systems</li> <li>(5) Digital cooperation: Support for building Pan-African Payment and Settlement System (PAPSS), strengthening cooperation in digital fields such as Korean-style electronic customs system (UNIPASS), electronic procurement system (KONEPS), statistical system (KOSIS)</li> <li>(6) Expansion of support for science and technology, education, and Technical and Vocational Education and Training (TVET)</li> </ul>

**Table 2.4. Continued**

Cooperation Direction (3 Pillars)	Main Agenda
Sustainability	<ul style="list-style-type: none"> <li>(1) Environmental cooperation: Focusing on the severity of forest destruction and land degradation due to climate change, cooperation in fields such as land and forest protection, sustainable land management, and biodiversity conservation</li> <li>(2) Agricultural cooperation: Supporting food security and sustainable agriculture through expansion of irrigation facilities, smart farm and agricultural product processing technology cooperation</li> <li>(3) Health and medical cooperation: Expanding health and medical development cooperation through collaboration to strengthen access to basic health services, building basic health infrastructure, establishing public health laboratory systems</li> <li>(4) Supply chain cooperation for critical minerals: Establishing a ‘Korea–Africa Critical Minerals Dialogue’ channel for stable supply of critical minerals needed for advanced industries such as electric vehicles, batteries, and renewable energy</li> </ul>
Solidarity	<ul style="list-style-type: none"> <li>(1) Strengthening cooperation to solve international community issues through peacekeeping activities, humanitarian support, and promotion of international cooperation</li> <li>(2) Expanding high-level personnel exchanges including government officials, business representatives, and members of parliament</li> <li>(3) Promoting understanding through expanded human exchanges in various fields such as culture, arts, sports, and tourism</li> </ul>

Source: Prepared based on Joint Declaration, 2024 Korea-Africa’s Summit, <https://2024rokasummit.kr/?menuno=1>.

## Chapter 3



# Korea's ODA Strategies for Africa: Focus on the Key Agendas of 2024 Korea-Africa Summit

1. Rethinking the Underlying Causes of Africa's Underdevelopment
2. Agricultural Development
3. Environmental Sector: Climate Change, Desertification and Deforestation
4. Urban Transportation: Intelligent Transportation Systems (ITS)
5. Supporting Industrialization through TVET Program
6. Healthcare
7. Digital Cooperation
8. Sharing Korea's Development Experience with Africa



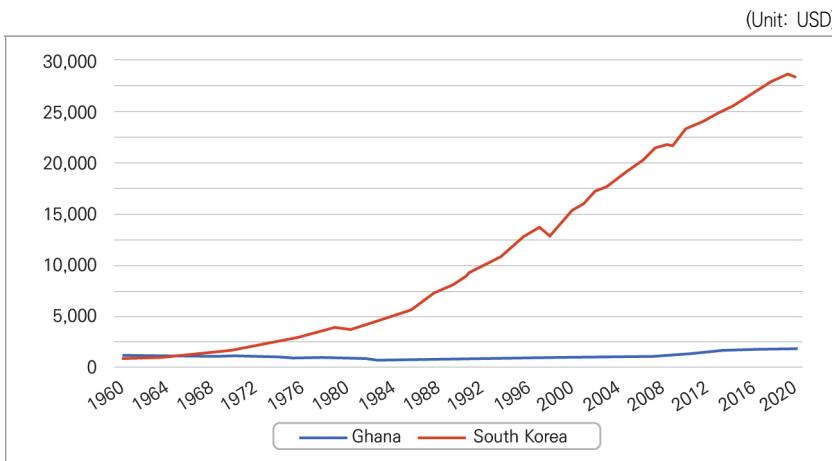
# 1. Rethinking the Underlying Causes of Africa's Underdevelopment

## 1-1. Debates on Africa's underdevelopment

There is a famous Korean saying that a decade can change rivers and mountains, with mountains and rivers representing “everything.” Similarly, it was anticipated that conditions in Africa would improve over time. In the early 1960s, when African countries began to gain independence from European colonial powers, there was optimism about Africa's future. Unfortunately, the reality is that the majority of African people remain impoverished, unable to escape the poverty trap.

Africa's narrative has largely centered around stories of poverty and underdevelopment, and to this day, it remains a land of mystery and paradox with little progress. Many decades have passed since African countries gained independence, yet fundamental development has been

Figure 3.1. Comparison of GDP per capita between Ghana and Korea



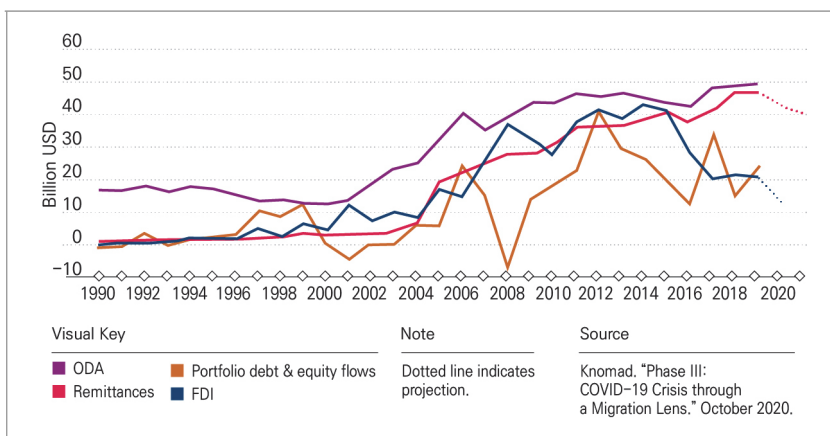
Source: Brookings, <https://www.brookings.edu> (Accessed on 20 July 2024).

limited. For instance, in 1957, when Ghana achieved independence, it was more prosperous than Korea. Today, however, Korea's GDP per capita is over 20 times that of Ghana (Figure 3.1). Korea faced daunting challenges similar to those that Ghana and other African countries face today, but it successfully overcame them. As a result, Korea has emerged as an economic powerhouse, ranking as the 14th largest economy in the world in 2023.

Many development economists, dismayed by Africa's seemingly never-ending troubles and underdevelopment, have identified the root causes of these issues from various perspectives.

Despite significant foreign aid flowing into the continent since independence in the early 1960s, debates persist regarding Africa's disappointing performance in poverty reduction and economic development. Concerns have been raised about the effectiveness of foreign aid delivery in Africa, with some arguing that current foreign aid has not yielded significant progress. As depicted in Figure 3.2 below, ODA inflows into Africa surpassed private inflows into the region by a considerable margin. However, Africa has been unable to harness ODA effectively to bring about

**Figure 3.2. External financing into SSA**



Source: Brookings, <https://www.brookings.edu> (Accessed on 20 July 2024).

significant improvements in its development.

In the eyes of recipient countries, foreign aid tends to be perceived as a free and unrestricted public goods. Ironically, some critics go as far as claim that the provision of foreign aid itself often exacerbates Africa's problems by undermining/weakening African governance.

Among the numerous individuals from various backgrounds, including government officials, diplomats, scholars, development experts, NGO workers, and journalists, no one has claimed that foreign aid itself has led to tangible development in Africa. It is certainly true that huge amount of foreign assistance poured into the African region over the past several decades have failed to produce any significant development. The biggest unsolved conundrum of underdevelopment in Africa is the question of why it is so daunting for Africa to escapes from the "poverty trap", despite receiving massive foreign aid. Until the 1960s and early 1970s, Africa was never poorer than Asian developing countries, and some African countries had higher national incomes than Asian countries. For example, in the early 1960s, Ghana's national income was higher than that of Korea, and Gabon's national income was more than triple that of Korea (Ministry of Strategy and Finance 2014). In addition, many other African countries such as Congo and Zimbabwe also were richer than Korea.

In this regard, the question arises as to why Africa today languishes as the poorest region in the world. It is not simple to figure it out. This is because development challenges in Africa are not limited to the economic sector but are deeply entrenched across all areas including politics and society. Research studies on the underlying causes of underdevelopment in Africa are as complex and diverse as the reality in this region. Factors that explain the causes of Africa's poverty range from natural conditions to ethnic, historical, cultural contexts, colonial legacy, and lack of national development motivation, and the like. Some argue that, based on Western-centric mindset, the cause of poverty in Africa is attributable to the laziness and incompetence of the people in the region. For example, one explanation is

that black people are lazy than white people, so inevitably the former cannot be richer than the latter. The explanations of existing studies on the causes of African poverty are largely divided into intrinsic factors such as institutional policy failure, and unfortunately predetermined conditions such as unfavorable climates.

International organizations including the World Bank and the IMF tend to explain the fundamental causes of African poverty from a Washington Consensus perspective. The perspective of a Washington Consensus explains the underlying reason that Africa cannot enter the path of development as Africa's inherent fault/defect. Accordingly, underdevelopment in Africa today is said to be the result of political instability and lack of democracy/transparency/accountability, corrupt leaders, inefficient economic systems, and bad governance, and the like. In addition, market failure, unfavorable business environment, and lack of entrepreneurship are cited as reasons for underdevelopment in Africa. Collier and Dollar (2001) assert that poor population in the world can be halved through best practices based on the Washington Consensus.<sup>5)</sup>

However, this 'development prescription' is believed to have limitations of persuasion in that it does not largely take into account Africa's inherent political and social context. It can be said that this approach makes the error of finding the cause of underdevelopment in the results of underdevelopment, which is not logical approach. It is inevitable that African countries, where absolute poverty and chronic diseases are rampant, have unwillingly fragile governance and do not have democratic systems. Development economists such as Jean Ziegler (2005) argue that western-style policy recommendations based on the Washington Consensus do not suitable for African development context.<sup>6)</sup> Against this backdrop, this

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5) Collier and Dollar (2001), Foreign Aid and Economic Growth, *European Economic Review*, 46, 1475-1500, <https://www.scrip.org/reference/referencespapers?referenceid=1692117> (Accessed on 15 June 2024).

6) Jean (2005), Campaign against America, <https://unwatch.org/jean-zieglers-campaign-against-america-a-study-of-the-anti-american-bias-of-the-un-special-rapporteur-on-the-right>

section aims to shed lights on the causes of poverty in Africa from multiple perspectives.

## **1-2. Natural and Geographical Factors**

It is common belief that African poverty is certainly correlated with natural and geographical conditions in the region, although other causes of African poverty are numerous. In identifying African underdevelopment, many research studies have dealt with institutional and political factors, as well as natural environmental factors. The correlation between economic development and geographical/climate conditions has already been proven through many empirical studies, revealing that tropical climate regions are at a great disadvantage in terms of human health and agricultural productivity, compared to temperate climate areas.

Africa has exogenous factors that are undeniably unfavorable to economic growth in terms of natural environmental conditions. A great part (92%) of sub-Saharan Africa (SSA) are in tropical zones, exposing to various disease such as malaria and other endemic diseases. According to international health statistics, one to three million population die from malaria every year around world, of which SSA accounts for 90%. Malaria in Africa is revealed to have the highest infectiousness and fatality rate in the world, mainly due to the region's unique climatic and ecological factors. The prevalence of malaria not only dampens economic activities, including livestock and agriculture, but also threatens human life by shortening life expectancy.

One of the geographical constraints that hinder African development is the disconnection from global markets. The African continent was fragmented into 53 nations in the process of colonialization by European powers, of which are landlocked countries. This has been a major constraint

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to-food/ (Accessed on 15 June 2024).

hampering trade and industrial activities of African countries, especially landlocked nations. The geographical and natural conditions of Africa, characterized by the existence of many landlocked countries, the harsh tropical climate and various diseases are often cited as obstacles to Africa's development. Many pioneers including Jeffery Sachs in the research on geographical conditions for development reiterate that adverse geography/climatic conditions certainly hamper the development in Africa.<sup>7)</sup> Paul Collier and Ricardo Hausmann similarly views that the geographical conditions of 'landlocked countries with bad neighbors' make the development of these countries even harder,<sup>8)</sup> Tim Marshall depicts Africa as a historically isolated continent cut off from the centers of international trade and has a disadvantage of lack of navigable rivers.<sup>9)</sup>

### **1-3. Political and Social Factors**

For sustainable economic development, most importantly, strong leadership capable of stabilizing politics and society, and further mobilizing national capability is essential. The establishment of a competent government with strong will for economic development is also one of the essential prerequisites. The secret that Korean economy was able to overcome poverty and achieve miraculous growth in a short period of time under the initial conditions similar to those of Africa in the 1960s was that these prerequisites were met.

Unfortunately, however, in many African countries, the national basic order has not yet been established, mainly due to political and social instability, fragile security systems, and racial and religious confrontations.

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7) Sachs (2006), *The End of Poverty: Economic Possibilities for Our Time*, Penguin Books.

8) Hausmann (2001), *Prisoners of Geography, Foreign Policy*, Vol. 122: 44, [https://www.researchgate.net/publication/271816418\\_Prisoners\\_of\\_Geography](https://www.researchgate.net/publication/271816418_Prisoners_of_Geography) (Accessed on 20 June 2024).

9) Marshall (2019), *The Age of Walls: How Barriers Between Nations Are Changing Our World*, <https://www.amazon.com/Age-Walls-Barriers-Changing-Politics/dp/1501183915> (Accessed on 20 June 2024).

The lack of rule of law and institutions is a certainly major constraint holding back Africa's development, which often means Africa countries should adopt Western-style system. To that end, a huge amount of money has been poured into African countries by many donors in order to improve their institutions. However, these intentions of donor countries have ended up with virtually ineffective results. African development challenges could not be solved by the institutions/laws that donor countries try to introduce. Effective institutions are not solely defined by laws and regulations, but also by culture – how people in a region address problems and advance. At their essence, institutions mirror the values held by people. And crucially, these values must originate from within the community.

In addition to the underlying factors mentioned above, to a greater or lesser extent, there are many other factors that affect Africa's underdevelopment. Among other factors, first of all, corruption easily comes to mind, which is viewed as the biggest reason for Africa's problem. Corruption exists everywhere in any society and country, but it is more conspicuous/pronounced and widespread in Africa, which is seen as a general attribute of a weak social fabric. Especially in Sub-Saharan Africa, corruption is so rampant that it is relentlessly appearing as a regular item in the various news.<sup>10)</sup>

Africa continues to top the list in the category of the most highly corrupt countries in the world, according to multiple international surveys including Transparency International Corruption Index. An African Union estimated in 2023 that corruption cost the continent roughly \$140 billion a year. Corruption in Africa spans a wide range from high-level politicians to low-level public officers, which greatly undermines basic institutions/system of the country and unduly increases the cost of doing business. Furthermore, corruption in Africa is not confined to public sector, but extends its scope to the private sector. Politician and officials at various levels in government departments and public organizations routinely and

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10) Hope, Ronald and Chikulo (2000), *Corruption and Development in African: Lessons from Country Case Studies*, Palgrave.

incessantly engage in private business, frequently/openly demanding bribes. It is not surprising that that police, customs officers and other officers in public service take bribes, which is very common in Africa. This is not the end of the corruption story in Africa. Foreign aid projects also often become the easy targets of corruption. It is a widespread practice in Africa that government officers at all levels ask for commission as it they are entitled to it. As a matter of fact, corruption is particularly detrimental to the Africa's development, which is a reflection of the African reality.

#### **1-4. Economic and Industrial Factors**

One of the most fundamental causes of underdevelopment in Africa is attributable to poor domestic capital among others. In this situation, it is inevitable for Africa to heavily rely on foreign capital including FDI, however, it is difficult to expect an active foreign capital inflow into Africa, mainly due to the poor investment environment, political and social risks, poor infrastructure, red tapes, weak rule of law, corruption, and other invisible barriers.

This has resulted in the backwardness of Africa's industrial structure, in which Africa economy is characterized by 'monocultural' economic structure that relies almost entirely on primary commodities such as crude oil, minerals, and crops. This is reflected in the export product mix of African countries; in Mali, gold and cotton account for nearly 80% of its total exports, while diamonds and oil account for more than 70% of its total exports in the Democratic Republic of Congo (DRC).<sup>11)</sup> In Angola, crude oil and diamond also account for 95% of its total exports. In case of Ghana,

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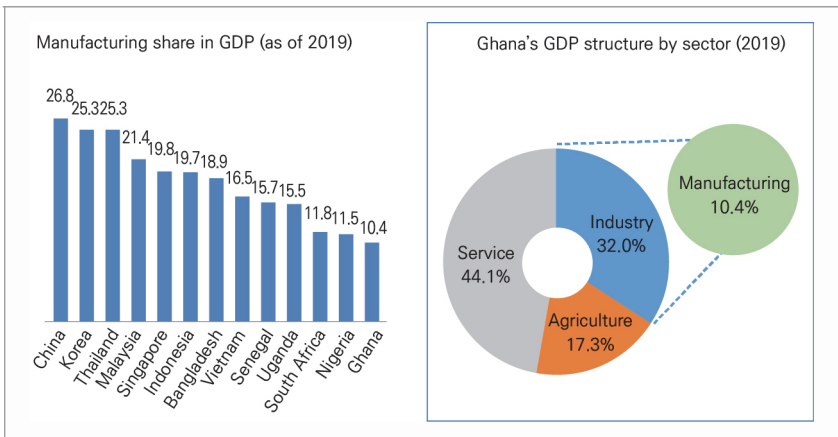
11) Democratic Republic of the Congo (COD) Exports, Imports, and Trade Partners | The Observatory of Economic Complexity ([www.oec.world](http://www.oec.world)) Accessed on 28 August 2024  
Mali (MLI) Exports, Imports, and Trade Partners | The Observatory of Economic Complexity ([www.oec.world](http://www.oec.world)) and Democratic Republic of the Congo (COD) Exports, Imports, and Trade Partners | The Observatory of Economic Complexity ([www.oec.world](http://www.oec.world)) Accessed on 28 August 2024.



five primary products including mineral fuels, fruit & nuts, plastic articles, wood and Aluminum accounts for surprisingly 95.5% of its total exports. In addition, in many other African countries, primary products have been leading their exports.

Africa’s mono-cultural economy structure, which relies heavily on a small number of primary products, has consequently been leading to deindustrialization, let alone the creation of value-added industries, not entering into the normal process of economic transformation. As depicted in Figure 3.3 below, manufacturing sector in Africa is far from being an engine of economic development, playing a marginal role in industrial production, exports, job creation and inter-sectoral linkages.

**Figure 3.3. Manufacturing share in GDP**



Source: the Global Economy.com, <https://www.theglobaleconomy.com> (Accessed on 20 July 2024).

The objective of economic transformation is to change the structure of the national economy, thereby upgrading the quality of economic growth. To be more specific, economic transformation refers to the continuous process of moving economic resources, from low-productivity to higher-productivity sectors. Economic resources include labor, land, technology,

financial resources, infrastructure, human capital, capital good and the like. The movement of resources from less productive sectors to more productive sectors is the central to a sustainable economic development. Almost every country in the world including Africa, has been seeking economic transformation, but successful countries are among the few.

Over the last two decades, Africa has achieved remarkable economic growth. In this regard, many economists have positively assessed Africa's future, saying that, "Africa has reached the turning point or a crossroads". In 2013, the Economist described Africa as a 'continent full of hope', covering Africa as a cover story, with putting African pictures on the front of the magazines.<sup>12)</sup> Africa's economic growth, over the past two decades, has been unprecedented, so, rosy prospects for Africa's future has been dominant/prevailed. However, looking at the quality of Africa's economic growth, it is questionable that the future of Africa is hopeful. African countries still face countless challenges, including fragile productive sectors, poor infrastructure, lack of human capital, and the like. Africa's middle class is also insignificant, compared to other emerging economies.

Africa is referred to as 'continent of the future', because the share of young people is quite high.<sup>13)</sup> However, African young population is able to have a future, only if enough jobs are created to support them. As mentioned previously, Africa's economic performance, since the early 2000s, is certainly remarkable. However, it is questionable that what extent remarkable economic growth has been associated with job creation and diversified economic structures that are resilient to external shocks. This achievement has not led to enhancing productive capacities and economic transformation, which directly contributes to job creation and income growth. Africa's economy has yet to escape from a mono-cultural economy,

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12) The Economist, Mar 2nd 2013. *A Hopeful Continent*, Special Report.

13) UNIDO (2022), African is the continent of the future with many opportunities. <https://www.unido.org/news/africa-continent-future-many-opportunities-unido-highlights-key-issues-its-industrial-growth> (Accessed on 20 June 2024).

heavily relying on a small number of primary products.

Korea's economy developed so quickly, through the successful economic transformation: Korea has experienced the most dramatic economic transformation in the world, over the past half-century. Korea began as an agriculture-based economy in the 1960s, yet it evolved to become the 10th largest economy in the world in terms of GDP. How did dramatic economic transformation take place? What are the driving forces behind Korea's successful economic transformation? It was largely attributed to the comprehensive national development policies, and capabilities to implement them effectively. More specifically, strong government leadership, infrastructure development, export-oriented industrialization, heavy and chemical industry development, technology development, industrial complexes development, and successful mobilization of financial resource, were major factors in transforming Korea's economic structure over the last 50 years.

Industrialization is the key for Africa to catch up with Asian emerging countries, including Indonesia, Thailand, and Malaysia. It is believed that Africa has a huge potential of industrialization in many sectors: An example is the Agro-industrialization, through agro-business sector development.

## **1-5. Mindset factor and Social Engineering**

Many African researchers have long pondered what has hindered the continent's development and what the way forward should be. It is no surprise that numerous studies have been conducted by various experts and organizations across a wide range of fields. Most of these studies consistently emphasize the importance of good governance, rule of law, transparency, eradication of corruption, and democracy, often reflecting the traditional wisdom of Western countries.

However, these factors alone are insufficient to identify the root causes of Africa's underdevelopment. Many African researchers strongly believe that mindset is a crucial factor for the continent's development — a belief

exemplified by the experience of the Saemaul Undong in the 1970s. The Saemaul Undong serves as an icon of successful community-driven rural development, rooted in a campaign to change mindsets toward cooperation, self-help, and diligence, significantly contributing to national economic growth. This initiative empowered rural villagers to take proactive steps in their development, rather than leaving their fate in the hands of outsiders, through mental reform during Korea's early economic development. The philosophy of inspiring people with a "can-do spirit" and encouraging cooperative efforts transformed them into active agents of rural change.

As is well known, African governments have repeatedly committed to economic development through national strategies but have often failed to produce tangible and sustainable outcomes, primarily due to poor implementation capabilities. Aid projects frequently do not yield intended results for the same reason. As vision without action is merely an illusion, only a vision that includes implementation can lead to significant change and development. Therefore, there is an urgent need to strengthen implementation capacity, which I believe can be achieved through the spirit of "mind over matter." This phrase has been used in various contexts, including spiritual doctrines, parapsychology, and philosophy.

Mindset should be considered a key element in discussions about Africa's development, as the ultimate solution to breaking the development impasse lies in changing attitudes. The "mindset change" approach offers significant benefits, such as enhancing awareness of ownership, fostering attitudinal changes, and promoting an action-oriented approach—essential for the successful implementation of development projects in Africa. Based on these observations, it is highly recommended that African countries adopt mindset change programs to facilitate radical transformation in implementation capacity. Without fundamental changes in the mindset of leaders and citizens, real progress will remain elusive. Development policies will be ineffective if not followed by concrete actions.

While it may be challenging to bring about mental change in African

societies, Korea's development experience demonstrates that it is not impossible and is certainly achievable. Korea and African countries share many similar historical experiences and initial conditions. Thus, Korea's model as a developmental state could provide valuable lessons and implications for African countries in the early stages of development, supporting their endeavors for progress.

## **1-6. Implications of “Rethinking the Underlying Causes of Africa’s Underdevelopment” for Cooperation with Africa**

### **1) Need for a Multifaceted Approach**

Africa's underdevelopment results from a complex interplay of historical, political, economic, and social factors, rather than a single cause. Therefore, it is essential to develop holistic cooperation strategies that address multiple sectors simultaneously. For instance, a project aimed at improving agricultural productivity should also consider related factors such as rural infrastructure, market access, and farmer education.

Implementing cross-sectoral projects that combine elements from different domains is possible. For example, a healthcare initiative could incorporate digital technology for telemedicine, renewable energy for clinic electrification, and education for community health workers. Establishing multidisciplinary teams for project design and implementation — including experts from fields such as economics, sociology, anthropology, and environmental science — will ensure a comprehensive approach.

### **2) Consideration of Regional Specifications**

Africa is not a monolithic entity; each country and region has its unique historical background, cultural context, and development challenges. Therefore, conducting thorough country-specific and region-specific analyses is essential

before designing cooperation projects. This analysis should encompass not only economic data but also insights into local governance structures, cultural practices, and social dynamics.

Engaging local stakeholders — such as government officials, civil society organizations, and community leaders — at all stages of project planning and implementation is crucial to ensure cultural appropriateness and local ownership. Additionally, Korean development agencies should incorporate region-specific expertise by establishing specialized country or regional desks staffed with experts who possess in-depth knowledge of specific African contexts.

### **3) Adoption of a Long-Term Perspective**

Africa's development challenges require sustained, long-term engagement rather than quick fixes. When designing projects, it's essential to consider longer timeframes — potentially spanning 5 to 10 years or more — to achieve meaningful impact and sustainable change. During the implementation phase, clear milestones and evaluation points should be established to adapt to changing circumstances over time.

Prioritizing capacity building and knowledge transfer in all projects is crucial for ensuring long-term sustainability. For instance, infrastructure projects should include comprehensive training programs for local maintenance and management. This can be facilitated through long-term institutional partnerships between Korean and African organizations, such as twinning arrangements between universities or research institutions, fostering ongoing collaboration and knowledge exchange.

Additionally, organizing funding mechanisms that support long-term engagement, such as multi-year grant programs or revolving funds, is essential for sustained investment in key sectors.

#### **4) Importance of Institutional Capacity Building**

Weak institutions and governance structures significantly hinder Africa's development by impeding effective policy implementation and service delivery. Korea needs to provide technical assistance for institutional reform and capacity building across various sectors. This support could include:

- Developing robust legal frameworks
- Improving public financial management systems
- Enhancing policy formulation processes
- Implementing e-governance solutions to improve efficiency and transparency in public administration, such as digital systems for tax collection, public procurement, or citizen services.

Korea can also offer comprehensive training programs for civil servants at various levels of government, covering both technical skills (e.g., project management, data analysis) and soft skills (e.g., leadership, ethical decision-making). Projects could involve establishing or strengthening key institutions crucial for development, such as statistical offices, anti-corruption agencies, or regulatory bodies for specific sectors.

Additionally, Korea can facilitate knowledge exchange programs, such as study visits or secondments, between Korean government agencies and their African counterparts to share best practices in public administration and governance.

#### **5) Significance of Human Capital Development**

The shortage of skilled human resources across various sectors is a critical bottleneck for Africa's economic development and competitiveness. Korea could expand support for Technical and Vocational Education and Training (TVET) programs, aligning them closely with industry needs. This could involve:

- Establishing sector-specific training centers

- Developing standardized curricula
- Implementing apprenticeship programs

Projects could also include enhancing partnerships in higher education, such as joint research programs, faculty exchanges, and scholarship opportunities for African students to study in Korea. Additionally, comprehensive education sector reforms could support African countries in areas like curriculum development, teacher training, and education management information systems.

Korea's partnership can feature targeted programs to address specific skills gaps in key sectors, for example, training programs for healthcare workers, agricultural extension officers, or renewable energy technicians. Support for developing digital skills and literacy should extend across various segments of the population, from basic computer skills for rural communities to advanced coding boot camps in urban centers.

Finally, implementing brain gain initiatives can leverage the skills and knowledge of the African diaspora, such as temporary return programs for skilled professionals or virtual mentoring schemes.

## **6) Necessity of Infrastructure Development**

Africa's inadequate infrastructure — particularly in transportation, energy, and telecommunications — severely constrains economic growth and regional integration. Korea can participate in large-scale infrastructure projects, leveraging its expertise in areas such as high-speed rail, smart grid systems, and broadband networks. This involvement could encompass not only funding but also technical assistance and knowledge transfer throughout the project lifecycle.

Projects could include the development of sustainable and climate-resilient infrastructure. For instance, Korea could assist in implementing green building standards, developing climate-adaptive road construction techniques, or promoting off-grid renewable energy solutions for rural areas.



Additionally, Korea can help develop and implement national infrastructure master plans, enabling African countries to prioritize investments and ensure coherent development across sectors.

Korea can provide technical assistance for infrastructure maintenance and management, including training programs for local engineers and technicians, as well as support for developing asset management systems. Promoting regional infrastructure projects that enhance connectivity between African countries — such as cross-border power interconnectors or transport corridors — would also be beneficial.

Furthermore, there could be projects focused on developing urban infrastructure to address rapid urbanization, including initiatives in waste management, urban mobility, and water and sanitation systems.

## **7) Importance of Agricultural Modernization**

Despite its potential, Africa's agricultural sector suffers from low productivity, limiting food security and economic opportunities for a significant portion of the population. Korea can transfer advanced agricultural technologies adapted to African contexts, such as drought-resistant crop varieties, precision farming techniques, and appropriate mechanization solutions for smallholder farmers.

Support could also focus on developing agricultural value chains, covering everything from input supply to post-harvest processing and marketing. This may include projects to establish agro-processing facilities, improve storage infrastructure, and develop market information systems. Furthermore, Korea can assist in implementing climate-smart agricultural practices to enhance resilience to climate change, with projects focused on conservation agriculture, agroforestry, or efficient irrigation systems.

Sharing Korea's experience in agricultural cooperatives and rural community development, models like the Saemaul Undong can be adapted to local contexts in Africa, as has been successfully implemented in several African countries. This could involve pilot projects in selected communities,

accompanied by careful monitoring and evaluation for potential scaling.

Korea can also support agricultural research and extension services through partnerships between Korean and African agricultural research institutions, as well as initiatives to strengthen national agricultural extension systems. Relevant programs to promote youth engagement in agriculture, such as agribusiness incubators or digital agriculture initiatives, can help address the aging farmer population and create attractive opportunities in the sector.

## **8) Need for Environmental and Climate Change Response**

Africa is particularly vulnerable to climate change and environmental degradation, which threaten livelihoods, food security, and overall development prospects. Korea can support the development and implementation of national climate change adaptation and mitigation strategies. This support could involve technical assistance in areas such as vulnerability assessments, policy formulation, and monitoring and evaluation systems.

To combat desertification and land degradation, Korea can draw on its experience in reforestation. This might include large-scale afforestation projects, sustainable land management programs, or community-based natural resource management initiatives.

Korea can also promote renewable energy through projects such as solar mini-grids for rural electrification, wind farm development, and capacity building in renewable energy planning and management. Additionally, Korea can assist in developing climate-resilient water management systems, focusing on projects related to watershed management, water harvesting techniques, and efficient irrigation systems.

Efforts should also include biodiversity conservation, potentially through projects on protected area management, community-based conservation, and sustainable wildlife tourism development. Furthermore, implementing waste management and circular economy initiatives can be supported by

sharing Korea's expertise in areas such as recycling systems and waste-to-energy technologies.

## **9) Importance of Private Sector Development**

A robust and dynamic private sector is crucial for job creation, innovation, and sustainable economic growth in Africa; however, many countries struggle to create an enabling environment for business. Korea can provide technical assistance to improve this business environment, including support for regulatory reforms, streamlining business registration processes, and developing public-private dialogue mechanisms.

Programs aimed at SME development can be implemented, potentially including access to finance initiatives, business development services, and linkage programs that connect SMEs to larger value chains. Korea can support entrepreneurship ecosystems through projects such as startup incubators, innovation hubs, and mentorship programs, which could involve partnerships between Korean and African tech hubs or universities.

Promoting knowledge transfer and technology adoption in key industries can also be facilitated through joint ventures or technology licensing agreements between Korean and African companies. Additionally, vocational training programs aligned with private sector needs could involve Korean companies operating in Africa in curriculum development and internship provision. Focused efforts on developing local content in strategic sectors, such as oil and gas or mining, will enhance local value addition and job creation.

## **10) Necessity of Regional Integration**

Limited regional integration hampers Africa's ability to achieve economies of scale, attract investment, and compete effectively in the global economy. Korea can provide technical assistance for the implementation of the African Continental Free Trade Area (AfCFTA), which could include support

for harmonizing regulations, developing trade facilitation systems, and building capacity in trade negotiations.

Korea can also support the development of regional value chains in key sectors such as automotive, pharmaceuticals, and agro-processing to enhance intra-African trade and industrialization. Various regional infrastructure projects can be implemented to improve connectivity, including transport corridors, cross-border energy networks, and regional payment systems. Additionally, supporting capacity building for regional economic communities (RECs) in areas such as policy harmonization, monitoring and evaluation, and project management will be beneficial.

Projects can enhance cross-border cooperation in critical areas such as water resource management, disease surveillance, and biodiversity conservation. Korea can further support the establishment of regional centers of excellence in key fields like agriculture, renewable energy, and ICT to foster knowledge sharing and collaboration across countries.

By considering these detailed implications in its cooperation strategies, Korea can develop more targeted, effective, and sustainable partnerships with African countries. This approach would contribute meaningfully to the continent's development while also advancing Korea's interests in the region.

## **2. Agricultural Development**

### **2-1. Underdevelopment of Africa's Agriculture**

#### **1) Low Productivity**

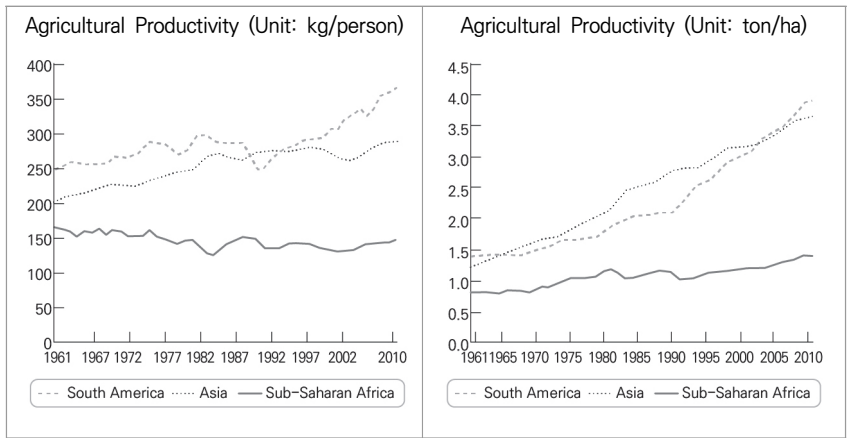
Africa's prolonged struggle to reducing poverty is greatly due to the underdevelopment of its agricultural sector which employs around three quarters of the population and generates a quarter of the continent's GDP. Whereas Asia and Latin America were able to overcome low agricultural

productivity in the late 1960s through the expansion of irrigation facilities, research into new varieties of crops and increase in the use of agricultural inputs as part of the Green Revolution Africa's productivity have remained stagnant. As a result, Asia and Latin America were able to increase crop productivity 4 times per hectare over the past 50 years while Africa's production per head has rather decreased as population increase has outpaced its productivity.

The slight increase in production per hectare in Africa, as depicted in Figure 3.4, stems from the expansion of farmland rather than from the adoption of modern techniques and inputs. In many African countries, the rural situation is characterized by persistent stagnation, low production, meager incomes, and increasing vulnerability among the impoverished population. In addition, African farmers are susceptible to increasingly volatile environments and land degradation.

Low agricultural productivity has increased dependency on food import and food aid to the extent that Africa's state of food security is directly

**Figure 3.4. Regional agricultural productivity**



Source: Park *et al.* (2012), Analysis on Africa's Development Needs and Korea's Sectoral Plan for ODA; UNDP (2012), Africa Human Development Report 2012: Towards a Food Secure Future.

connected with the amount of external food supply. Africa's agricultural commodities trade deficit reached \$9 billion in 2011 (Schaffnit-Chatterjee 2014)<sup>14</sup>) as external food supply expanded from 5% of total consumption in 1961 to 25% in 2010 (World Bank 2011). Ironically, Africa was a net food exporter till the 1970s. However, rapid population growth and production stalemate led Africa to increase food import especially that of staple food crops such as wheat, cassava, and rice. Intensifying climate change is also pressuring food supply which, in turn, increases food prices. Over the past 20 years, 32 countries in Africa were unable to feed themselves and received emergency relief.<sup>15</sup>)

The World Bank once noted that "if agriculture is in crisis, Africa is in crisis." The saying illustrates how the development of agriculture and rural livelihood is critical in eradicating poverty because more than 70% of the population is employed in the sector.<sup>16</sup>) Agricultural development is directly connected to the standard of living in Africa because of the lack of development potential in other industries. A study by OECD shows that a 10% increase in crop harvest reduces the population living under 1 dollar a day by 6-10%. Moreover, a 1% increase in agricultural investment per head leads to an increase in rural household income by 1.6%. Furthermore, agricultural development causes a positive spillover effect on the national economy as rural spending and investment increase. Table 3.1 below provides an overview of African agriculture, highlighting several key challenges.

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14) Schaffnit (2014), "Agricultural Value Chains in Sub-Saharan Africa: From a Development Challenge to a Business Opportunity," Deutsche Bank, [https://www.dbresearch.com/PROD/RPS\\_EN-PROD/Agricultural\\_value\\_chains\\_in\\_Sub-Saharan\\_Africa%3A\\_F/RPS\\_EN\\_DOC\\_VIEW](https://www.dbresearch.com/PROD/RPS_EN-PROD/Agricultural_value_chains_in_Sub-Saharan_Africa%3A_F/RPS_EN_DOC_VIEW) (Accessed on 15 June 2024).

15) Food aid to Africa reached its peak in the 1980s when more than 10% of the total food consumption was supplied through food aid in 1984. Although the portion of food aid decreased after the 1980s, it still makes up 3-5% of Africa's food consumption (World Bank 2011).

16) <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/844151468010225718/africas-development-crisis-agricultural-stagnation> (Accessed on 30 August 2024).

**Table 3.1. Overview of African Agriculture: Challenges and Statistics**

Food Insecurity (2021)	- Prevalence of undernourishment: 21.8% of the population (Sub-Saharan Africa) - Number of undernourished people: 281.6 million
Countries facing acute food insecurity (2021)	- Over 20 African countries Worst affected: Ethiopia, Nigeria, South Sudan, and Zimbabwe
Agricultural Productivity (2020), kg per hectare	Cereal yield: SSA: 1,475 kg vs Global average: 4,070 kg
Fertilizer use (2018), Kg per hectare of arable land	- SSA: 16.2 kg vs World average: 137.6 kg per hectare
Irrigation	- Irrigated land: Less than 6% of cultivated area in Africa - Potential: Only 5.5% of Africa's irrigation potential is developed

Sources: FAO, IFAD, UNICEF, WFP and WHO (2021), "The State of Food Security and Nutrition in the World 2021"; World Bank, "World Development Indicators"; African Development Bank (2021), "African Economic Outlook 2021"; FAOSTAT (2021); AGRA (2020); Africa Agriculture Status Report.

## 2) Barriers to Africa's Agricultural Development

Existing studies on African agriculture suggest a wide range of reasons for its underdevelopment. The World Bank and IMF emphasize political failure and lack of government initiatives as the primary cause whereas development economists such as Jeffrey Sachs point to exogenous limitations such as natural and geographic givens.<sup>17)</sup> Others propose poor technology and infrastructure, weak financial support, and absence of distribution markets as reasons for Africa's agricultural performance. Table 3.2 shows the lists of the principal reasons for agricultural underdevelopment in Africa. They do not cover all the causes as this would require a broader scope of research but seek to show a picture of the complexity of Africa's agriculture. These challenges present significant obstacles to food security and economic development in Africa. However, they also point to areas where targeted interventions and investments could yield substantial improvements. Addressing these issues will be crucial for improving food security, reducing poverty, and driving economic growth across the continent.

17) Sachs (2024), 'The US and Europe have never been reliable partners for Africa' - The Africa Report.com.

**Table 3.2. Causes of African agriculture’s underdevelopment**

Area	Factors
Natural	<ul style="list-style-type: none"> <li>- Climate change: Soil deterioration (65% of Africa’s agricultural land is degraded)</li> <li>- Irregular rainfall and adverse climate conditions</li> </ul>
Economic and industrial	<ul style="list-style-type: none"> <li>- Market accessibility barriers due to shortage of road and communication infrastructure</li> <li>- Accessibility barriers to modern agricultural technologies</li> <li>- Post-harvest losses: 37% of food in Sub-Saharan Africa</li> <li>- Limited mechanization: 0.04 tractors per 100 sq. km of arable land in Africa</li> </ul>
Financial capital	<ul style="list-style-type: none"> <li>- Lack of financial support to rural smallholders</li> <li>- Access to finance: Less than 1% of commercial lending in Africa goes to agriculture</li> <li>- Lack of smallholder capital</li> </ul>
Human capital	<ul style="list-style-type: none"> <li>- Lack of education and training (technology, information)</li> <li>- Decline in labor productivity due to various diseases such as HIV, AIDS</li> </ul>
Social capital	<ul style="list-style-type: none"> <li>- Lack of general confidence</li> <li>- Lack of cooperation and networking between tribes</li> </ul>
Exogenous	<ul style="list-style-type: none"> <li>- Deterioration of trade conditions in agricultural goods</li> <li>- Price-sensitive export structure</li> </ul>

Source: Prepared by Authors based on various sources.

### (1) Unfavorable Natural Environment

Agriculture is immediately affected by natural climatic conditions. Unfortunately, Africa’s climatic conditions are unfavorable to agriculture. Around 1-3 million people die of malaria each year, of which 90% is in Africa because the mosquito species residing in Africa in addition to the humidity and temperature give rise to the deadliest and most contagious form of malaria. Soil conditions are also meager in tropical climates.<sup>18)</sup> Tropical soils lose fertility after a few harvests. Such poor conditions are most prevalent in Africa along with India.

Moreover, Africa’s agriculture is rain-fed, meaning the lack or volatility of rainfall deters productivity. The Congo Basin has plentiful water resource due to sufficient rain but only 10% of the African population inhabits the

<sup>18)</sup> Malaria in Africa – UNICEF DATA (Accessed on 30 August 2024).



area, leading to an overall shortage of water resource. Many argue that climate change will aggravate hunger as productivity is threatened.

Desertification will intensify land degradation and weaken soil fertility as many countries are already drought prone. Two-thirds of the population is already affected by drought, along with 65% of arable land, 31% of pastureland, and 19% of forests destroyed.

Even though precipitation is far below that of other regions, only 4% of the farmland is irrigated in Africa whereas in South Asia and East Asia it reaches up to 39% and 29% respectively. Of the 4%, most is located in four countries: Madagascar, Nigeria, South Africa, and Sudan. As a result, agricultural water use per head is only a quartile of Asia and Latin America. Rain-fed agriculture inevitably leads to an unstable supply of food, creating “structural hunger.”<sup>19)</sup>

## (2) Policy Failure

The lack of political will and policy failures have also contributed to the backwardness of African agriculture. Asia and Latin America emphasized agriculture in the early economic development stages. On the other hand, Africa neglected agriculture in its pursuit for industrialization.<sup>20)</sup> Furthermore, policies that supported agricultural development were limited to cash crops for export such as coffee, cocoa, and cotton. As a result of such policies, crop production decreased while the import of food crops was amplified.

ODA on agriculture is only 4% of total aid. ODA for agricultural development continues to decrease since the 1990s as support for education, health, environmental protection, and other cross-cutting programs that are expanding. Even African countries themselves are tight on agricultural

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19) The Food Crisis in Africa: A Comparative Structural Analysis | The Political Economy of Hunger: Volume 2: Famine Prevention | Oxford Academic (oup.com) (Accessed on 30 August 2024).

20) African countries were engrossed in industrialization because it was a cereal exporter in the 1960s while expectations for industrial success were high. However, industrialization failed and agriculture was sacrificed.

investment. African governments have sought to improve agriculture through the “Comprehensive Africa Agriculture Development Program (CAADP)” but only 8 countries allocated more than 10% of their national budget to agriculture in 2008. Meanwhile, a large part of government budgets is allocated to military spending, mainly due to continued civil wars and internal conflicts. In 2008, 19 African states spent \$15 billion on military expenses while agricultural research and development received \$ 3 billion (UNDP 2012).<sup>21)</sup> Asian countries allocated more than 20% of the national budget on agricultural development during the Green Revolution but in Africa, the rate is between 5-10% (UNDP 2012).

In addition, female participation in farming is more than 50%. However, policies bar women from land ownership. Ownership of land is formed through marriage and if the marital status is not sustained, the right to own land is also usurped (UNDP 2012).

### (3) Poor Agricultural Infrastructure and Weak Financial System

The lack of agricultural infrastructure and rudimentary trade markets are major barriers to agricultural development in Africa. The lack of agricultural infrastructure extends from the shortage of storage facilities to poor roads. Markets themselves for trading agricultural goods are few in Africa. Without markets to trade in, farmers do not feel the need to grow more than is needed for individual households. The establishment of markets and transportation methods would encourage farmers to create extra profit which could be invested in purchasing fertilizers and agricultural machinery.

Infrastructure is a vital input for sustainable development because it reduces the cost of production and distribution, as well as enlarges the market for trade. However, infrastructural development in Africa is far lacking. For example, 50% of the population in Sub-Saharan Africa must walk between 2-4 hours to reach a market whereas for 30% it takes more

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21) UNDP (2012), *Africa Human Development Report-2012*, New York.

than 5 hours.<sup>22)</sup> Meanwhile, for Asia and Latin America, 50% of farmers have access to a market within an hour's distance. The situation is more severe for landlocked countries. Rwanda scores better than Italy or Greece in terms of political transparency. However, it remains a least developed country because of its lack of infrastructure. While it takes only 14 days for a coffee producer in Colombia to transport coffee from the farm to the harbor it takes 42 days for a farmer in Rwanda which increases the price of coffee (Sungil Huh 2011).<sup>23)</sup> Mozambique is 8 times the size of Korea, has abundant water resources and has around 80% of the population employed in the agricultural sector. Despite such favorable conditions, production is among the lowest in Africa due to its lack of technology and infrastructure.

Access to transportation and distribution is more limited in rural areas than it is for urban areas. Only around 30% of the rural population resides within 2km of a roadway. Limited access to transportation and distribution is connected with income creation. Difficulties in transportation limit opportunities to increase income by selling surplus production or effectively delivering food aid to hunger-stricken areas. Transportation costs take up as much as 50% of export prices in agricultural goods for Malawi where agriculture accounts for 90% of total exports (Senghor *et al.* 2009).<sup>24)</sup>

In addition, Africa has a very weak financial system, especially for rural smallholders. Apart from a few countries, credit loan systems like micro-financing do not exist. This leads to a stalemate of purchasing improved seeds, fertilizers, pesticides, and other agricultural inputs or machinery. Moreover, financial institutions are reluctant to lend credit because Africa's risks to climate vulnerability are high. As a matter of fact, only 3% of the total credit loan of national financial institutions is given to smallholders.

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22) South Africa Overview, Development news, research, data, World Bank (Accessed on 30 August 2024).

23) Huh(2011), "Why South Korea is interested in Rwanda," *Journal of International and Area Studies*, Vol. 30, pp. 93-106.

24) Senghor (2009), *Globalism and Africanism*. Phronimon, Vol. 17, No. 2.

## 2-2. Smart Farm Technology

### 1) Overview of Korean Smart Farm Technology

Korean Smart Farm Technology refers to the application of advanced Information and Communication Technology (ICT) to traditional farming methods. It aims to optimize crop yield, improve quality, and increase farm efficiency through data-driven decision-making and automation.

Table 3.3 illustrates the comparative advantage of Korean smart farm technology. This overview demonstrates how Korean Smart Farm Technology is not just about applying technology to farming but represents a comprehensive approach to transforming agricultural practices for increased productivity, sustainability, and resilience.

**Table 3.3. Comparative Advantages of Korean Smart Farm Technology**

Technological Edge	<ul style="list-style-type: none"> <li>- ICT Convergence: Application of advanced technologies like sensors, IoT, and big data analytics</li> <li>- Automation Systems: Automated greenhouse environment control and irrigation systems</li> <li>- Energy Efficiency: Utilization of renewable energy and energy-saving technologies</li> </ul>
Adaptability and Scalability	<ul style="list-style-type: none"> <li>- Applicable to Various Agricultural Environments: Implementation in greenhouses, open fields, vertical farms, etc.</li> <li>- Modular Systems: Possibility of phased introduction based on local conditions</li> </ul>
Economic Viability	<ul style="list-style-type: none"> <li>- High-Value Crop Cultivation: Increased profitability through improved productivity and quality</li> <li>- Resource Use Optimization: Cost reduction through precise use of water, fertilizers, and pesticides</li> </ul>
Environmental Friendliness	<ul style="list-style-type: none"> <li>- Precision Agriculture: Reduced environmental impact through prevention of excessive resource use</li> <li>- Climate Change Resilience: Stable production even under extreme climate conditions</li> </ul>
Examples of Smart Farm ODA	<ul style="list-style-type: none"> <li>- Vietnam Smart Farm Pilot Project (2018~)</li> <li>- Smart Farm Construction in Rwanda ICT Innovation Center (2019~)</li> <li>- Smart Farm Introduction at Uganda Agricultural Technology Training Center (2020~)</li> </ul>

Source: Pearson & Partners Korea, <https://www.pearsonkorea.com> (Accessed on 30 August 2024).

## 2) Demand for Smart Farm Technology in Africa

Smart farm technology is increasingly seen as a vital solution to numerous challenges faced by African agriculture. By enhancing productivity, resource efficiency, and market access, these technologies can significantly contribute to food security, economic growth, and sustainable development in the region.

**Table 3.4. Demand for Smart Farm Technology in Africa**

Demand Factors	<ul style="list-style-type: none"> <li>- Food Security: Need for increased agricultural productivity due to population growth</li> <li>- Climate Change Response: Demand for stable production systems to cope with extreme climate</li> <li>- Youth Unemployment Solution: Attracting youth to agriculture through advanced farming</li> <li>- Water Scarcity Response: Need for maximizing water use efficiency</li> </ul>
Key Areas of Interest	<ul style="list-style-type: none"> <li>- Greenhouse Automation: Productivity improvement through environmental control</li> <li>- Precision Irrigation: Efficient water resource utilization in water-scarce regions</li> <li>- Data-Driven Agriculture: Business improvement through production prediction and optimization</li> <li>- Vertical Farming: Urban food production and water-saving agriculture</li> </ul>
Regional Characteristics	<ul style="list-style-type: none"> <li>- North Africa: Demand for water scarcity response and desertification prevention technologies</li> <li>- West Africa: Demand for tropical crop productivity improvement and storage/distribution technologies</li> <li>- East Africa: Demand for highland-specific crops and high-value export crop production technologies</li> <li>- Southern Africa: Demand for large-scale commercial farm automation and precision agriculture technologies</li> </ul>
Challenges	<ul style="list-style-type: none"> <li>- Initial Investment Costs: Funding issues for introducing expensive equipment</li> <li>- Infrastructure Shortage: Unstable power supply and inadequate communication infrastructure</li> <li>- Technology Gap: Lack of local personnel capable of operating advanced technologies</li> <li>- Policy Support: Insufficient institutional basis for smart farm introduction</li> </ul>

Source: Park *et al.* (2019), *An Analysis of Africa's Agricultural Value Chain and Lessons from Korea's Agricultural Development Experience*, KIEP.

Some key reasons why smart farm technology is needed and in demand in Africa can be presented as follows. Firstly, Africa's population is rapidly expanding, and it is projected to reach around \$2.5 billion by 2050, compared to \$1.46 billion in 2023.<sup>25)</sup> This significant population increase necessitates a corresponding rise in food production to ensure food security. Smart farm technology can significantly boost agricultural productivity through precision farming, which optimizes resource use and increases crop yields. Secondly, African agriculture is highly vulnerable to the impacts of climate change, including unpredictable weather patterns, droughts, and floods. Smart farm technologies, such as soil moisture sensors and automated irrigation, help farmers adapt to these changes by providing real-time data and predictive analytics to make informed decisions and mitigate risks. Thirdly, water scarcity and limited arable land are major constraints in many African countries, and smart farm technology enhances resource efficiency by using precision irrigation systems, reducing water usage, and maximizing land productivity. Techniques such as hydroponics and aeroponics can also help grow crops in areas with poor soil quality. Fourthly, post-harvest losses are a significant issue in Africa, with up to 30-40% of food produced being lost due to inadequate storage, transportation, and processing infrastructure. Smart technologies like cold chain logistics, real-time tracking, and automated sorting and packaging can reduce these losses and improve food supply chain efficiency. Fifthly, in many African regions, agriculture is labor-intensive and faces labor shortages, particularly among the youth. Smart farm technology, such as automation and mechanization, can alleviate labor shortages by increasing operational efficiency and reducing the need for manual labor. Finally, smart farm technology can facilitate better market access for African farmers by providing platforms for market information, pricing, and logistics. This connectivity enables farmers to sell their produce

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25) Statista: Forecast of the total population of Africa from 2020 to 2050, <https://www.statista.com/statistics/1224222/forecast-of-population-growth-in-africa/> (Accessed on 15 June 2024).

at better prices and reduces the influence of middlemen. Improved market access drives economic growth and increases incomes for rural communities (Table 3.4).

### **3) Recommended Approach**

For the successful implementation of Korean smart farm ODA in Africa, it is essential to develop tailored solutions that consider the continent's diverse agricultural environments and needs. For instance, high-efficiency irrigation systems should be designed for water-scarce regions, while heat-resistant crop cultivation systems can be developed for tropical areas.

Starting with basic automation systems and gradually upgrading them can help reduce the initial investment burden and facilitate technology adoption among local personnel. It is also crucial to emphasize capacity building within the local workforce alongside technology transfer. The long-term goal should be to cultivate personnel who can independently operate, maintain, and advance smart farm technologies within Africa.

Smart farm technologies should extend beyond production to encompass the entire value chain, including storage, processing, and distribution. This holistic approach can increase the value of agricultural products and contribute to farm income growth. Establishing public-private partnership (PPP) models that combine Korean companies' technologies with the networks of local African companies can enhance technology localization and sustainability.

Moreover, African countries need to build institutional foundations that support the adoption of smart farming, which will contribute to the long-term development of a smart farm industry ecosystem. Exploring various financial support methods, such as blended finance models that combine ODA funds with private investments, can address initial investment cost challenges.

Cooperation with African regional economic communities can promote the dissemination of smart farm technology, realize economies of scale, and

contribute to technology standardization.

By adopting these strategic approaches, Korean smart farm ODA can significantly contribute to agricultural development and strengthen food security in Africa. Simultaneously, this initiative presents opportunities for Korean companies to enter African markets and enhance economic cooperation between Korea and African nations.

## **2-3. Supporting Agricultural Value Chains through Policy Consultation**

### **1) The Necessity of Agricultural Value Chain Support**

For sustainable agricultural development in Africa, it is crucial to adopt a holistic approach that considers the entire flow of agricultural products — the value chain — rather than focusing solely on individual interventions, such as fertilizer inputs or irrigation facility expansion. This comprehensive perspective is essential because sustainable agricultural development cannot be achieved through increased production alone.

Moreover, a market-based solution that reduces the distance between producers (farmers) and consumers is vital for creating a virtuous cycle. Improvements along the value chain can lead to higher farm gate prices, increased opportunities for farmers to expand production and enhance quality, and greater farmer participation in the commercialization of agriculture (Table 3.5).

Supporting the agricultural value chain in Africa is essential because it offers a comprehensive, market-driven approach to agricultural development. By considering all stages, from input supply to consumption, this approach creates opportunities for all stakeholders, improves efficiency, and contributes to sustainable economic growth. It goes beyond simply increasing production, fostering a system where improvements in one area can lead to positive changes throughout the entire agricultural sector.



**Table 3.5. Benefits of Value Chain Support**

For Farmers	For Consumers	For the Overall Economy
<ul style="list-style-type: none"> <li>- Increased income through better prices</li> <li>- Access to improved inputs and technologies</li> <li>- Better market information and linkages</li> </ul>	<ul style="list-style-type: none"> <li>- Access to higher quality produce</li> <li>- Potentially lower prices due to increased efficiency</li> <li>- Greater variety of products</li> </ul>	<ul style="list-style-type: none"> <li>- Increased agricultural productivity</li> <li>- Development of related industries (e.g., processing, logistics)</li> <li>- Job creation along the value chain</li> </ul>

Source: Park *et al.* (2019), *An Analysis of Africa's Agricultural Value Chain and Lessons from Korea's Agricultural Development Experience*, KIEP.

This explanation emphasizes the significance of a holistic, value chain approach to agricultural development in Africa. It highlights how this approach can create a virtuous cycle of improvements that benefit farmers, consumers, and the broader economy.

Recognizing that sustainable agricultural development in Africa requires more than just increased production, this approach emphasizes the creation of efficient market linkages, the involvement of various stakeholders, and the potential for value addition at each stage of the chain. By supporting the entire value chain, interventions can foster a more resilient and productive agricultural sector, contributing to broader economic development and food security goals.

## 2) Overview of Africa's Agricultural Value Chain

Africa's agricultural value chain is complex, characterized by significant challenges and opportunities. While the sector is vital to the continent's economy, providing livelihoods for millions, it faces numerous hurdles that hinder its full potential. The value chain consists of several interconnected stages, each presenting its own set of challenges and opportunities. A key feature of Africa's agricultural landscape is the dominance of small-scale farmers, who often have limited access to resources, technology, and markets.

Agricultural productivity remains low compared to global standards, negatively impacting overall output and incomes. Additionally, significant portions of agricultural produce are lost due to inadequate storage and transportation infrastructure. Most products are exported as raw materials with minimal processing, resulting in lower returns for farmers. Farmers also struggle to access markets, facing challenges such as lack of information, poor infrastructure, and high transaction costs. Moreover, the sector is highly susceptible to climate change, affecting production, livelihoods, and food security (Table 3.6).

Addressing the structural challenges in African agriculture requires a comprehensive strategy that involves collaboration among multiple stakeholders, including governments, the private sector, international organizations, and NGOs. Here’s a detailed outline of the proposed policy consultation approach based on Korea’s experiences, focusing on enhancing Africa’s agricultural value chain:

**Table 3.6. African Agricultural Value Chain Analysis: Stage-by-Stage Issues**

Stage	Key Issues	Detailed Explanation
Input Supply	<ul style="list-style-type: none"> <li>- Limited access to quality seeds and fertilizers</li> <li>- Restricted access to agricultural machinery and advanced technologies</li> <li>- Lack of agricultural financial services</li> </ul>	<ul style="list-style-type: none"> <li>- Quality seed usage: Only about 20% of African farmers use improved seeds</li> <li>- Fertilizer use: Average of 16kg per hectare (1/8 of the global average)</li> <li>- Agricultural finance: Approximately 4% of African farmers have access to bank loans services</li> </ul>
Production	<ul style="list-style-type: none"> <li>- Low agricultural productivity</li> <li>- Unstable production environment due to climate change</li> <li>- Predominance of smallholder farms</li> </ul>	<ul style="list-style-type: none"> <li>- Cereal productivity: 1.5 tons per hectare (half the global average)</li> <li>- Irrigated land: Only 6% of Africa’s cropland is irrigated</li> <li>- Smallholder farms: Over 80% of farms are less than 2 hectares in size</li> </ul>
Post-Harvest Handling and Storage	<ul style="list-style-type: none"> <li>- High post-harvest loss rates</li> <li>- Inadequate storage facilities</li> <li>- Absence of quality management systems</li> </ul>	<ul style="list-style-type: none"> <li>- Post-harvest losses: Average 30–40% loss for grains</li> <li>- Storage facilities: Less than 25% of farmers have access to adequate storage facilities</li> <li>- Quality standards: Less than 30% of agricultural products meet international quality standards</li> </ul>

**Table 3.6. Continued**

Stage	Key Issues	Detailed Explanation
Processing	<ul style="list-style-type: none"> <li>- Limited Agro-processing industry</li> <li>- Low technological level and outdated equipment</li> <li>- Unreliable energy supply</li> </ul>	<ul style="list-style-type: none"> <li>- Processing rate: Only about 10% of African agricultural products are processed</li> <li>- Technology level: Most processors use outdated technologies</li> <li>- Power supply: Productivity affected by frequent power outages, experiencing over 70 days of outages annually</li> </ul>
Distribution and Marketing	<ul style="list-style-type: none"> <li>- Poor transportation infrastructure</li> <li>- Complex intermediary structures and high transaction costs</li> <li>- Limited access to market information</li> </ul>	<ul style="list-style-type: none"> <li>- Road network: Only about 25% of African roads are paved</li> <li>- Distribution costs: 50-60% of final consumer price is due to distribution costs</li> <li>- Market information: Less than 30% of farmers have regular access to market information</li> </ul>
Consumption	<ul style="list-style-type: none"> <li>- Limited domestic market due to low purchasing power</li> <li>- Competition from imported agricultural products</li> <li>- Inadequate response to changing consumer preferences</li> </ul>	<ul style="list-style-type: none"> <li>- Food expenditure: Average 50-70% of household income is spent on food</li> <li>- Agricultural imports: Annual agricultural imports worth \$35 billion</li> <li>- Urbanization rate: Over 50% of Africa's population expected to live in urban areas by 2050</li> </ul>

Source: Park *et al.* (2019), *An Analysis of Africa's Agricultural Value Chain and Lessons from Korea's Agricultural Development Experience*, KIEP.

### 3) Policy Consultation

The significance of Korea's policy consulting approach for improving Africa's agricultural value chain lies in its potential to provide a unique, comprehensive, and relevant model for agricultural development. This approach is particularly noteworthy for several reasons:

Korea's journey from a war-torn, impoverished nation to a developed economy offers valuable lessons that may be more applicable to African contexts than those of Western nations. By addressing the entire agricultural value chain — from input supply to consumption — Korea's approach presents a comprehensive strategy for agricultural development. This contrasts with more piecemeal approaches that focus on only one aspect of agriculture. Emphasizing the adaptation of Korean experiences to local

African contexts, rather than directly transplanting policies, increases the likelihood of success and sustainability.

Targeting improvements for small-scale farmers, who constitute the majority of Africa's agricultural workforce, aligns well with poverty reduction and food security goals. Korea's experience in modernizing traditional agriculture through appropriate technology can provide valuable insights for African countries aiming to boost agricultural productivity. Additionally, the focus on human resource development and institutional strengthening supports long-term, sustainable agricultural growth. This approach represents a new paradigm in development cooperation, offering an alternative to traditional North-South models and promoting knowledge sharing among developing and emerging economies.

In essence, Korea's policy consulting approach acts as a bridge between the experiences of a recently developed nation and the current challenges faced by developing African countries. It offers a model that is potentially more relatable and adaptable than those proposed by long-established developed nations, while also incorporating modern technologies and sustainable practices. This makes it a significant and impactful contribution to international development efforts in Africa's agricultural sector. Korea can provide policy consulting services at each stage of the value chain. Key findings include the following:

Firstly, support for establishing a multi-purpose agricultural cooperative system is crucial. Agriculture, unlike other industries such as manufacturing, is characterized by seasonality and high uncertainty (risk). Moreover, since production activities are primarily carried out by individual farmers or smallholders with weak market bargaining power, cooperatives that can collectively address these issues are essential. Although cooperatives have existed in Africa since the colonial era, their scope of activities has been limited, failing to achieve economies of scale in transactions and enhanced market bargaining power. It is reported that only 5% of agricultural products in Africa are sold through cooperatives, based on market prices.<sup>26)</sup>

Resolving the complexities of financial access is the most critical task for agricultural development in Africa. Many African farmers find it extremely difficult to obtain loans from formal financial institutions, such as commercial banks, which often require collateral. Less than 10% of farmers in Africa have access to financial markets, and even then, interest rates often exceed 20%, complicating the economics of agriculture.<sup>27)</sup> African financial institutions are generally reluctant to lend to farmers due to perceived default risks. Currently, the proportion of agricultural loans from African commercial banks is only 5-10%, and even this is predominantly limited to plantations and large-scale farms.

Considering the structural problems of African agricultural cooperatives, partial improvement measures — such as enhancing governance or increasing transparency — are insufficient to address the underlying issues. There is a need to establish a comprehensive agricultural cooperative system that integrates economic and credit services, similar to the model used by Korean agricultural cooperatives. These cooperatives have driven agricultural development by providing all essential functions for their members, including purchasing, sales, education, and credit services. Korean agricultural cooperatives are highly regarded for creating a virtuous cycle of agricultural development through Agricultural Value Chain Finance (AVCF), which encompasses agricultural input suppliers, farmers, processors, and distributors/retailers.

Secondly, support for agricultural input policies, especially regarding fertilizers and seed development, is crucial. Given factors such as Africa's population exceeding one billion, the fastest population growth rate in the world, increased agricultural consumption due to urbanization and rising incomes, and low agricultural productivity, it is essential to dramatically

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26) EURICSE, [www.euricse.eu/wp-content/uploads/2017/03](http://www.euricse.eu/wp-content/uploads/2017/03) (Accessed on 2 September, 2024).

27) TRADING ECONOMICS, 'Bank Lending Rate | Africa,' <https://tradingeconomics.com/country-list/bank-lending-rate?continent=africa> (Accessed on 15 September, 2024).

increase production per unit of land, or soil productivity. This requires the development of high-yielding varieties and an expansion of fertilizer distribution. Policies should support the establishment of regional production systems to enhance fertilizer distribution.

To improve soil productivity, maintaining soil fertility through appropriate fertilizer application is vital. Currently, African farmers apply only 15 kg of fertilizer per hectare, significantly lower than the amounts used in Southeast Asia, Latin America, and even South Asia (104 kg), regions with similar income levels.<sup>28)</sup> African countries have abundant raw materials for fertilizer production; therefore, policies should aim to establish fertilizer production systems within Africa by attracting private enterprises and securing support from international financial institutions like the World Bank. Additionally, support for seed development through institutions such as the Africa Rice Center is necessary. Increasing agricultural productivity requires using improved seed varieties in conjunction with sufficient fertilizer.

While non-agricultural sectors, like manufacturing, can often skip complex R&D processes through technology transfer from abroad, the agricultural sector necessitates local research, development, experimentation, and dissemination. This need underscores the importance of government involvement and active intervention. African countries cultivate at least eight staple crops and feature diverse cropping systems and small market sizes, making it challenging to simply apply foreign seed development technologies in Africa.

Thirdly, there is a need to support processing and quality control policies through a post-harvest batch processing system. In Africa, inadequate post-harvest management leads to significant quantitative and qualitative losses in agricultural products. The post-harvest loss (PHL) rate for rice produced in Africa is as high as 30-50%, with entire harvested grain crops often rotting in the fields due to rain or being discarded because of mold

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28) IFA, <https://www.fertilizer.org> (Accessed on 15 June, 2024).

during storage.<sup>29)</sup> This situation arises from a lack of storage facilities and technology, forcing farmers to endure substantial losses of agricultural products.

To address this, policies supporting post-harvest batch processing systems, such as the Rice Processing Complex (RPC), which consolidates post-harvest storage and processing, are essential. Rice processing plants, which are large-scale storage and processing facilities equipped with modern technology, can only operate profitably and continuously when sufficient quantities of rice are secured. Therefore, promoting these facilities alongside small-scale storage solutions is necessary. Given that agricultural products are often produced in small quantities and collection conditions are suboptimal, establishing large rice processing plants in rural areas is challenging. Thus, policies should support the creation of small-scale drying and storage facilities for these farms (Table 3.7).

**Table 3.7. Korea's Policy Consulting Approach for Improving Africa's Agricultural Value Chain**

Input Supply Stage	<p>〈Seed Improvement and Distribution System〉</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Development and distribution of Tongil rice in the 1960s-70s</li> <li>- Application to Africa: Support for developing and distributing climate-appropriate varieties</li> </ul>
	<p>〈Fertilizer Industry Development〉</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Establishment of fertilizer factories and government-led distribution in the 1960s</li> <li>- Application to Africa: Consultancy on establishing regional fertilizer production facilities and distribution systems</li> </ul>
	<p>〈Agricultural Machinery Supply and Maintenance〉</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Expansion of agricultural machinery supply and after-sales service system in the 1970s</li> <li>- Application to Africa: Development of small-scale machinery supply and maintenance training programs</li> </ul>

29) APHIS, <https://www.aphis.net/en> (Accessed on 20 June, 2024).

**Table 3.7. Continued**

Production Stage	<p>⟨Agricultural Technology Extension System⟩</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Technology dissemination system centered on the Rural Development Administration</li> <li>- Application to Africa: Support for establishing locally appropriate agricultural technology extension systems</li> </ul>
	<p>⟨Irrigation Facility Expansion⟩</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Large-scale irrigation projects in the 1970s</li> <li>- Application to Africa: Consultancy on small-scale irrigation facilities and water management techniques</li> </ul>
	<p>⟨Cooperative Development⟩</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Establishment of agricultural cooperative system since the 1960s</li> <li>- Application to Africa: Transfer of knowledge on establishing and operating local cooperatives</li> </ul>
Post-Harvest Management and Processing Stage	<p>⟨Post-Harvest Management Techniques⟩</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Development and dissemination of post-harvest technologies since the 1980s</li> <li>- Application to Africa: Development of crop-specific post-harvest management techniques and training programs</li> </ul>
	<p>⟨Agricultural Processing Industry Promotion⟩</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Expansion of agricultural processing industry since the 1990s</li> <li>- Application to Africa: Transfer of know-how on establishing and operating small-scale processing facilities</li> </ul>
Distribution and Marketing Stage	<p>⟨Agricultural Product Distribution System Improvement⟩</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Modernization of agricultural wholesale markets in the 1990s</li> <li>- Application to Africa: Consultancy on establishing regional agricultural collection centers and wholesale markets</li> </ul>
	<p>⟨Quality Management and Standardization System⟩</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Establishment of agricultural product quality management and certification system in the 2000s</li> <li>- Application to Africa: Support for developing locally appropriate agricultural product quality standards and certification systems</li> </ul>
Policy and Institutional Support	<p>⟨Agricultural Finance System Establishment⟩</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Agricultural finance system centered on agricultural cooperatives</li> <li>- Application to Africa: Consultancy on introducing microfinance and agricultural insurance systems</li> </ul>
	<p>⟨Agricultural R&amp;D System Establishment⟩</p> <ul style="list-style-type: none"> <li>- Korea's Experience: Agricultural research and development system centered on the Rural Development Administration</li> <li>- Application to Africa: Support for strengthening local agricultural research institutions and establishing industry-academia-research cooperation systems</li> </ul>

Source: Park *et al.* (2019), *An Analysis of Africa's Agricultural Value Chain and Lessons from Korea's Agricultural Development Experience*, KIEP.



Through this policy consulting, African countries can enhance the efficiency and productivity of their entire agricultural value chain, promoting sustainable development in the agricultural sector. While Korea's experience can serve as an important reference, it is crucial to ultimately develop unique development models tailored to the specific situations of each African country.

### **3. Environmental Sector: Climate Change, Desertification and Deforestation**

#### **3-1. The Seriousness of Environmental Challenges in Africa**

Africa faces severe environmental challenges exacerbated by climate change, including desertification, deforestation, and loss of agricultural land. These issues threaten the continent's ecological stability, economic development, and the livelihoods of millions of people. Table 3.8 below is a detailed analysis of the seriousness of these problems, supported by credible sources. The environmental problems in Africa are reminiscent of a 'domino effect. This is because one environmental problem is not confined to a specific area, but rather spreads to other sectors like an infectious disease, causing another environmental problem. Africa is heavily dependent on the 'natural economy' and lacks 'environmental management capabilities', leaving it helpless against various 'environmental risks'.

Environmental issues in Africa progress through various pathways in a chain reaction, directly affecting the lives of people. For example, climate change causes environmental disasters such as drought, soil degradation, desertification, and water resource depletion. This, in turn, leads to a decrease in food production, resulting in famine, malnutrition, and deepening poverty. It can even develop into political unrest, such as food

**Table 3.8. Environmental Challenges in Africa and International Support**

Areas	Environmental Challenges	International Supports
Climate Change	<ul style="list-style-type: none"> <li>- Africa is particularly vulnerable to climate change due to its high exposure and low adaptive capacity. Key impacts include:</li> <li>- Temperature increase: Warming at a rate faster than the global average</li> <li>- Rainfall variability: Increased frequency of droughts and floods</li> <li>- Sea-level rise: Threatening coastal areas and small islands</li> </ul>	<ul style="list-style-type: none"> <li>- Green Climate Fund (GCF): Providing finance for adaptation and mitigation projects</li> <li>- Africa Adaptation Initiative (AAI): Enhancing action on adaptation and addressing loss and damage</li> <li>- African Development Bank's Africa NDC Hub: Supporting implementation of Nationally Determined Contributions</li> </ul>
Desertification	<ul style="list-style-type: none"> <li>- Desertification affects about 45% of Africa's land area, particularly in the Sahel, Horn of Africa, and Southern Africa. Key aspects include:</li> <li>- Soil degradation: Loss of fertile topsoil due to wind and water erosion</li> <li>- Vegetation loss: Reduction in plant cover, leading to further soil exposure</li> <li>- Water scarcity: Depletion of water resources in arid and semi-arid regions</li> </ul>	<ul style="list-style-type: none"> <li>- UN Convention to Combat Desertification (UNCCD): Great Green Wall Initiative</li> <li>- World Bank's Sahel and West Africa Program (SAWAP)</li> <li>- FAO's Action Against Desertification program</li> </ul>
Deforestation	<ul style="list-style-type: none"> <li>- Africa lost about 3.9 million hectares of forest area annually between 2010 and 2020. Major drivers include:</li> <li>- Agricultural expansion: Clearing forests for cropland and pasture</li> <li>- Fuelwood extraction: Unsustainable harvesting for energy needs</li> <li>- Logging: Both legal and illegal timber extraction</li> </ul>	<ul style="list-style-type: none"> <li>- UN-REDD Program: Reducing Emissions from Deforestation and Forest Degradation</li> <li>- World Bank's Forest Carbon Partnership Facility</li> <li>- African Forest Landscape Restoration Initiative (AFR100)</li> </ul>
Agricultural Land Loss	<ul style="list-style-type: none"> <li>- Africa is experiencing significant loss and degradation of agricultural land due to:</li> <li>- Soil erosion: Loss of topsoil due to wind and water action</li> <li>- Nutrient depletion: Intensive farming without adequate replenishment</li> <li>- Urbanization: Conversion of farmland to urban areas</li> </ul>	<ul style="list-style-type: none"> <li>- FAO's Global Soil Partnership</li> <li>- World Bank's Landscape Approach projects</li> <li>- African Union's Comprehensive Africa Agriculture Development Program (CAADP)</li> </ul>

Source: Park *et al.* (2019), *An Analysis of Africa's Agricultural Value Chain and Lessons from Korea's Agricultural Development Experience*, KIEP.

riots. This is why environmental issues should be considered important in Africa’s development cooperation. Table 3.9 illustrates how environmental problems in Africa affect other areas through different pathways.

Desertification leads to the loss of arable land, reducing agricultural productivity and food security. The African Union estimates that desertification costs the continent approximately \$9 billion annually in lost agricultural productivity. Approximately 485 million people in Africa are affected by desertification, leading to increased poverty, migration, and conflict over scarce resources.<sup>30)</sup> Deforestation in Africa is occurring at alarming rates. The continent lost about 3.9 million hectares of forest per year between 2010 and 2020, according to the Food and Agriculture Organization (FAO). Forests in Africa are home to a vast array of biodiversity. Deforestation threatens many species with extinction and disrupts ecosystems that local communities depend on for food, medicine, and livelihoods. Forests act as carbon sinks, absorbing CO<sub>2</sub> from the atmosphere. The loss of forests contributes to increased carbon emissions, accelerating climate change.

**Table 3.9. Major impacts of Environmental issues in Africa**

Environmental Risk	Impact Pathway
Desertification	1) Decrease in agricultural production → Food shortages, increase in hunger population → Soaring food prices (threatening food security) → Political and social instability 2) Decrease in agricultural production → Food shortage → Malnutrition → Increase in mortality rate 3) Decrease in farmland → Forest clearing (logging) → Deforestation → Destruction of natural ecosystem
Water Scarcity	Civil wars and conflicts between countries over water resources → Regional instability
Deforestation	Global warming → Abnormal temperature → Unstable crop conditions and decrease in food production

Source: Authors compiled from various sources.

<sup>30)</sup> Chatham (2023), “Deforestation in Africa,” <https://www.chathamhouse.org/2023/05/deforestation-africa> (Accessed on 20 July, 2024).

## **3-2. Korea's Recommended ODA Directions to Environmental Issues**

Utilizing Korean ICT for environmental monitoring and management in Africa can leveraging Korea's technological strengths, particularly in ICT, for environmental monitoring and management in Africa presents a significant opportunity for addressing the continent's pressing environmental challenges. Korea's advanced capabilities in areas such as remote sensing, IoT, mobile technology, and data analytics can be particularly valuable in the African context, where environmental issues are complex and often interconnected. For instance, Korean satellite technology and remote sensing capabilities could be used to monitor deforestation, land degradation, and changes in water resources across large areas of Africa. This kind of broad-scale monitoring is crucial for understanding and addressing issues like desertification and loss of biodiversity. In urban areas, Korean expertise in smart city technologies could be applied to monitor air and water quality in real-time, helping African cities to better manage pollution and improve public health. IoT sensors, combined with mobile networks, could provide early warning systems for environmental hazards like flooding or pollution spikes.

However, it's crucial to recognize that implementing these technologies in Africa comes with significant challenges. Many areas lack reliable electricity and internet connectivity, which are prerequisite for many high-tech solutions. There's also the question of cost and accessibility – ensuring that these technologies are affordable and usable for African environmental agencies and communities is essential. To be truly effective, any technological solutions need to be adapted to local contexts. This might mean developing more rugged, low-power devices for use in remote areas, or creating interfaces that work in multiple African languages. It also requires significant investment in training and capacity building to ensure that local agencies and communities can effectively use and maintain these

technologies. Despite these challenges, the potential impact of leveraging Korean ICT for environmental management in Africa is substantial. It could significantly enhance the ability of African countries to monitor and respond to environmental changes, support more effective resource management, and improve climate change mitigation and adaptation efforts. While leveraging Korean ICT for environmental monitoring and management in Africa is not without its challenges, it presents a valuable opportunity to address critical environmental issues. Success will depend on thoughtful implementation that considers local contexts, builds local capacity, and ensures long-term sustainability.

Sharing Korea's experience in development and environmental management with Africa will address environmental challenges for African nations. The key lies in Korea's journey from a war-torn, impoverished nation to an economic powerhouse, and how it navigated the environmental challenges that came with rapid industrialization. Korea's experience demonstrates that economic development and environmental protection are not mutually exclusive. Initially, Korea prioritized economic growth over environmental concerns, leading to severe pollution problems. However, as public awareness grew and the negative impacts became apparent, Korea shifted towards a more balanced approach. For example, Korea's successful reforestation program, which increased forest cover from 35% to 64% between the 1950s and 1980s, is especially relevant for African countries battling deforestation and desertification.<sup>31)</sup> The strategies and policies used in this program could be adapted to African contexts. This transition offers important lessons for African countries on how to pursue economic growth while minimizing environmental degradation.

The evolution of Korea's environmental policies provides a roadmap for African nations. Korea's journey from having virtually no environmental regulations to implementing comprehensive environmental laws and

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31) Korea Forest Service - Forest In Korea, Korean Forests at a Glance (Accessed on 25 July, 2024).

establishing dedicated agencies like the Ministry of Environment showcases the importance of robust policy frameworks. African countries can learn from this gradual but steady policy development process. Korea's experience in fostering public awareness and participation in environmental issues is crucial. The role of civil society and public education in driving environmental improvements in Korea offers lessons on how to engage African populations in environmental protection. However, it's crucial to recognize that Korea's experiences cannot be directly transplanted to Africa. The continent's diverse environmental, economic, and social contexts require careful adaptation of Korean lessons. Furthermore, many African countries face resource constraints that Korea did not, necessitating innovative and cost-effective solutions.

Korea could (1) Establish knowledge-sharing platforms and exchange programs for policymakers and environmental experts (2) Provide technical assistance in areas like environmental policy development and implementation (3) Support joint research initiatives to adapt Korean solutions to African contexts (4) Share experiences in public education and awareness campaigns on environmental issues.

Training and education to develop local expertise in environmental management is a critical component of Korea's potential contribution to Africa's sustainable development. This approach recognizes that long-term environmental improvements depend on building local knowledge, skills, and institutions. Korea's own experience in rapidly developing environmental expertise during its economic growth provides valuable insights for this process. While Korea can share its experiences, it's crucial to adapt the training to African contexts. This might involve focusing on specific environmental challenges prevalent in Africa, such as desertification or sustainable forest management.

Korea's success in environmental management often came through learning-by-doing. Similarly, capacity building programs for Africa should emphasize practical, hands-on experiences. This could involve demonstration

projects, where Korean experts work alongside African counterparts on real environmental challenges. Beyond individual skills, it's important to build the capacity of African institutions. This could involve supporting the development of environmental research centers, helping to establish environmental monitoring networks, or advising on the structure of environmental ministries.

Korea's expertise in information and communication technology can be used to enhance capacity building efforts. This might include e-learning platforms, mobile apps for environmental monitoring, or the use of big data in environmental management. Effective capacity building requires long-term commitment. Establishing lasting partnerships between Korean and African institutions, such as university exchange programs or joint research initiatives, can provide ongoing support and knowledge transfer. Korea's experience with public participation in environmental initiatives can inform training on how to engage local communities in environmental management. This is crucial for ensuring the sustainability of environmental efforts. By focusing on these aspects of capacity building, Korea can help African nations develop the local expertise needed to address their environmental challenges effectively. This approach not only transfers knowledge but also empowers African nations to develop their own innovative solutions to environmental issues, tailored to their unique contexts and needs.

The ultimate goal should be to enable African countries to independently manage their environmental challenges, develop and implement effective policies, and participate actively in global environmental initiatives. This capacity-building approach can serve as a cornerstone of Korea's development cooperation with Africa, contributing to sustainable development and strengthening diplomatic ties (Table 3.10).

**Table 3.10. Korea's Recommended ODA to Environmental Sector**

Climate Change	<ul style="list-style-type: none"><li>- Technology transfer for renewable energy (solar, wind)</li><li>- Capacity building for climate-resilient agriculture</li><li>- Support for climate change monitoring and early warning systems</li></ul>
Desertification	<ul style="list-style-type: none"><li>- Sharing Korea's forest restoration experience</li><li>- Supporting sustainable land management practices</li><li>- Providing water-efficient irrigation technologies</li></ul>
Deforestation	<ul style="list-style-type: none"><li>- Supporting community-based forest management</li><li>- Providing satellite monitoring technology for forest cover</li><li>- Promoting agroforestry and sustainable forestry practices</li></ul>
Agricultural Land Loss	<ul style="list-style-type: none"><li>- Sharing Korea's land reclamation and soil restoration techniques</li><li>- Supporting climate-smart agriculture practices</li><li>- Providing training on sustainable soil management</li></ul>

Source: Authors compiled information from various sources.

## **4. Urban Transportation: Intelligent Transportation Systems (ITS)**

### **4-1. African Urbanization: Traffic Congestion, Pedestrian Safety, and ITS Solutions**

The rapid urbanization in Africa is creating significant challenges in terms of traffic congestion and pedestrian safety. As cities grow at unprecedented rates, existing infrastructure is struggling to cope with the increasing number of vehicles and pedestrians. Traffic congestion has become a major issue in many African cities. The rapid increase in vehicle ownership, coupled with insufficient road infrastructure and poor traffic management, has led to gridlocked streets, especially during peak hours. This congestion not only results in economic losses due to wasted time and fuel but also contributes to increased air pollution and reduced quality of life for urban residents.

Pedestrian safety is another critical concern. African cities often lack



dedicated pedestrian infrastructure such as sidewalks and safe crossing points. This, combined with poor enforcement of traffic rules and limited awareness of road safety, has led to high pedestrian fatality rates. Vulnerable

**Table 3.11. ITS Solutions for Africa's Urbanization Challenges**

Africa's Rapid Urbanization	<ol style="list-style-type: none"> <li>1) Current Trends <ul style="list-style-type: none"> <li>- Africa's urban population expected to triple by 2050</li> <li>- Urban growth rate of 3.5% per year, highest globally</li> <li>- Over 40% of Africans now live in urban areas</li> </ul> </li> <li>2) Challenges of Rapid Urbanization <ul style="list-style-type: none"> <li>- Unplanned urban sprawl</li> <li>- Inadequate infrastructure development</li> <li>- Increasing pressure on existing transportation systems</li> </ul> </li> </ol>
Traffic Congestion in African Cities	<ol style="list-style-type: none"> <li>1) Causes <ul style="list-style-type: none"> <li>- Rapid increase in vehicle ownership</li> <li>- Insufficient road infrastructure</li> <li>- Lack of efficient public transportation systems</li> <li>- Poor traffic management</li> </ul> </li> <li>2) Impacts <ul style="list-style-type: none"> <li>- Economic losses due to wasted time and fuel</li> <li>- Increased air pollution and carbon emissions</li> <li>- Reduced quality of life for urban residents</li> </ul> </li> </ol>
Pedestrian Safety Concerns	<ol style="list-style-type: none"> <li>1) Key Issues <ul style="list-style-type: none"> <li>- High pedestrian fatality rates in urban areas</li> <li>- Lack of dedicated pedestrian infrastructure</li> <li>- Poor enforcement of traffic rules</li> <li>- Limited awareness of road safety among road users</li> </ul> </li> <li>2) Vulnerable Groups <ul style="list-style-type: none"> <li>- Children and the elderly at higher risk</li> <li>- Low-income communities often more exposed to dangers</li> </ul> </li> </ol>
ITS Solutions for African Urban Challenges	<ol style="list-style-type: none"> <li>1) Traffic Management Systems <ul style="list-style-type: none"> <li>- Real-time traffic monitoring and control</li> <li>- Adaptive traffic signal control</li> </ul> </li> <li>2) Public Transportation Enhancement <ul style="list-style-type: none"> <li>- Bus Rapid Transit (BRT) systems with ITS integration</li> <li>- Real-time passenger information systems</li> <li>- Electronic fare collection systems</li> </ul> </li> <li>3) Pedestrian Safety Measures <ul style="list-style-type: none"> <li>- Smart pedestrian crossing systems</li> <li>- Pedestrian detection and warning systems</li> <li>- Speed enforcement cameras in high-risk areas</li> </ul> </li> </ol>

Source: Authors compiled information from various sources.

groups such as children, the elderly, and low-income communities are particularly at risk. As described in Table 3.11, ITS offer a range of solutions to address these challenges. ITS can provide real-time traffic monitoring and control, allowing for adaptive traffic signal control and dynamic lane management. This can significantly improve traffic flow and reduce congestion. ITS can support the implementation of efficient public transport systems like Bus Rapid Transit (BRT), with features such as real-time passenger information and electronic fare collection. This can encourage a shift from private vehicles to public transport, reducing overall congestion.

While the challenges of urbanization in Africa are significant, ITS offers a promising set of tools to address issues of traffic congestion and pedestrian safety. By leveraging these technologies and adapting them to local contexts, African cities can work towards more efficient, safer, and more sustainable urban transportation systems.

## **4-2. Korea-Africa ITS Cooperation Strategies**

Korea's focus on building an ITS in urban transportation infrastructure is driven by the need to reduce traffic congestion, improve safety, achieve environmental benefits, and enhance operational efficiency. Through comprehensive cooperation plans involving knowledge transfer, joint R&D, infrastructure development, policy support, and public engagement, Korea can effectively contribute to the development of sustainable and efficient urban transport systems in Africa. This collaborative approach not only addresses current transportation challenges but also lays the groundwork for future advancements in smart city technologies (Table 3.12).

**Table 3.12. Korea-Africa ITS Cooperation Strategies**

<p>Reasons for Korea's Focus on ITS</p>	<ol style="list-style-type: none"> <li>1) Korea's Technological Advantage <ul style="list-style-type: none"> <li>- World-class ITS technology</li> <li>- Experience in integrating with ICT infrastructure</li> </ul> </li> <li>2) Addressing Africa's Rapid Urbanization <ul style="list-style-type: none"> <li>- Need to solve traffic congestion problems</li> <li>- Demand for efficient traffic management systems</li> </ul> </li> <li>3) Economic Benefits <ul style="list-style-type: none"> <li>- Opportunities for Korean companies to expand overseas</li> <li>- Cost-effective transportation infrastructure for African countries</li> </ul> </li> <li>4) Contributing to Sustainable Development <ul style="list-style-type: none"> <li>- Reducing carbon emissions and increasing energy efficiency</li> <li>- Foundational technology for smart city implementation</li> </ul> </li> </ol>
<p>Korea-Africa ITS Cooperation Strategies</p>	<ol style="list-style-type: none"> <li>1) Technology Transfer and Education <ul style="list-style-type: none"> <li>- Providing education programs on ITS design and operation</li> <li>- Long-term training plans for local expert development</li> </ul> </li> <li>2) Customized Solution Development <ul style="list-style-type: none"> <li>- ITS design considering characteristics of each African city</li> <li>- Building systems suitable for local infrastructure and technology levels</li> </ul> </li> <li>3) Pilot Project Implementation <ul style="list-style-type: none"> <li>- Conducting ITS pilot projects in major African cities</li> <li>- Expanding to other regions based on success cases</li> </ul> </li> </ol>
<p>Expected Outcomes</p>	<ol style="list-style-type: none"> <li>1) For Africa <ul style="list-style-type: none"> <li>- Reducing traffic congestion and improving mobility</li> <li>- Decreasing traffic accidents and enhancing safety</li> <li>- Reducing environmental pollution and increasing energy efficiency</li> <li>- Laying foundations for smart city implementation</li> </ul> </li> <li>2) For Korea <ul style="list-style-type: none"> <li>- Expanding overseas markets for ITS technology</li> <li>- Enhancing status in international development cooperation</li> <li>- Increasing influence in African markets</li> </ul> </li> </ol>

Source: Authors compiled information from various sources.

Korea's focus on ITS in its cooperation with Africa holds several strategic implications. Firstly, Korea possesses world-class ITS technology, which can be applied in Africa for technology export and economic benefits. Korean ITS technology has proven effective in improving traffic flow, enhancing safety, and reducing environmental impact. Second, ITS can provide an effective solution to traffic problems caused by Africa's rapid urbanization. Many African cities face serious issues of traffic congestion,

safety concerns, and air pollution, and ITS offers a cost-effective way to address these problems. Third, ITS implementation goes beyond simple traffic system improvement to serve as a foundation technology for smart city realization. Korea's ITS technology support can contribute to the long-term urban development plans of African countries. Cooperation strategies can include three main areas. Firstly, technology transfer and education will be crucial components in the cooperation between Korea and Africa in the field of ITS. Korea can provide comprehensive education programs on ITS design, implementation, and operation, ranging from short-term training to long-term degree programs. The technology transfer and education strategy should cover all aspects of ITS, from system design and implementation to operation and maintenance. This ensures that African countries can manage the entire lifecycle of ITS projects.

Secondly, customized solution development in ITS solutions tailored to the characteristics and needs of each African city, considering local infrastructure conditions, technological levels, and financial capabilities. While Korea has advanced ITS technologies, it's crucial to adapt these to the African context. This involves understanding local transportation challenges, infrastructure limitations, and cultural factors that might affect ITS implementation.

Thirdly, ITS pilot projects in major African cities to demonstrate their effectiveness and use these as a basis for expansion to other regions. Pilot Project Implementation is a crucial step in introducing Korean ITS technologies to African urban environments. These projects serve as proving grounds for the effectiveness and adaptability of ITS solutions in the unique contexts of African cities. Well-designed and executed pilot projects can serve as powerful demonstrations of the potential of ITS in African cities. They provide a platform for learning, adaptation, and capacity building, paving the way for more extensive ITS implementations that can significantly improve urban mobility across the continent.

This cooperation can provide African countries with benefits such as

reduced traffic congestion, improved safety, and environmental improvements, while offering Korea advantages in technology export and enhanced status in international development cooperation. However, to successfully pursue this cooperation, challenges such as lack of infrastructure, funding issues, and technology gaps need to be overcome. This will require a phased approach, provision of diverse financing options, continuous education and training, and policy support.

## **5. Supporting Industrialization through TVET Program**

### **5-1. African Industrial Workforce Demand**

This analysis highlights the significant demand for a skilled industrial workforce in Africa and outlines Korea's strategy for Technical and Vocational Education and Training (TVET) Official Development Assistance (ODA) to address this need. Africa's young and rapidly growing population presents both challenges and opportunities. In 2015, there were 226 million youth aged 15-24, and this number is expected to increase by 42% by 2030. This rapid growth creates an urgent need to generate employment opportunities and equip the workforce with relevant skills. The high youth unemployment rate of 10.6% in 2021 underscores the gravity of this challenge (Table 3.13 and Table 3.14).<sup>32)</sup>

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32) ILO (2024), "World Employment and Social Outlook," <https://www.ilo.org/publications/flagship-reports/world-employment-and-social-outlook-trends-2024> (Accessed on 25 July, 2024).

**Table 3.13. Analysis of Industrial Workforce Demand in Africa**

Current Workforce Landscape	<ul style="list-style-type: none"> <li>- Youth population (15–24 years): 226 million (2015), expected to increase by 42% by 2030</li> <li>- Youth unemployment rate: 10.6% (2021), significantly higher than the global average</li> <li>- Informal employment: 85.8% of total employment</li> </ul>
Key Drivers of Workforce Demand	<ul style="list-style-type: none"> <li>- Rapid urbanization: 50% of Africans expected to live in urban areas by 2030</li> <li>- Digital transformation: Growing demand for ICT skills</li> <li>- Regional integration: African Continental Free Trade Area (AfCFTA) creating new opportunities</li> <li>- Green economy transition: Increasing demand for skills in renewable energy and sustainable industries</li> </ul>
Skills Gap	<ul style="list-style-type: none"> <li>- 58% of African employers cite inadequately skilled workforce as a major constraint</li> <li>- Only 1% of African university graduates major in agriculture, despite its economic importance</li> </ul>

Source: African Development Bank (AfDB) (2023), “What is the Jobs for Youth in Africa Strategy?” <https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/jobs-for-youth-in-africa/what-is-the-jobs-for-youth-in-africa-strategy> (Accessed on 15 July, 2024); ILO (2024), “World Employment and Social Outlook,” <https://www.ilo.org/publications/flagship-reports/world-employment-and-social-outlook-trends-2024> (Accessed on 25 July, 2024); World Bank (2022), “The Future of Work in Africa,” <https://www.worldbank.org/en/region/afr/publication/africa-future-of-work> (Accessed on 25 July, 2024).

**Table 3.14. Promising Sectors for Industrial Development**

Agriculture and Agribusiness	<ul style="list-style-type: none"> <li>- Potential to create 14 million jobs by 2030</li> <li>- Focus areas: Food processing, cold chain logistics, agricultural technology</li> </ul>
Manufacturing	<ul style="list-style-type: none"> <li>- Potential to create up to 8 million jobs by 2030</li> <li>- Focus areas: Light manufacturing, textiles, automotive assembly</li> </ul>
Information and Communication Technology (ICT)	<ul style="list-style-type: none"> <li>- Digital economy could contribute \$180 billion to Africa’s GDP by 2025</li> <li>- Focus areas: Software development, digital services, e-commerce</li> </ul>
Renewable Energy	<ul style="list-style-type: none"> <li>- Potential to create up to 12 million jobs by 2030</li> <li>- Focus areas: Solar panel installation, wind turbine maintenance, energy efficiency</li> </ul>
Infrastructure Development	<ul style="list-style-type: none"> <li>- \$130–\$170 billion annual investment need</li> <li>- Focus areas: Construction, project management, urban planning</li> </ul>

Source: McKinsey & Company (2016), “Lions on the move II: Realizing the potential of Africa’s economies”; IRENA, “Renewable Energy and Jobs – Annual Review 2020.”

Several sectors show promise for industrial development and job creation in Africa:<sup>33)</sup>

## 1) Agriculture and Agribusiness

With potential to create 14 million jobs by 2030, this sector remains crucial for Africa's development. Focus areas include food processing, cold chain logistics, and agricultural technology. The Agriculture and Agribusiness sector in Africa presents significant opportunities for industrial workforce development, driven by the sector's economic importance and potential for growth. Currently, agriculture accounts for about 15% of Africa's GDP and employs 60-65% of the labor force (AfDB 2016). However, the sector faces productivity challenges, with cereal yields significantly lower than the global average and high post-harvest losses (World Bank 2020; FAO 2019).

The African food market is projected to reach \$1 trillion by 2030, with the agribusiness sector expected to match this value (World Bank 2013). This growth, coupled with increasing technology adoption in agriculture, is driving demand for a skilled workforce across various sub-sectors.

There's a growing demand for skilled farm managers, agronomists, and agricultural technicians. It's estimated that by 2030, Africa will need 200,000-250,000 skilled farm managers and about 100,000 new agronomists. As Africa moves towards value addition in agriculture, there's increasing demand for food technologists, quality control specialists, and supply chain managers. The sector could create 50,000-70,000 new jobs for food technologists and 80,000-100,000 positions for quality control specialists by 2030. Agricultural Technology (AgTech), with the rise of precision agriculture and digital farming, there's a growing need for precision agriculture specialists, data analysts, and agri-drone operators. It's projected that 30,000-50,000 new positions for precision agriculture specialists could be created by 2030.

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33) McKinsey & Company (2016); IRENA (2020).

**Table 3.15. Agriculture and Agribusiness Workforce Demand in Africa**

Current State of Agriculture and Agribusiness in Africa	<p>⟨Economic Significance⟩</p> <ul style="list-style-type: none"> <li>- Agriculture accounts for about 15% of Africa’s GDP</li> <li>- Employs 60–65% of the African labor force</li> <li>- Contributes about 25% of the continent’s foreign exchange earnings</li> </ul> <p>⟨Productivity Challenges⟩</p> <ul style="list-style-type: none"> <li>- Cereal yield: 1,475 kg per hectare (Africa) vs. 4,070 kg per hectare (global average)</li> <li>- Only 5.5% of agriculture is under irrigation</li> <li>- Post-harvest losses estimated at 30–40% of total production</li> </ul>
Future Projections and Opportunities	<p>⟨Market Growth⟩</p> <ul style="list-style-type: none"> <li>- African food market projected to reach \$1 trillion by 2030</li> <li>- Agribusiness sector expected to be worth \$1 trillion by 2030</li> </ul> <p>⟨Technology Adoption⟩</p> <ul style="list-style-type: none"> <li>- Precision agriculture market in Africa expected to grow at a CAGR of 16% from 2021 to 2026</li> <li>- E-agriculture initiatives increasing, with potential to reach 100 million farmers by 2030</li> </ul>
Workforce Needs	<p>⟨Agricultural Production⟩</p> <ul style="list-style-type: none"> <li>- Skilled farm managers, Agronomists, Agricultural technicians</li> </ul> <p>⟨Agro-processing⟩</p> <ul style="list-style-type: none"> <li>- Food technologists, Quality control specialists, Supply chain managers</li> </ul> <p>⟨Agricultural Technology (AgTech)⟩</p> <ul style="list-style-type: none"> <li>- Precision agriculture specialists, Data analysts for agriculture, Agri-drone operators and technicians</li> </ul> <p>⟨Agribusiness Management⟩</p> <ul style="list-style-type: none"> <li>- Agribusiness managers, Agricultural finance specialists, Agricultural marketing experts</li> </ul>
Key Areas for Workforce Development	<p>⟨Sustainable Farming Practices⟩</p> <ul style="list-style-type: none"> <li>- Climate-smart agriculture techniques</li> <li>- Conservation agriculture methods</li> <li>- Organic farming practices</li> </ul> <p>⟨Value Addition and Processing⟩</p> <ul style="list-style-type: none"> <li>- Food processing technologies</li> <li>- Packaging and preservation methods</li> <li>- Quality assurance and food safety</li> </ul> <p>⟨Digital Agriculture⟩</p> <ul style="list-style-type: none"> <li>- Precision farming techniques</li> <li>- Agricultural data management and analysis</li> <li>- E-commerce and digital marketing for agriculture</li> </ul> <p>⟨Agribusiness and Entrepreneurship⟩</p> <ul style="list-style-type: none"> <li>- Farm business management</li> <li>- Agricultural value chain management</li> </ul>

Source: Mordor Intelligence, “Africa Precision Agriculture Market,” <https://www.mordorintelligence.com/industry-reports/global-precision-farming-market-industry/market-size>; Africa Food Changemaker (AFC), <https://afchub.org/data> (Accessed on 15 July, 2024); African Development Bank (AfDB), “Feed Africa Strategy,” [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Feed\\_Africa-Strategy-En.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Feed_Africa-Strategy-En.pdf) (Accessed on 10 July, 2024).



The expansion of commercial agriculture is driving demand for agribusiness managers, agricultural finance specialists, and marketing experts. An estimated 100,000-150,000 new positions for agribusiness managers could be created by 2030. Work force development include sustainable farming practices, value addition and processing, digital agriculture, and agribusiness management. These areas align with the sector's needs for increased productivity, sustainability, and commercialization (Table 3.15).

However, meeting this workforce demand faces several challenges, including limited access to quality agricultural education, brain drain of skilled professionals, and a mismatch between education curricula and industry needs. In order to meet these challenges and capitalize on the opportunities. It is necessary to strengthen formal agricultural education programs in universities and vocational institutions. Specialized vocational training programs in specific agricultural skills can be organized as it can leveraging digital learning platforms to increase access to agricultural education. Consequently, it will foster industry partnerships to ensure practical, relevant training.

## **2) Manufacturing**

Light manufacturing, textiles, and automotive assembly could create up to 8 million jobs by 2030. The analysis of the Manufacturing sector in Africa reveals a diverse and evolving landscape with significant potential for growth and workforce development. Africa's manufacturing sector is becoming increasingly diverse. While traditional areas like agro-processing and textiles remain important, there's significant growth in more advanced sectors such as automotive and pharmaceuticals. For instance, the pharmaceutical market is projected to reach \$56.5 billion by 2030, indicating substantial opportunities for workforce expansion in this area.

The adoption of Industry 4.0 technologies is accelerating, with the IoT in manufacturing market expected to grow at a CAGR of 26.8% from 2021 to 2026 (Mordor Intelligence 2021). This trend is creating new workforce

demands, particularly for skills in data analysis, IoT, and robotics. There's a growing emphasis on sustainable manufacturing, with renewable energy use and circular economy initiatives increasing. This shift is creating demand for green manufacturing specialists and environmental engineers.

The implementation of the African Continental Free Trade Area (AfCFTA) is boosting intra-African manufacturing trade and fostering the development of regional value chains. This is increasing demand for professionals in supply chain management and trade specialization.

While inadequate infrastructure remains a challenge, significant investments (estimated at \$130-\$170 billion annually, AfDB 2021) are being made. This is driving demand for civil engineers and energy specialists. A significant skills mismatch persists, with 54% of employers citing this as a major constraint. This highlights the critical need for targeted TVET programs and curriculum development.

Countries like Ethiopia, Kenya, and Morocco are emerging as significant manufacturing hubs, each with their own specializations. Ethiopia, for instance, is focusing on textiles and leather, while Morocco is developing strong automotive and aerospace sectors.

The manufacturing sector in Africa has substantial growth potential, with manufacturing value-added projected to reach \$930 billion by 2025 (UNIDO 2020). This growth could create 8 million direct jobs by 2030, emphasizing the sector's importance for workforce development.

In terms of workforce implications, there's a clear need for both technical and managerial skills across various levels. Technical skills are highly demanded for specialists in areas such as food technology, textile engineering, automotive and robotics technology, pharmaceuticals, and data analysis. Managerial skills will increase the efficiency of industries by having specialties on production, supply chain, industrial park management, etc. Emerging Skills: Growing demand for professionals in green manufacturing, IoT, and technology transfer.

To meet these workforce needs, a multi-faceted approach involving

strengthened TVET programs, university-industry partnerships, and continuous upskilling and reskilling initiatives will be crucial. The diversity and dynamism of Africa’s manufacturing sub-sector present both challenges and opportunities for workforce development, requiring adaptive and forward-looking strategies (Table 3.16).

The manufacturing sector in Africa presents a dynamic landscape with substantial potential for job creation and economic growth. By 2030, it’s projected that light manufacturing, textiles, and automotive assembly could collectively generate up to 8 million jobs. Here’s an overview of the current state, opportunities, challenges, and strategies for workforce development in this sector (Table 3.17).

**Table 3.16. Key Manufacturing Sub-sectors**

Sub-sectors	Contents	Source
Agro-processing	<ul style="list-style-type: none"> <li>- Market size: \$230 billion (2020), expected to reach \$345 billion by 2025</li> <li>- Major products: Processed foods, beverages, textiles</li> <li>- Workforce implication: High demand for food technologists, quality control specialists</li> </ul>	Feeding Africa’s Industrial Development (2021)
Textiles and Apparel	<ul style="list-style-type: none"> <li>- Export value: \$2.5 billion (2019)</li> <li>- Key markets: USA (AGOA), EU, China</li> <li>- Workforce implication: Need for skilled garment workers, textile engineers</li> </ul>	UNCTAD, Economic Development in Africa Report 2021
Automotive	<ul style="list-style-type: none"> <li>- Vehicle production: 1.1 million units (2019)</li> <li>- Major hubs: South Africa, Morocco, Egypt</li> <li>- Workforce implication: Demand for automotive technicians, robotics specialists</li> </ul>	OICA, 2019 Production Statistics
Pharmaceuticals	<ul style="list-style-type: none"> <li>- Market size: \$20.8 billion (2020), projected to reach \$56.5 billion by 2030</li> <li>- Local manufacturing: Meets 30% of demand</li> <li>- Workforce implication: High need for pharmacists, biomedical engineers</li> </ul>	McKinsey & Company, Africa’s pharmaceutical market (2021)

Source: UNIDO (2020), “Industrialization in Africa and Least Developed Countries,” Various national economic development plans and reports (Accessed on 25 July, 2024).

**Table 3.17. Emerging Manufacturing Hubs**

Ethiopia	Kenya	Morocco
<ul style="list-style-type: none"> <li>- Focus: Textiles, leather, agro-processing</li> <li>- Industrial parks: 13 operational, 15 under construction</li> <li>- Workforce implication: Need for industrial park managers, logistics specialists</li> </ul>	<ul style="list-style-type: none"> <li>- Focus: Electronics, automotive components, pharmaceuticals</li> <li>- Workforce implication: Demand for electronics technicians, quality assurance specialists</li> </ul>	<ul style="list-style-type: none"> <li>- Focus: Automotive, aerospace, electronics</li> <li>- Tangier Automotive City: 100,000 jobs created</li> <li>- Workforce implication: High demand for aerospace engineers, automotive designers</li> </ul>

Source: UNIDO (2020), “Industrialization in Africa and Least Developed Countries,” Various national economic development plans and reports.

## 5-2. Korea’s TVET ODA Strategy

Korea’s TVET ODA strategy for Africa aims to address the skills gap and support these promising sectors. Firstly, competency-based curricula aligned with industry needs and integrating soft skills and entrepreneurship education. Korea’s approach to TVET curriculum development for Africa, as part of its ODA strategy, is characterized by a strong emphasis on relevance, practicality, and adaptability to local contexts. This approach is rooted in Korea’s own experience of rapid industrialization and the crucial role that TVET played in this process.

Curriculum development starts with a thorough assessment of local labor market needs and industry requirements. This involves close collaboration with African partners to ensure that curricula are relevant to the specific economic and industrial contexts of each country or region. The focus is on developing specific, measurable skills that are directly applicable in the workplace. This approach aligns well with the growing global trend towards competency-based education and training.

A distinctive feature of Korea’s approach is the strong emphasis on industry participation in curriculum development. This can involve establishing industry advisory boards, organizing joint curriculum development

workshops, and incorporating industry placements into the curriculum. While adapting to local contexts, the curricula also incorporate relevant Korean industrial practices and standards, particularly in sectors where Korea has strong expertise, such as ICT, electronics manufacturing, and automotive technology. Recognizing the importance of technology in modern workplaces, Korean TVET curricula typically include strong elements of digital skills and the use of up-to-date technology in training. In addition to technical skills, the curricula developed under Korea's ODA programs often include modules on soft skills, workplace ethics, and basic entrepreneurship. This reflects an understanding of the diverse career paths that TVET graduates in Africa might pursue, including self-employment.

Curricula are often designed in a modular format, allowing for flexibility in learning paths and easier updates as industry needs evolve. The curriculum development process includes the creation of robust assessment tools and quality assurance mechanisms to ensure that training outcomes meet the required standards. To ensure effective delivery of the new curricula, Korea often provides training for local TVET instructors. This includes creating localized textbooks, e-learning content, and setting up appropriate training facilities. New curricula are typically piloted in selected institutions before being rolled out more widely, allowing for adjustments based on initial feedback. The ICT curriculum development project in Rwanda and the automotive technology curriculum in Ghana, demonstrate how these principles are applied in practice. This approach also faces challenges, including the need to balance local relevance with international standards, address language barriers, and ensure the sustainability of curriculum development processes beyond the period of Korean support.

Korea's TVET curriculum development for Africa is likely to see increased use of AI and data analytics in curriculum design, greater focus on emerging industries like renewable energy, and enhanced efforts towards regional harmonization of TVET curricula (Table 3.18).

**Table 3.18. TVET Curriculum Development**

<p>Principles of TVET Curriculum Development</p>	<ol style="list-style-type: none"> <li>1. Competency-Based Approach <ul style="list-style-type: none"> <li>- Focus on specific, measurable skills and knowledge</li> <li>- Emphasis on practical, hands-on learning</li> <li>- Alignment with industry standards and job requirements</li> </ul> </li> <li>2. Labor Market Responsiveness <ul style="list-style-type: none"> <li>- Regular labor market analysis to identify skill needs</li> <li>- Involvement of industry stakeholders in curriculum design</li> <li>- Flexibility to adapt to changing industry trends</li> </ul> </li> <li>3. Modular Structure <ul style="list-style-type: none"> <li>- Division of curriculum into discrete, self-contained units</li> <li>- Allows for flexible learning paths and easier updates</li> <li>- Facilitates recognition of prior learning and credit transfer</li> </ul> </li> <li>4. Integration of Soft Skills <ul style="list-style-type: none"> <li>- Incorporation of communication, teamwork, and problem-solving skills</li> <li>- Emphasis on workplace ethics and professionalism</li> <li>- Development of entrepreneurial mindset</li> </ul> </li> <li>5. Technology Integration <ul style="list-style-type: none"> <li>- Incorporation of relevant technological tools and software</li> <li>- Preparation for digitalization in various industries</li> <li>- E-learning and blended learning approaches</li> </ul> </li> </ol>
<p>Korea's Approach to TVET Curriculum Development</p>	<ol style="list-style-type: none"> <li>1. Needs Assessment and Contextualization <ul style="list-style-type: none"> <li>- Collaborative research with African partners to understand local needs</li> <li>- Adaptation of Korean TVET curricula to African contexts</li> <li>- Consideration of cultural factors and local industry practices</li> </ul> </li> <li>2. Industry-Academia Collaboration <ul style="list-style-type: none"> <li>- Establishment of industry advisory boards for curriculum development</li> <li>- Joint curriculum development workshops with African TVET institutions and local industries</li> <li>- Regular curriculum review and update mechanisms</li> </ul> </li> <li>3. Competency Standards Development <ul style="list-style-type: none"> <li>- Support for developing national competency standards</li> <li>- Alignment of curriculum with these standards</li> <li>- Training for local staff in competency-based curriculum development</li> </ul> </li> <li>4. Integration of Korean Expertise <ul style="list-style-type: none"> <li>- Incorporation of relevant Korean industrial practices and standards</li> <li>- Sharing of Korea's experience in rapid industrial development</li> <li>- Focus on sectors where Korea has strong expertise (e.g., ICT, electronics manufacturing)</li> </ul> </li> <li>5. Innovative Learning Methods <ul style="list-style-type: none"> <li>- Introduction of project-based learning approaches</li> <li>- Integration of simulations and virtual reality in training</li> <li>- Development of mobile learning content for wider accessibility</li> </ul> </li> </ol>

**Table 3.18. Continued**

<p>Key Components of TVET Curriculum</p>	<ol style="list-style-type: none"> <li>1. Theoretical Knowledge               <ul style="list-style-type: none"> <li>- Foundational concepts relevant to the specific vocation</li> <li>- Understanding of industry trends and technological advancements</li> <li>- Safety and regulatory knowledge</li> </ul> </li> <li>2. Practical Skills               <ul style="list-style-type: none"> <li>- Hands-on training in industry-standard equipment and techniques</li> <li>- Laboratory and workshop sessions</li> <li>- Industry internships and apprenticeships</li> </ul> </li> <li>3. Core Skills               <ul style="list-style-type: none"> <li>- Basic numeracy and literacy skills</li> <li>- Digital literacy and ICT skills</li> <li>- Workplace communication and teamwork</li> </ul> </li> <li>4. Entrepreneurship Education               <ul style="list-style-type: none"> <li>- Basic business management skills</li> <li>- Understanding of market dynamics</li> <li>- Project planning and financial literacy</li> </ul> </li> <li>5. Environmental Awareness               <ul style="list-style-type: none"> <li>- Sustainable practices in respective industries</li> <li>- Understanding of environmental regulations</li> <li>- Green skills relevant to the vocation</li> </ul> </li> </ol>
<p>Implementation Strategies</p>	<ol style="list-style-type: none"> <li>1. Train-the-Trainer Programs               <ul style="list-style-type: none"> <li>- Capacity building for African TVET instructors in curriculum implementation</li> <li>- Workshops on modern pedagogical approaches</li> <li>- Training in assessment methods for competency-based curricula</li> </ul> </li> <li>2. Resource Development               <ul style="list-style-type: none"> <li>- Creation of localized textbooks and training materials</li> <li>- Development of e-learning content and multimedia resources</li> <li>- Establishment of well-equipped training facilities</li> </ul> </li> <li>3. Quality Assurance               <ul style="list-style-type: none"> <li>- Development of assessment tools aligned with curriculum objectives</li> <li>- Establishment of internal and external verification processes</li> <li>- Regular curriculum evaluation and improvement cycles</li> </ul> </li> <li>4. Piloting and Scaling               <ul style="list-style-type: none"> <li>- Initial piloting of curricula in selected institutions</li> <li>- Gathering feedback and making necessary adjustments</li> <li>- Phased roll-out to more institutions and regions</li> </ul> </li> </ol>

Source: Authors compiled information from various sources.

Korea’s approach to Infrastructure and Equipment Support in its TVET ODA strategy for Africa is characterized by a comprehensive and forward-looking perspective. This approach recognizes that modern, well-equipped facilities are crucial for effective TVET delivery and for ensuring that graduates are prepared for the realities of the contemporary workplace (Table 3.19).

**Table 3.19. Overview of TVET Infrastructure and Equipment Needs in Africa**

Current State	Key Challenges
<ul style="list-style-type: none"> <li>- Many TVET institutions lack modern facilities and equipment</li> <li>- Outdated infrastructure often misaligned with industry needs</li> <li>- Limited access to technology and digital learning resources</li> </ul>	<ul style="list-style-type: none"> <li>- Rapid technological changes requiring frequent updates</li> <li>- High costs associated with specialized equipment</li> <li>- Maintenance and sustainability of infrastructure and equipment</li> <li>- Varying needs across different regions and industries</li> </ul>

Source: Prepared based on interviews with experts related to TVET.

The process begins with a thorough evaluation of existing infrastructure and equipment, conducted in collaboration with African partners and industry stakeholders. This ensures that support is tailored to local needs and aligned with national development priorities. Rather than applying a one-size-fits-all approach, Korea adapts its TVET facility models to suit local contexts. This includes considerations of climate, available resources, and specific industry needs in different African countries.

Korea provides modern, industry-standard equipment to TVET institutions. This is crucial for ensuring that students are trained on the same technologies they will encounter in the workplace. Recognizing the growing importance of digital skills, Korea’s support often includes the development of ICT labs, e-learning platforms, and smart classrooms. This digital focus helps bridge the technological gap often faced by African TVET



institutions. Infrastructure and equipment support is always accompanied by comprehensive training programs. This includes training local staff in equipment operation and maintenance, as well as facility management.

Korea’s approach emphasizes long-term sustainability. This includes developing plans for equipment replacement and upgrades, training on revenue generation for maintenance costs, and promoting shared facilities to maximize resource utilization.

There should be effective and sustainable support issues. A phased approach allows for gradual upgrading and continuous evaluation. Public-private partnerships leverage the expertise of Korean companies and engage local industries. Innovative solutions like mobile TVET units and virtual reality labs help address challenges of access and resource constraints.

Korea’s TVET Instructor Training for Africa is comprehensive and multi-faceted, recognizing the critical role that well-trained instructors play in the success of TVET programs. This approach is informed by Korea’s own experience in rapidly developing its TVET sector and adapting it to the needs of a fast-evolving economy (Table 3.20 and Table 3.21).

**Table 3.20. Challenges of TVET Instructor Training Needs in Africa**

Current Challenges	<ul style="list-style-type: none"> <li>- Shortage of qualified TVET instructors</li> <li>- Limited industry experience among many instructors</li> <li>- Outdated teaching methodologies</li> <li>- Lack of continuous professional development opportunities</li> </ul>
Skills Gap	<ul style="list-style-type: none"> <li>- Need for up-to-date technical skills aligned with industry needs</li> <li>- Insufficient pedagogical skills for competency-based training</li> <li>- Limited digital literacy for modern TVET delivery</li> </ul>

Source: Authors compiled information from various sources.

**Table 3.21. Korea's Approach to TVET Instructor Training**

Comprehensive Needs Assessment	<ul style="list-style-type: none"> <li>- Collaboration with African TVET institutions to identify gaps</li> <li>- Industry consultation to understand skill requirements</li> <li>- Alignment with national TVET policies and strategies</li> </ul>
Dual Focus: Technical and Pedagogical Skills	<ul style="list-style-type: none"> <li>- Updating technical knowledge in specific vocational areas</li> <li>- Enhancing teaching methodologies for effective skill transfer</li> </ul>
Industry-Linked Training	<ul style="list-style-type: none"> <li>- Incorporation of industry attachments in training programs</li> <li>- Involvement of Korean industry experts in instructor training</li> </ul>
Technology Integration	<ul style="list-style-type: none"> <li>- Training on the use of modern teaching technologies</li> <li>- Development of digital content creation skills</li> </ul>
Key Components of Instructor Training Programs	<ol style="list-style-type: none"> <li>1. Technical Skills Enhancement <ul style="list-style-type: none"> <li>- Hands-on training with modern equipment</li> <li>- Industry-specific workshops and seminars</li> <li>- Online courses for continuous skill updating</li> </ul> </li> <li>2. Pedagogical Skills Development <ul style="list-style-type: none"> <li>- Competency-based education and training (CBET) methodologies</li> <li>- Student-centered and project-based learning approaches</li> <li>- Assessment techniques for skills-based learning</li> </ul> </li> <li>3. Soft Skills and Leadership Training <ul style="list-style-type: none"> <li>- Communication and mentoring skills</li> <li>- Classroom management techniques</li> <li>- Leadership development for TVET institution management</li> </ul> </li> <li>4. Digital Literacy and E-learning <ul style="list-style-type: none"> <li>- Use of learning management systems (LMS)</li> <li>- Creation and management of online learning content</li> <li>- Integration of technology in practical training</li> </ul> </li> </ol>
Implementation Strategies	<ol style="list-style-type: none"> <li>1. Train-the-Trainer Model <ul style="list-style-type: none"> <li>- Intensive training for a core group of master trainers</li> <li>- Cascading training model for wider reach</li> </ul> </li> <li>2. Blended Learning Approach <ul style="list-style-type: none"> <li>- Combination of face-to-face workshops and online learning</li> <li>- Use of mobile learning platforms for continuous engagement</li> </ul> </li> <li>3. Partnerships with Korean TVET Institutions <ul style="list-style-type: none"> <li>- Exchange programs with Korean TVET colleges</li> <li>- Joint curriculum development for instructor training</li> </ul> </li> <li>4. Customized Training Packages <ul style="list-style-type: none"> <li>- Development of country-specific training modules</li> <li>- Adaptation of Korean best practices to African contexts</li> </ul> </li> </ol>

Source: Authors compiled information from various sources.

The strategy begins with a thorough evaluation of existing instructor capabilities and training needs, conducted in collaboration with African TVET institutions and industry partners. This ensures that training programs are tailored to local contexts and industry requirements. Korea's approach recognizes that effective TVET instructors require both up-to-date technical knowledge and strong teaching skills. Consequently, training programs typically encompass both technical upskilling in specific vocational areas and enhancement of pedagogical techniques.

To ensure effective and sustainable training, a Train of Trainers (TOT) model is implemented, allowing for broader reach and building local capacity for ongoing training. A blended learning approach — combining face-to-face workshops with online learning — provides flexibility and continuous engagement.

Utilizing Virtual Reality (VR) for teacher training offers immersive, practical learning experiences. Additionally, micro-credentialing provides flexible, modular training options that can be accumulated over time, while peer-to-peer learning networks facilitate ongoing knowledge sharing and professional development.

Case studies, such as projects at Kenya Technical Trainers College and Rwanda Polytechnic, illustrate how these principles are applied in practice. These initiatives focus on specific technical areas (e.g., renewable energy, ICT) while also emphasizing modern teaching methodologies and e-learning integration.

Quality assurance is a key component of the strategy, aiming to develop trainer qualification frameworks and establish certification processes for TVET instructors. However, challenges remain, including language barriers, sustainability of training initiatives, and balancing standardized training content with localization for different African contexts.

Additionally, there is a concern about the brain drain of trained instructors from TVET institutions. Integrating artificial intelligence for personalized trainer development and focusing on emerging technologies like IoT and

robotics are essential. Cross-country trainer exchange programs within Africa should also be considered, along with an enhanced emphasis on entrepreneurship training for TVET instructors.

The strategy supports the development of national qualification frameworks and quality assurance systems, addressing several key challenges (Table 3.22).

**Table 3.22. Overview of TVET Policy and System Challenges in Africa**

Current State	Key Challenges
<ul style="list-style-type: none"> <li>- Fragmented TVET policies across many African countries</li> <li>- Limited coordination between education, labor, and industry sectors</li> <li>- Inadequate funding mechanisms for TVET</li> <li>- Lack of comprehensive quality assurance systems</li> </ul>	<ul style="list-style-type: none"> <li>- Aligning TVET policies with national development strategies</li> <li>- Addressing the low status of TVET in many African countries</li> <li>- Developing responsive and flexible TVET systems</li> <li>- Ensuring policy implementation and enforcement</li> </ul>

Source: Authors own work.

The strategy emphasizes tailored approaches for each country, the establishment of regional TVET Centers of Excellence, and the integration of ICT in TVET delivery. It also focuses on increasing female participation and developing inclusive programs for disadvantaged populations.

Implementation involves collaboration with Korean TVET institutions and industries, as well as international organizations. Regular monitoring and evaluation aligned with the Sustainable Development Goals (SDGs) ensure the effectiveness of these interventions. Korea’s approach to TVET policy and system development within its Official Development Assistance (ODA) strategy for Africa is comprehensive, recognizing the crucial role of robust policies and effective systems in the success of TVET programs.

Korea supports African countries in formulating or revising national TVET policies to align with broader economic development plans. This process often includes sharing Korea’s own policy evolution experiences,

providing valuable insights into the role of TVET in economic transformation. Policies are only as effective as the institutions that implement them, which is why Korea focuses on strengthening TVET regulatory bodies, developing inter-ministerial coordination mechanisms, and training policymakers and TVET administrators.

Korea also assists in developing sustainable financing models for TVET, including establishing national training funds and guidance on public-private partnerships. This addresses the critical challenge of inadequate and unstable funding in many African TVET systems. Support extends to developing national qualification frameworks, establishing accreditation systems for TVET institutions, and creating robust assessment and certification mechanisms, all crucial for ensuring the credibility and recognition of TVET qualifications.

During implementation, establishing national TVET authorities and sector skills councils enhances coordination and industry involvement. Korea supports drafting TVET-specific legislation and regulatory reforms to increase system flexibility. The development of management information systems and labor market information systems supports evidence-based policymaking, including formulating instructor qualification standards and continuous professional development frameworks.

Gradual introduction and testing of new policies and systems, along with stakeholder engagement, are emphasized to ensure buy-in from all relevant parties. Regional harmonization efforts will support cross-border recognition of qualifications and shared learning. Evidence-based policymaking is promoted through research and development and skills surveys, integrating digital technologies into TVET delivery and administration, and incorporating sustainable development principles into TVET strategies.

Korea's TVET policy and system development strategy is likely to evolve in several directions:

- Greater integration of lifelong learning concepts in TVET policies to address emerging forms of work, such as the gig economy.

- Increased focus on entrepreneurship and innovation within TVET systems.
- Greater attention to mental health and well-being in TVET policies.

Korea’s approach to TVET Policy and System Development in its ODA for Africa is comprehensive, forward-looking, and focused on creating sustainable, effective TVET systems. By supporting robust policies, governance structures, and quality assurance mechanisms, this strategy aims to enhance the overall quality and relevance of TVET in Africa, contributing to broader goals of economic development and youth employment across the continent.

Korea’s TVET ODA strategy for Africa is summarized in Table 3.23 below. However, success will depend on effective implementation, strong partnerships with African institutions and industries, and adaptability to each country’s unique context.

**Table 3.23. Korea’s TVET ODA Strategy for Africa**

Strategic Objectives	<ol style="list-style-type: none"> <li>1. Align TVET programs with Africa’s industrial needs</li> <li>2. Enhance the quality and relevance of TVET education</li> <li>3. Promote industry–academia collaboration</li> <li>4. Support the development of national TVET policies and systems</li> </ol>
Key Focus Areas	<ol style="list-style-type: none"> <li>1. Curriculum Development <ul style="list-style-type: none"> <li>– Develop competency–based curricula aligned with industry needs</li> <li>– Integrate soft skills and entrepreneurship education</li> </ul> </li> <li>2. Infrastructure and Equipment Support <ul style="list-style-type: none"> <li>– Establish model TVET institutions</li> <li>– Provide modern training equipment and facilities</li> </ul> </li> <li>3. Instructor Training <ul style="list-style-type: none"> <li>– Train–the–trainer programs</li> <li>– Industry attachment programs for TVET instructors</li> </ul> </li> <li>4. Industry Partnerships <ul style="list-style-type: none"> <li>– Promote apprenticeship and internship programs</li> <li>– Support the establishment of industry advisory boards for TVET institutions</li> </ul> </li> <li>5. Policy and System Development <ul style="list-style-type: none"> <li>– Support the development of national qualification frameworks</li> <li>– Assist in establishing quality assurance systems for TVET</li> </ul> </li> </ol>

**Table 3.23. Continued**

Implementation Approaches	<ol style="list-style-type: none"> <li>1) Country-specific TVET Projects <ul style="list-style-type: none"> <li>- Tailor TVET support to each country's industrial priorities and workforce needs</li> </ul> </li> <li>2) Regional TVET Centers of Excellence <ul style="list-style-type: none"> <li>- Establish regional TVET hubs specializing in key industries</li> </ul> </li> <li>3) ICT-based TVET <ul style="list-style-type: none"> <li>- Develop e-learning platforms for TVET</li> <li>- Support the integration of digital skills across TVET programs</li> </ul> </li> <li>4) TVET for Women and Marginalized Groups <ul style="list-style-type: none"> <li>- Implement programs to increase female participation in TVET</li> <li>- Develop inclusive TVET programs for rural and disadvantaged populations</li> </ul> </li> <li>5) Collaboration and Partnerships <ul style="list-style-type: none"> <li>- Engage Korean TVET institutions and industries in ODA projects</li> <li>- Collaborate with international organizations (e.g., UNESCO-UNEVOC, ILO)</li> <li>- Promote South-South and triangular cooperation in TVET</li> </ul> </li> </ol>
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Source: Korea International Cooperation Agency (KOICA), "TVET ODA Strategy 2016-2020"; Ministry of Foreign Affairs, Republic of Korea, "Country Partnership Strategy," documents.

## 6. Healthcare

### 6-1. African Health Challenges

An analysis of African Health Challenges reveals a complex landscape of health issues facing the continent. While significant progress has been made in some areas, substantial challenges remain, and new threats are emerging. Infectious diseases continue to pose a significant burden (Table 3.24). HIV/AIDS, despite notable progress in treatment access, still affects millions, with 3.7% prevalence among adults in sub-Saharan Africa (UNAIDS 2020).<sup>34</sup> Malaria remains a major killer, particularly for children, causing 380,000 deaths in 2018 and costing an estimated \$12 billion annually

<sup>34</sup> UNAIDS (2020), UNAIDS Data 2020, <https://www.unaids.org/en/resources/documents/2020/unaids-data> (Accessed on 15 July, 2024).

in lost GDP (WHO 2019).<sup>35</sup> Tuberculosis, often complicated by HIV co-infection, caused 417,000 deaths in 2018 (WHO 2019).

**Table 3.24. Major Health Issues in Africa**

Infectious Diseases	<p>1) Infectious Diseases</p> <p>&lt;HIV/AIDS&gt;</p> <ul style="list-style-type: none"> <li>- Prevalence: 3.7% among adults (15–49 years) in sub-Saharan Africa (2019)</li> <li>- AIDS-related deaths: 440,000 in 2019</li> <li>- Treatment: 15.1 million people accessing antiretroviral therapy (2019)</li> </ul> <p>&lt;Malaria&gt;</p> <ul style="list-style-type: none"> <li>- Cases: 213 million (93% of global cases) in 2018</li> <li>- Deaths: 380,000 (94% of global deaths) in 2018</li> <li>- Most affected: Children under 5 account for 67% of all malaria deaths worldwide</li> </ul> <p>&lt;Tuberculosis (TB)&gt;</p> <ul style="list-style-type: none"> <li>- Incidence: 2.5 million cases in 2018</li> <li>- Deaths: 417,000 in 2018</li> <li>- Multi-drug resistant TB: 77,000 cases in 2018</li> <li>- HIV-associated TB: 24% of TB cases are among HIV-positive people</li> </ul> <p>&lt;Neglected Tropical Diseases (NTDs)&gt;</p> <ul style="list-style-type: none"> <li>- Affect over 1.5 billion people globally, with a significant burden in Africa</li> <li>- Include diseases like lymphatic filariasis, onchocerciasis, and schistosomiasis</li> </ul>
Non-Communicable Diseases (NCDs)	<ul style="list-style-type: none"> <li>- Responsible for 37% of deaths in Africa</li> <li>- Cardiovascular diseases, cancers, respiratory diseases, and diabetes are major contributors</li> <li>- Projected to exceed communicable diseases as the most common cause of death by 2030</li> </ul>
Maternal and Child Health	<ul style="list-style-type: none"> <li>- Maternal mortality ratio: 542 per 100,000 live births (2017)</li> <li>- Under-5 mortality rate: 76 per 1,000 live births (2018)</li> <li>- Neonatal mortality rate: 27 per 1,000 live births (2018)</li> </ul>

Source: UNAIDS Data (2020), “World Health Organization (WHO) African Region Health Report 2019.”

35) WHO (2019), “The Work of the WHO in the African Region” (Accessed on 20 July, 2024).



Non-communicable diseases (NCDs) are an increasing concern. Cardiovascular diseases, cancer, diabetes, and respiratory diseases are on the rise, driven by urbanization, changing diets, and more sedentary lifestyles. For instance, the prevalence of diabetes is projected to more than double from 19 million in 2019 to 47 million by 2045. Maternal and child health remains a critical issue. The maternal mortality ratio of 542 per 100,000 live births (2017) is still unacceptably high, with hemorrhage being the leading cause of maternal deaths. Child mortality has improved but remains high at 76 per 1,000 live births for under-5 mortality (UNICEF 2019).

Emerging health challenges add to this complex picture. The COVID-19 pandemic has had a significant impact, with over 4.5 million confirmed cases as of May 2021. Antimicrobial resistance threatens to undermine many health gains, with potential to cost up to 2.5% of Africa's GDP if left unchecked (WHO Africa 2018).<sup>36)</sup> Mental health is an often overlooked but crucial issue, with over 90% of people with mental health conditions not receiving treatment. Underlying these specific health challenges are systemic issues within African health systems. The continent faces a critical shortage of health workers, with only 1.55 health workers per 1,000 population. Health expenditure averages just 5.6% of GDP, with a high proportion (36%) being out-of-pocket expenses, which can lead to financial hardship for many families (WHO 2018).

Addressing these multifaceted health challenges requires a comprehensive approach. This includes strengthening health systems, increasing access to essential medicines and vaccines, improving health education and prevention efforts, and addressing the social determinants of health such as poverty, education, and environmental factors. International cooperation and support, such as Korea's ODA strategy, can play a crucial role in helping African countries tackle these health challenges. However, solutions

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36) WHO Global Status Report on Non-communicable Diseases (2018), <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases> (Accessed on 30 July, 2024).

must be tailored to local contexts and priorities, and efforts should focus on building sustainable, resilient health systems that can respond to both current and future health threats.

## **6-2. Korea's ODA Strategy for Healthcare in Africa**

Korea's ODA strategy in healthcare for Africa is comprehensive and multifaceted, addressing the continent's major health challenges while leveraging Korea's strengths in healthcare and technology. The strategy recognizes the complex health landscape in Africa, where infectious diseases remain a significant burden while non-communicable diseases are on the rise. HIV/AIDS, malaria, and tuberculosis continue to be major health issues, with Africa bearing a disproportionate global burden. For instance, 67% of global HIV infections are in Africa, and 94% of global malaria deaths occur on the continent (WHO 2018). At the same time, non-communicable diseases are becoming increasingly prevalent, responsible for 37% of deaths in Africa and projected to become the most common cause of death by 2030 (WHO 2018). Maternal and child health also remain critical issues, with the maternal mortality ratio in Africa being 542 per 100,000 live births in 2017, significantly higher than the global average (UNICEF 2019).<sup>37)</sup>

Korea's strategy addresses these challenges through several key focus areas:

Firstly, strengthening health systems should be given a top priority. It can include building and upgrading healthcare facilities, training healthcare workers, and improving health information systems. This approach recognizes that robust health systems are fundamental to addressing all health challenges. Strengthening health systems is a critical component of improving healthcare outcomes in Africa. It involves a comprehensive

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<sup>37)</sup> UNICEF (2019), "Knowledge for Children in Africa 2019," <https://www.unicef.org/esa/reports/knowledge-children-africa-2019> (Accessed on 20 June, 2024).

approach to enhancing all aspects of the health system, from service delivery to governance. The current status of health systems in Africa presents significant challenges. With only 44% of the population having access to essential health services and a severe shortage of health workers (1.55 per 1,000 population compared to the WHO recommended 4.45), there is a pressing need for improvement (WHO 2018, 2019).

Strategies for strengthening health systems must be multifaceted and context-specific. Improving service delivery through expanded primary healthcare coverage and integrated service models is crucial. Ethiopia's Health Extension Program, which has deployed over 38,000 health extension workers to rural areas, exemplifies how such strategies can significantly improve access to basic health services. Enhancing the health workforce is another critical area. This involves not only increasing investment in education and training but also implementing retention strategies to prevent brain drain, which has cost Africa about \$2.6 billion. Task-shifting, where appropriate tasks are delegated to less specialized health workers, can help maximize the use of available human resources. Strengthening health information systems is vital for evidence-based decision-making. Kenya's implementation of the District Health Information Software (DHIS2) demonstrates how improved data collection and analysis can enhance health system management. Improving access to essential medicines remains a challenge, with only 58% availability in public health facilities (WHO 2018). Strategies like strengthening supply chain management and promoting local pharmaceutical production can help address this issue. The establishment of the African Medicines Agency (AMA) in 2019 is a step towards improving access to quality medical products across the continent. International cooperation plays a significant role in these efforts. Initiatives like the Korea-Africa Health Care Initiative (KAHCI) provide valuable technical assistance, financial support, and knowledge sharing. However, it's crucial that such assistance aligns with local priorities and builds long-term local capacity.

Secondly, infectious disease control is an important area too. Korea supports HIV/AIDS prevention and treatment programs, malaria control initiatives, and TB diagnosis and treatment. These efforts align with the continued need to combat these major infectious diseases in Africa. Infectious disease control remains a critical challenge in Africa, with the continent bearing a disproportionate burden of several major infectious diseases. HIV/AIDS, malaria, tuberculosis, and neglected tropical diseases continue to cause significant morbidity and mortality, impacting not only health but also socioeconomic development. The scale of the challenge is substantial. For instance, sub-Saharan Africa accounts for 67% of global HIV infections and 94% of global malaria deaths. However, significant progress has been made in recent years through concerted efforts by African governments, international partners, and communities.

Control strategies for these diseases involve a combination of prevention, diagnosis, treatment, and care approaches. For HIV/AIDS, the expansion of antiretroviral therapy (ART) coverage has been a game-changer, with 15.1 million people in Africa accessing treatment in 2019 (UNAIDS 2020). The “Test and Treat” strategy, which involves initiating ART immediately after diagnosis regardless of CD4 count, has been particularly effective in reducing transmission and improving health outcomes. Malaria control has seen success through the widespread distribution of insecticide-treated bed nets (ITNs) and the use of artemisinin-based combination therapies (ACTs). The Roll Back Malaria Partnership has contributed to a 40% reduction in malaria mortality rates in Africa since 2000, demonstrating the impact of coordinated, multi-pronged approaches.

For tuberculosis, the implementation of Directly Observed Treatment, Short-course (DOTS) has improved treatment adherence and outcomes. However, the rise of multi-drug resistant TB presents new challenges, necessitating more advanced diagnostic tools like the GeneXpert MTB/RIF assay. Neglected Tropical Diseases (NTDs) are being addressed through mass drug administration campaigns and improvements in water, sanitation,

and hygiene (WASH). The African Program for Onchocerciasis Control (APOC) has shown how targeted interventions can significantly reduce disease burden.

Cross-cutting strategies such as strengthening surveillance systems, building laboratory capacity, and training health workers are crucial for effective disease control. Community engagement has proven to be a key factor in the success of many interventions. Despite these efforts, significant challenges remain. Weak health systems, characterized by inadequate infrastructure and shortages of trained health workers, hinder the delivery of interventions. The emergence of drug and insecticide resistance threatens to undermine progress. Funding gaps and dependence on external funding pose risks to the sustainability of control efforts. Innovative approaches are being employed to overcome these challenges. Mobile health technologies are improving treatment adherence and disease surveillance. Geospatial mapping is enabling more targeted interventions. Community-led initiatives are empowering local populations to take charge of their health.

Looking to the future, there's a growing recognition of the need for integrated approaches. The One Health approach, which considers the interconnections between human, animal, and environmental health, is gaining traction. There's also an increased focus on pandemic preparedness, a need highlighted by the COVID-19 pandemic. While infectious diseases continue to pose a significant challenge in Africa, there are many reasons for optimism. The combination of proven interventions, innovative approaches, and sustained commitment from governments and international partners provides a pathway to continued progress in infectious disease control. However, success will require addressing systemic challenges, ensuring sustainable financing, and adapting strategies to evolving disease patterns and socioeconomic contexts.

Thirdly, maternal and child health should be included. Initiatives focus on improving access to antenatal care, enhancing emergency obstetric care, and supporting immunization programs. This addresses the high maternal and

child mortality rates in many African countries. Maternal and Child Health (MCH) remains a critical area of concern in Africa, with the continent facing some of the highest rates of maternal and child mortality globally. However, significant progress has been made in recent years, thanks to concerted efforts by African governments, international partners, and local communities. The current status of MCH in Africa presents both challenges and opportunities. The maternal mortality ratio in sub-Saharan Africa stands at 542 per 100,000 live births (2017), which is significantly higher than the global average. Similarly, the under-5 mortality rate of 76 per 1,000 live births (2018) indicates that much work remains to be done in improving child survival (WHO, UNICEF 2019). Major challenges affecting MCH in Africa include limited access to quality healthcare services, shortage of skilled healthcare workers, inadequate infrastructure, and cultural barriers. Additionally, poverty, low levels of education, and high burden of infectious diseases compound these challenges. To address these issues, a range of intervention strategies have been implemented across the continent. For maternal health, these include improving antenatal care coverage, increasing skilled birth attendance, enhancing emergency obstetric care, and providing postnatal care. The WHO's recommendation of 8 antenatal contacts during pregnancy aims to increase the quality and frequency of care during this critical period. For child health, key interventions include expanding immunization coverage, implementing the Integrated Management of Childhood Illness (IMCI) approach, nutrition programs, and improving water, sanitation, and hygiene (WASH). The Expanded Program on Immunization (EPI) has been particularly successful in increasing vaccination rates across the continent.

Several African countries have implemented successful programs that have significantly improved MCH outcomes. Ethiopia's Health Extension Program, for instance, has deployed over 38,000 Health Extension Workers, contributing to a reduction in under-5 mortality from 123 per 1,000 live births in 2005 to 55 in 2019. Rwanda's Community Health Worker Program,

with its innovative performance-based financing system, has played a crucial role in reducing the maternal mortality ratio from 1,071 in 2000 to 248 in 2017. Technology and innovation are playing an increasingly important role in improving MCH in Africa. mHealth initiatives, such as SMS reminders for antenatal care visits and immunizations, are improving service utilization. Telemedicine is expanding access to specialist care in rural areas, while point-of-care diagnostics are enabling rapid testing and treatment initiation.

Despite these advances, persistent challenges remain. Inequities in access to healthcare, particularly between rural and urban areas and across socioeconomic groups, continue to be a major concern. The sustainability of donor-funded programs and retention of health workers in rural areas are ongoing challenges. Looking to the future, key priorities include strengthening health systems, addressing social determinants of health, moving towards Universal Health Coverage, and integrating MCH services with other health programs. There's also a growing recognition of emerging issues such as the impact of climate change on MCH and the rising prevalence of non-communicable diseases.

International support continues to play a crucial role in improving MCH in Africa. Initiatives like the Global Financing Facility (GFF) for Women, Children and Adolescents and UNICEF's Young Children Survive and Thrive program provide vital resources and technical support. The combination of proven interventions, innovative approaches, and sustained commitment from governments and international partners provides a pathway to continued progress. However, success will require addressing systemic challenges, ensuring sustainable financing, and adapting strategies to evolving health landscapes and socioeconomic contexts.

Fourthly, non-communicable disease management will be beneficiary for the betterment of public health. Recognizing the rising burden of Non-Communicable Diseases (NCDs), Korea supports early detection and screening programs and the establishment of treatment facilities for NCDs represent a growing health challenge in Africa, with a significant impact on

morbidity, mortality, and economic development. As of 2019, NCDs accounted for 37% of deaths in Africa, and this proportion is projected to increase, potentially exceeding communicable diseases as the most common cause of death by 2030 (WHO 2018). The major NCDs affecting African populations include cardiovascular diseases (CVDs), cancer, diabetes, and chronic respiratory diseases. CVDs are the leading cause of NCD deaths, accounting for 38% of NCD mortality. The prevalence of hypertension, a major risk factor for CVDs, is alarmingly high at 46% among adults aged 25 and above (WHO 2018). Cancer is another significant concern, with 1.1 million new cases and 711,000 deaths reported in 2020. The most common cancers in Africa include breast, cervical, prostate, liver, and colorectal cancers. Diabetes prevalence is also on the rise, with 19 million adults affected in 2019, and projections suggesting this could increase to 47 million by 2045 (International Diabetes Federation 2019). This rapid increase is particularly concerning given the high cost of diabetes management and the limited healthcare resources in many African countries.

The rise of NCDs in Africa is driven by a combination of behavioral risk factors (such as tobacco use, harmful alcohol consumption, unhealthy diets, and physical inactivity), metabolic risk factors (including obesity and raised blood pressure), and broader environmental and social determinants like rapid urbanization and population aging. Managing NCDs in Africa presents several unique challenges. These include limited awareness leading to late diagnosis, weak health systems ill-equipped to provide comprehensive NCD services, high treatment costs, shortage of trained healthcare workers, limited access to essential medicines and technologies, and competing health priorities such as infectious diseases. International cooperation plays a crucial role in NCD management in Africa. The WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020 and the United Nations Sustainable Development Goal 3.4 provide frameworks for action. Bilateral and multilateral aid programs are increasingly focusing on NCD prevention and control. Priorities include strengthening primary health care for NCD



management, developing sustainable financing mechanisms, enhancing surveillance and research capacity, addressing social determinants of NCDs, and leveraging digital health technologies.

The rise of NCDs in Africa presents a significant challenge, there are also opportunities for innovative approaches to prevention, early detection, and management. Success will require sustained commitment, multisectoral action, and adaptation of global best practices to local contexts. As Africa continues to grapple with the double burden of communicable and non-communicable diseases, integrated approaches that strengthen overall health systems will be crucial. The implementation strategies leverage Korea's strengths, particularly in technology and capacity building. The emphasis on technology transfer, including e-health and telemedicine expertise, can help African countries leapfrog some stages of health system development. Capacity building through training programs both in Korea and on-site in Africa helps address the critical shortage of healthcare professionals in many African countries.

Key initiatives like the Korea-Africa Health Care Initiative (KAHCI) and the Korea-Africa Maternal and Child Health Improvement Program (KAMCHIP) demonstrate Korea's commitment to long-term, substantial investments in African healthcare. These programs, with significant budgets and multi-year timeframes, have the potential to make meaningful impacts in their target countries. Korea's strategy also wisely incorporates public-private partnerships, engaging Korean pharmaceutical and medical device companies. This not only brings additional resources and expertise to the initiatives but also potentially opens up new markets for Korean healthcare industries. The alignment of Korea's strategy with the Sustainable Development Goals (particularly SDG 3) and the African Union's Agenda 2063 ensures that these efforts are in harmony with global and regional development priorities.

However, the success of these initiatives will depend on effective implementation, cultural sensitivity, and the ability to adapt to diverse local

**Table 3.25. Korea's ODA Strategy for Healthcare in Africa**

Focus Areas	<ol style="list-style-type: none"> <li>1) Strengthening Health Systems <ul style="list-style-type: none"> <li>- Building and upgrading healthcare facilities</li> <li>- Training healthcare workers</li> <li>- Improving health information systems</li> </ul> </li> <li>2) Infectious Disease Control <ul style="list-style-type: none"> <li>- Supporting HIV/AIDS prevention and treatment programs</li> <li>- Malaria control initiatives</li> <li>- TB diagnosis and treatment</li> </ul> </li> <li>3) Maternal and Child Health <ul style="list-style-type: none"> <li>- Improving access to antenatal care</li> <li>- Enhancing emergency obstetric care</li> <li>- Supporting immunization programs</li> </ul> </li> <li>4) Non-Communicable Disease Management <ul style="list-style-type: none"> <li>- Promoting early detection and screening programs</li> <li>- Supporting treatment facilities for NCDs</li> </ul> </li> </ol>
Implementation Strategies	<ol style="list-style-type: none"> <li>1) Technology Transfer <ul style="list-style-type: none"> <li>- Sharing Korea's e-health and telemedicine expertise</li> <li>- Supporting the establishment of digital health information systems</li> </ul> </li> <li>2) Capacity Building <ul style="list-style-type: none"> <li>- Training programs for African healthcare professionals in Korea</li> <li>- On-site training and mentorship programs</li> </ul> </li> <li>3) Public-Private Partnerships <ul style="list-style-type: none"> <li>- Collaborating with Korean pharmaceutical companies for drug access programs</li> <li>- Engaging Korean medical device manufacturers in equipment provision</li> </ul> </li> <li>4) Research Collaboration <ul style="list-style-type: none"> <li>- Joint research initiatives on tropical diseases</li> <li>- Support for local medical research institutions</li> </ul> </li> </ol>
Key Initiatives	<ol style="list-style-type: none"> <li>1) Korea-Africa Health Care Initiative (KAHCI) <ul style="list-style-type: none"> <li>- Launched in 2016</li> <li>- Aims to improve access to quality healthcare in 10 African countries by 2022</li> <li>- Budget: \$100 million over 5 years</li> </ul> </li> <li>2) Korea-Africa Maternal and Child Health Improvement Program (KAMCHIP) <ul style="list-style-type: none"> <li>- Focus on reducing maternal and child mortality in 5 countries</li> <li>- Includes facility upgrades, training programs, and community outreach</li> </ul> </li> <li>3) Infectious Disease Response Cooperation (IDRC) <ul style="list-style-type: none"> <li>- Supports the establishment of disease surveillance systems</li> <li>- Provides emergency response training for outbreaks</li> </ul> </li> </ol>
Alignment with SDGs and African Union Agenda 2063	<ol style="list-style-type: none"> <li>1) Korea's strategy aligns with SDG 3 (Good Health and Well-being)</li> <li>2) Supports the health objectives of the African Union's Agenda 2063</li> </ol>

Source: Korea International Cooperation Agency (KOICA) Annual Report 2019.

contexts across Africa. Regular monitoring and evaluation, with clear KPIs and impact assessments, will be crucial to ensure the effectiveness of these programs and to make necessary adjustments. Korea's ODA strategy in healthcare for Africa represents a comprehensive and thoughtful approach to addressing the continent's complex health challenges (Table 3.25). By leveraging Korea's strengths in healthcare and technology while focusing on capacity building and system strengthening, this strategy has the potential to make significant contributions to improving health outcomes across Africa.

## **7. Digital Cooperation**

### **7-1. The Importance of Digital Cooperation**

The 2024 Korea-Africa Summit marked a significant milestone in the evolving relationship between the Republic of Korea and African nations. Among the various areas of cooperation discussed, digital collaboration emerged as a key focus, underscoring the growing importance of technological innovation in driving economic development and social progress. Korea, with its advanced digital infrastructure and expertise, committed to supporting Africa in several crucial areas of digital development.

This commitment, as outlined in the summit's joint declaration, encompasses support for building the Pan-African Payment and Settlement System (PAPSS) and strengthening cooperation in digital fields such as the Korean-style electronic customs system (UNIPASS), electronic procurement system (KONEPS), and statistical system (KOSIS). These initiatives represent a comprehensive approach to leveraging digital technologies for enhancing governance, facilitating trade, and improving data management across the African continent.

## **1) Accelerating Economic Development**

Digital technologies can serve as catalysts for economic growth in Africa. By enhancing efficiency, reducing transaction costs, and opening new markets, digital solutions enable African economies to leapfrog traditional development stages. Korea's expertise in digital transformation can provide valuable insights and practical solutions to support this acceleration.

## **2) Bridging the Digital Divide**

Despite rapid progress in some areas, many parts of Africa still lag behind in terms of digital infrastructure and access. This digital divide exists not only between Africa and more developed regions but also within the continent itself. Cooperation with Korea can help address this disparity by providing access to advanced technologies and knowledge transfer, ensuring more equitable digital development across African nations.

## **3) Enhancing Governance and Transparency**

Digital systems can significantly improve the efficiency, transparency, and accountability of government operations. By implementing electronic systems for customs, procurement, and statistical data management, African governments can reduce corruption, streamline processes, and make more informed policy decisions. Korea's successful implementation of such systems serves as a model for African countries to emulate and adapt.

## **4) Fostering Innovation and Entrepreneurship**

A robust digital ecosystem is crucial for nurturing innovation and supporting entrepreneurship. By collaborating with Korea on digital initiatives, African countries can create an environment conducive to technological innovation, encouraging the growth of startups and tech-driven businesses. This can lead to job creation, economic diversification, and the development of homegrown solutions to local challenges.

## **5) Strengthening Regional Integration**

Digital platforms can play a pivotal role in enhancing regional integration across Africa. Systems like PAPSS can facilitate intra-African trade by simplifying cross-border transactions. Korea's support in developing and implementing such systems can contribute to the goals of the African Continental Free Trade Area (AfCFTA) and other regional integration initiatives.

## **6) Improving Public Services**

Digital technologies offer the potential to dramatically improve the delivery of public services. From healthcare to education, digital solutions can extend the reach and quality of essential services, particularly to underserved rural areas. Korea's experience in e-government and digital public services can provide valuable insights for African countries seeking to enhance service delivery through technology.

## **7-2. Analysis of Proposed Cooperation Areas and Korea's Potential Contribution**

### **1) Pan-African Payment and Settlement System (PAPSS)**

The Pan-African Payment and Settlement System aims to facilitate intra-African trade by enabling fast and secure cross-border financial transactions in local currencies. This system seeks to reduce dependency on foreign currencies, lowering transaction costs and boosting economic integration across the continent. While PAPSS is operational in some countries, its full potential remains unrealized due to challenges in technological infrastructure, regulatory harmonization, and widespread adoption.

Korea can significantly support the development and expansion of PAPSS through:

- **Technical Assistance:** Enhancing security, efficiency, and scalability by sharing best practices in cybersecurity and system architecture design.
- **Interoperability Solutions:** Ensuring PAPSS works seamlessly with existing national and international payment systems.
- **Capacity Building:** Providing training programs for African financial professionals and regulators.
- **Regulatory Framework Development:** Assisting in creating a comprehensive regulatory framework that complies with international financial standards.
- **Pilot Projects:** Initiating joint pilot projects to test PAPSS in specific regions or trade corridors.

These efforts aim to accelerate PAPSS's development and adoption, reducing transaction costs, increasing trade volumes, enhancing financial integration, and improving financial inclusion across Africa.

## 2) UNPASS (Universal Pass)

UNIPASS is Korea's advanced electronic customs clearance system that integrates various customs processes into a single platform, significantly improving efficiency and transparency. Many African countries face challenges such as lengthy clearance times and complex procedures. Implementing a system like UNIPASS could enhance cross-border trade, reduce corruption, and increase customs revenue.

Korea can contribute by:

Adapting UNIPASS: Tailoring the system to meet the specific needs of different African countries.

- **IT Infrastructure Development:** Assisting in building the necessary IT infrastructure for electronic customs systems.
- **Training Programs:** Offering comprehensive training for customs officials and IT personnel.

- **Legal Guidance:** Supporting the development of legal frameworks for electronic customs operations.

The implementation process should include assessing existing customs systems, developing country-specific plans, and establishing pilot projects to refine the system before nationwide expansion. These initiatives will reduce customs clearance times, enhance transparency, increase revenue collection, and improve trade competitiveness.

### **3) KONEPS (Korea ON-line E-Procurement System)**

KONEPS is Korea's comprehensive e-procurement system recognized for its efficiency and transparency in public procurement. Many African countries struggle with procurement challenges such as inefficiency and corruption. Implementing a KONEPS-like system could significantly enhance public resource management and trust in government operations.

Korea can assist by:

- **Customizing E-Procurement Systems:** Designing systems tailored to the specific needs of African nations.
- **Legal and Policy Framework Guidance:** Providing support for developing necessary legal frameworks.
- **Training Programs:** Offering training for government officials and suppliers on using the e-procurement system.
- **Anti-Corruption Best Practices:** Sharing strategies for embedding anti-corruption safeguards into e-procurement systems.

The implementation should include assessments of current procurement practices, pilot projects in selected agencies, and gradual nationwide expansion. These projects will increase transparency, reduce costs, enhance competition, and improve access to procurement opportunities for SMEs.

#### **4) KOSIS (Korean Statistical Information Service)**

KOSIS is Korea's comprehensive statistical information system that supports evidence-based policymaking. Many African countries face challenges in collecting and managing statistical data, which are crucial for informed decision-making and policy formulation.

Korea can support African nations by:

- **Designing Tailored Statistical Systems:** Creating systems that meet local needs.
- **Training on Data Collection:** Providing training in modern data collection methods, including digital technologies.
- **Developing Open Data Platforms:** Promoting transparency and data-driven innovation.

Implementation should involve assessing current statistical capabilities, launching pilot projects focused on key statistical areas, and providing ongoing training and technical assistance. These initiatives will improve data quality, enhance policymaking capabilities, increase transparency, and improve international comparability.

### **7-3. Challenges and Considerations**

Many African countries lack the necessary digital infrastructure to fully implement advanced systems. Cooperation efforts must include strategies to address these fundamental infrastructure needs. Improving digital literacy among government officials and the general public is essential to ensure effective use of new digital systems. Korean solutions will require significant adaptation to fit the diverse contexts of different African nations. Ensuring the long-term sustainability of these systems, including maintenance and upgrades, is also critical. For systems like PAPSS to be effective, harmonization of regulations and standards across various African countries is necessary.



The digital cooperation initiatives outlined in the 2024 Korea-Africa Summit present a significant opportunity for both Korea and African nations. By leveraging Korea's advanced digital expertise alongside Africa's growing digital potential, these collaborations can drive economic growth, improve governance, and enhance regional integration across the continent.

The success of these initiatives will depend on careful planning, sustained commitment, and adaptive implementation strategies. Close collaboration between Korean experts and African stakeholders is vital to ensure that solutions are tailored to local needs and conditions.

As these digital cooperation projects advance, they have the potential not only to transform specific sectors but also to catalyze broader digital transformation across Africa. This transformation can contribute to achieving sustainable development goals, fostering innovation, and improving the lives of millions of African citizens.

The journey towards digital transformation in Africa, supported by Korea's expertise and technologies, is poised to be a cornerstone of the evolving Korea-Africa partnership. As both sides work together to implement these ambitious digital initiatives, they are laying the groundwork for a more connected, efficient, and prosperous future for the African continent.

## **8. Sharing Korea's Development Experience with Africa**

### **8-1. Analysis of Korea's Knowledge Sharing Program (KSP) Strategy in Africa**

#### **1) Strengths of KSP to Africa**

Korea's use of the Korea Development Experience Sharing Program as its

main strategy in ODA to Africa is a strategic and potentially transformative approach. The main strength of KSP lies in its ability to share Korea's experience of rapid economic development and social transformation. This can provide practical insights into how Korea overcame challenges similar to those faced by many African countries today. Here are some in-depth thoughts on this strategy, its benefits, and potential areas for improvement:

The KSP leverages Korea's own rapid development experience, providing practical and proven strategies that can be adapted to the African context. Korea's transition from a war-torn, low-income country to a high-income, technologically advanced nation offers valuable insights and inspiration for African countries facing similar developmental challenges. Korea's development occurred relatively recently, making its experiences more relevant to current global conditions. Korea's rapid transition from aid recipient to donor offers valuable insights. Korea's experience in overcoming challenges similar to those many African countries face provides valuable lessons. KSP focuses on capacity building, which is crucial for sustainable development. By enhancing the skills and knowledge of local officials and institutions, KSP helps build the foundation for long-term development that is self-sustaining.

The program's methodology involves thorough research and tailored solutions specific to the needs and conditions of the partner countries. This customization ensures that the assistance provided is relevant and effective, rather than a one-size-fits-all approach. KSP covers a wide range of sectors including governance, education, healthcare, and infrastructure. This holistic approach helps address multiple facets of development simultaneously, promoting balanced and comprehensive growth. KSP emphasizes partnerships with local governments and institutions, fostering a sense of ownership and collaboration. This partnership model is crucial for the legitimacy and sustainability of development projects.

## 2) Recommendations for Enhancing the Quality of KSP to Africa

As described above, Korea's KSP strategy offers a unique and potentially powerful approach to ODA in Africa. This strategy aims to support sustainable development in African countries by leveraging Korea's distinctive development experience.

However, there are also cautions to consider with this approach. Korea's development experience may not be directly applicable to all African countries, and the unique context and conditions of each country must be taken into account. While Korea's development experience offers valuable lessons, the historical, cultural, and socio-economic contexts of African countries can be vastly different. The strategies that worked for Korea may not always be directly applicable or may require significant adaptation.

To effectively implement the KSP strategy, the following approaches seem necessary: Firstly, KSP programs should be tailored to the specific situations and needs of each African country. By tailoring the program to each country's specific needs and context, the KSP can be more relevant and effective. This increases the likelihood that the shared knowledge will be applicable and implementable. Secondly, KSP programs should be designed and implemented in close collaboration with African countries. This might involve deeper preliminary research and more extensive consultations with local stakeholders. Thirdly, KSP should be integrated with other forms of ODA to provide more comprehensive support. By integrating KSP with other forms of ODA, Korea can address multiple dimensions of development challenges simultaneously, potentially leading to more robust and sustainable outcomes. The integrated approach can enhance the efficiency of aid delivery by ensuring that knowledge sharing is directly linked to practical implementation, potentially increasing the overall effectiveness of Korea's ODA.

In these regards, Korea's KSP approach to ODA in Africa has significant

potential due to its focus on sharing practical development experience and building local capacity. However, careful attention to contextual differences, local participation, and sustainability is essential to maximize its impact. By continuously refining its approach and fostering genuine partnerships, Korea can make a substantial contribution to Africa's development journey.

## **8-2. Leveraging Korea's FTA Experience for African Development**

The Korea-Africa Summit in 2024 marks a significant milestone in the cooperation between Korea and African nations, with a focus on sharing Korea's extensive experience in concluding Free Trade Agreements (FTAs). The key highlights of this initiative include strengthening the capacity of African customs authorities and supporting the development of a One-Stop Origin Management System (OOMS).

FTAs are pivotal in fostering economic growth by eliminating tariffs, reducing barriers to trade, and promoting cross-border investments. Korea's success in negotiating and implementing FTAs has significantly contributed to its economic transformation, facilitating access to new markets, enhancing competitiveness, and attracting foreign investment (Table 3.26).

Based on this structured information, Korea can provide the following analysis and suggestions can improve Africa's trading systems under the AfCFTA. Korea's FTA negotiation experience can be highly valuable for African countries. Particularly, strategies for simultaneous FTA pursuits, industry impact analysis, and domestic stakeholder coordination can serve as important references for African countries in implementing AfCFTA. While Korea's origin management and electronic customs systems are globally recognized, their introduction to Africa requires a tailored approach considering local technological infrastructure, human capacity, and legal environments. Beyond improving customs administration, it's necessary to build systems that can handle increasing e-commerce and digital trade.

**Table 3.26. Korea's FTA Experience**

Korea's FTA Experience	<p>⟨FTA Status⟩</p> <ul style="list-style-type: none"> <li>- As of 2023, Korea has 18 FTAs with 58 countries</li> <li>- Major FTAs: Korea-EU, Korea-US, Korea-ASEAN, RCEP, etc.</li> </ul> <p>⟨Characteristics of Korea's FTA Policy⟩</p> <ul style="list-style-type: none"> <li>- Simultaneous pursuit of multiple FTAs</li> <li>- Comprehensive and high-standard FTAs</li> <li>- Balanced development of manufacturing and service industries</li> </ul>
African Trade Environment	<p>⟨African Continental Free Trade Area (AfCFTA)⟩</p> <ul style="list-style-type: none"> <li>- 54 participating countries, 1.3 billion population, \$3 trillion GDP</li> </ul> <p>⟨Key Challenges⟩</p> <ul style="list-style-type: none"> <li>- Resolving non-tariff barriers</li> <li>- Unifying complex rules of origin</li> <li>- Strengthening customs administration capacity</li> </ul> <p>⟨Digital Trade Environment⟩</p> <ul style="list-style-type: none"> <li>- Rapid growth of e-commerce</li> <li>- Lack of digital infrastructure</li> </ul>
Korea's Support for African Customs Systems	<p>⟨Strengthening Customs Authority Capacity⟩</p> <ul style="list-style-type: none"> <li>- Customs administration modernization consulting</li> <li>- Training programs for customs officials</li> <li>- Support for risk management system implementation</li> </ul> <p>⟨Support for One-Stop Origin Management System (OOMS)⟩</p> <ul style="list-style-type: none"> <li>- Sharing Korea's FTA-PASS system experience</li> <li>- Development and implementation of OOMS tailored to African conditions</li> <li>- Training on system operation and maintenance</li> </ul> <p>⟨Support for Digital Customs Systems⟩</p> <ul style="list-style-type: none"> <li>- Transfer of electronic customs system (UNI-PASS) technology</li> <li>- Support for creating a paperless trade environment</li> </ul>
Expected Outcomes	<p>⟨For Africa⟩</p> <ul style="list-style-type: none"> <li>- Trade facilitation and reduction of transaction costs</li> <li>- Increase in customs revenue and enhanced transparency</li> <li>- Improved capacity to implement AfCFTA</li> </ul> <p>⟨For Korea⟩</p> <ul style="list-style-type: none"> <li>- Expanded opportunities for entering African markets</li> <li>- Strengthened economic cooperation between Korea and Africa</li> <li>- Increased influence in global trade governance</li> </ul>

Source: Authors compiled information from various sources.

Korea can make a substantial contribution to improving the trade environment in African countries while simultaneously strengthening economic cooperation between both sides. This can also serve as an important leverage in Korea's economic diplomacy towards Africa. This initiative demonstrates Korea's commitment to sharing its development experience and technical expertise with African partners. It aligns with Korea's broader strategy of economic cooperation with Africa and positions Korea as a valuable partner in Africa's trade integration efforts.

### **8-3. Efficient Transfer of Saemaul Undong Experience to Africa**

Saemaul Undong is a rural development movement that successfully mobilized the potential of Korean rural communities in the 1970s, eradicating poverty and leading rural modernization while contributing to economic development. Policymakers and scholars from various developing countries, including Africa, are eager to benchmark the success factors of Saemaul Undong in formulating their rural development strategies. Accordingly, the Korean government recognizes Saemaul Undong as a core of ODA tool that differentiates it from other donor countries and has been implementing Saemaul Undong transfer projects in various developing countries, including Africa.

It is important to note that transferring the Saemaul Undong experience involves applying our unique rural development experience to countries with different conditions. Therefore, a 'customized' approach is necessary, fully considering the unique environment and specifics of the recipient society. The Saemaul Undong transfer project is closely related to social areas such as residents' culture, consciousness, and lifestyle, so attempting to unilaterally transplant the uniform and integrated characteristics of the Saemaul Undong experience is problematic. Therefore, the transfer of Saemaul Undong should be approached flexibly, modifying and supplementing it to

fit the recipient's situation, recognizing that it is a complex project area requiring a high level of expertise and planning.

Based on this problem awareness, this section will examine the applicability and prerequisites of the Saemaul Undong experience in Africa and explore the direction in which the transfer of the Saemaul Undong experience should be pursued. Since it is difficult for one country's specific experience to be directly applied to another country, rather than unilaterally 'transferring' our success story, it is necessary to provide 'customized' services so that it can be 'applied' to suit the recipient's situation. Through this, we aim to explore ways in which Saemaul Undong can substantially contribute to poverty eradication and self-reliant growth in African rural societies as a 'Korean-style ODA model'.

## **1) Debate on Applying Saemaul Undong Experience to Africa**

### **(1) Positive Arguments**

Rural development in Africa cannot be resolved simply by aid or investment; a 'self-reliant' rural development spirit like Saemaul Undong is needed. What Africa needs most urgently today is not 'material capital' but spiritual enlightenment for self-reliant or endogenous development, such as the basic principles of Saemaul Undong - diligence, self-help, and cooperation - and 'how to instill motivation to work hard in residents'. African farmers not only lack the spirit of self-help and self-reliance but also accept poverty as their fate, falling into helplessness. The Saemaul Undong spirit is needed to reform this pre-modern consciousness. Despite receiving large-scale aid funds from the international community, Africa has not achieved a green revolution and has fallen into a 'Malthusian trap', becoming a 'continent incapable of self-sustenance'.<sup>38)</sup>

However, the Saemaul Undong transfer project can contribute to the accumulation of 'social capital' in Africa. Social capital refers to institutional

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38) "The Malthusian Trap," thwink.org, <https://www.thwink.org/sustain/glossary/MalthusianTrap.htm> (Accessed on 15 September, 2024).

capacity or social ability, such as trust and cooperation spirit among members. For Africa to develop on its own, it needs to share Korea's experience of achieving agricultural modernization through Saemaul Undong. The fact that Saemaul Undong spread nationwide and achieved remarkable results just three years after it began in the early 1970s is the result of the eruption of social capital embedded in Korean rural communities, in addition to the government's leading role.

The Saemaul Undong transfer project is not only cost-effective in contributing to rural enlightenment and income improvement with small-scale aid funds but also a 'soft power' that can brand our development experience. The transfer of Saemaul Undong is a unique development cooperation product of Korea that can be differentiated from other donor countries with a small amount of aid, and it is a valuable national asset.

The Saemaul Undong transfer project is in line with the international community's direction of support for rural development in Africa. Saemaul Undong is evaluated as a combination of methodologies such as institutional capacity building, participatory development, and empowerment of residents, which international organizations like the World Bank and UN are promoting as rural development strategies. The FAO (Food and Agriculture Organization of the United Nations) also emphasizes that the spirit of self-help and self-reliance is needed to solve Africa's food problem rather than material (food) support. International organizations such as the UN cite Saemaul Undong as the primary contributor to the modernization of Korean rural society and actively introduce it to developing countries.<sup>39)</sup> The UN Economic and Social Commission for Asia and the Pacific (UNESCAP) has introduced Saemaul Undong as an excellent case of solving rural problems through community empowerment. The former UN Secretary-General Ban Ki-moon recommended that African countries and relevant UN agencies learn from Korea's Saemaul Undong, stating that

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39) WHO Global Status Report on Non-communicable Diseases (2018), <https://open.knowledge.fao.org/server/api/core/bitstreams> (Accessed on 15 September, 2024).



applying Saemaul Undong is necessary for poverty eradication in Africa.

## (2) Negative Arguments

Considering the institutional capacity and socio-cultural characteristics of Africa, it is unreasonable to graft Saemaul Undong. Saemaul Undong was based on a unified implementation system connecting from the national leader's strong leadership to the front-line villages and voluntary participation of residents, but it is unreasonable to expect this in Africa.

International community including the World Bank, raises empirical failure arguments, stating that they have attempted self-reliant rural development through voluntary participation of residents over the past half-century but ultimately failed. Saemaul Undong was rooted in the traditional Korean society of mutual assistance, and it is questionable whether such a tradition exists in Africa.

There are skeptical views of the transfer of Saemaul Undong, citing socio-cultural factors such as the labor values or work ethic of Africans accustomed to the natural economy. They lack the motivation to work longer hours for improving living standards or fulfilling personal desires after doing the essential amount of labor for survival. In fact, African rural residents are demanding monetary compensation or food provision in return for participating in Saemaul Undong projects and village meetings.

However, there is a position that grafting the Saemaul Undong experience is not possible because general conditions such as housing patterns, land systems, and family systems are significantly different. African rural villages are rarely in cluster forms and are mostly scattered in small units over wide areas, which is unfavorable for the construction of public infrastructure such as village roads and power transmission networks.

## (3) Authors' Opinion

It is not appropriate to deny the sharing of our experience and knowledge itself just because the initial conditions of Korea and Africa are different.

While it is true that the Saemaul Undong transfer project has limitations, as there is no perfect model that transcends time and space, Korea has accumulated empirical experience of succeeding in rural development under a similar poverty structure to Africa. It is necessary to understand that transferring development experience is not about directly delivering our development know-how, but a process of ‘creative ODA’ that flexibly applies various experiences and lessons learned during the development process, reflecting the reality of the other party.

Domestically, Saemaul Undong may be evaluated as being used for ‘political’ purposes, but it is undoubtedly a successful model of our rural development, so efforts are needed to recycle it as ‘soft power’ of Korean-style development cooperation. Saemaul Undong is not a theory but our direct experience of poverty eradication, so it is highly persuasive, and the international community highly evaluates it, so it should not be damaged or devalued. Although the government’s leading role was inevitable as Saemaul Undong was promoted as a core task of state administration, it is a fact that it decisively contributed to instilling confidence in residents and solving poverty problems through rural modernization and community development. Saemaul Undong combined the government-led top-down approach with the voluntary participation of local residents, i.e., a bottom-up approach. Rather than debating its applicability, more consideration is needed on what experiences and lessons were gained through Saemaul Undong and how to graft these onto the local community of the other party with different initial conditions. It is not desirable to generalize the possibility of transferring Saemaul Undong based on the universal nature of the entire country of the other party. It is important to find a suitable local community that can accept it and develop it as an ‘indigenous’ project. This is because Africa has diverse farming systems such as nomadic agriculture, shifting cultivation, and intensive agriculture according to climate and geographical conditions, and even within the same community, the degree of village community formation, the urgency of residents for poverty

eradication, and cultural characteristics such as residents' self-help consciousness and cooperative spirit of mutual assistance vary greatly.

## **2) Core Directions for Saemaul Undong Transfer Projects to Africa**

### **(1) Approach by Homogeneous Social Group Units**

Considering the characteristics of African rural society, it is necessary to approach in units of homogeneous societies that have the character of a common destiny community, rather than at the whole country level. African rural societies have very distinct characteristics of tribal-centered common destiny communities, with not only internal cohesion and cooperative consciousness of mutual assistance but also traditional leadership. Recalling the strong regional bond and cohesion, and traditional leadership that were the sources of Saemaul Undong's success, these conditions are factors that increase the absorptive capacity of Saemaul Undong. In African rural societies, large-scale social community values are not formed, and 'social capital' is accumulated mainly in units of small tribes or grassroots societies, so it is desirable to make these villages the primary transfer target areas.

The primary strength of the approach of targeting homogeneous social group units in implementing Saemaul Undong in Africa lies in its recognition of Africa's diverse social landscape. Unlike Korea in the 1970s, which was relatively homogeneous, Africa is characterized by a wide array of ethnic groups, languages, and cultural traditions. By focusing on homogeneous units, the Saemaul Undong principles can be adapted more precisely to local contexts, potentially increasing their effectiveness and sustainability.

This approach also aligns well with the communal nature of many African societies. The emphasis on collective action and community development in Saemaul Undong may resonate more strongly within groups that already have strong social bonds and shared cultural values (Table 3.27).

**Table 3.27. Approach by Homogeneous Social Group Units in Saemaul Undong Projects**

Rationale for This Approach	<ul style="list-style-type: none"> <li>- Cultural Coherence: Homogeneous groups often share common values, traditions, and decision-making processes.</li> <li>- Social Capital: Existing bonds within the group can facilitate cooperation and collective action.</li> <li>- Tailored Interventions: Allows for more targeted and culturally appropriate development strategies.</li> <li>- Conflict Minimization: Reduces potential for inter-group conflicts that could hinder development efforts.</li> </ul>
Potential Benefits	<ul style="list-style-type: none"> <li>- Increased Participation: Members may be more willing to engage in community projects.</li> <li>- Effective Communication: Shared language and cultural references can improve understanding.</li> <li>- Sustainable Outcomes: Alignment with existing social structures may lead to more lasting changes.</li> <li>- Scalability: Successful models can be replicated in similar social groups.</li> </ul>
Implementation Strategies	<ul style="list-style-type: none"> <li>- Community Mapping: Conduct thorough social and cultural mapping to identify appropriate groups.</li> <li>- Inclusive Definition: Ensure 'homogeneous' is defined broadly enough to avoid exclusion.</li> <li>- Inter-group Bridges: Create mechanisms for sharing successes and learnings between different groups.</li> <li>- Flexible Approach: Allow for adaptation based on the specific characteristics of each group.</li> <li>- Gradual Expansion: Start with clearly homogeneous groups, then gradually expand to more diverse units.</li> </ul>

Source: Authors own work.

## (2) Focus on 'Software Support'

Using our experience, we should focus on 'software' support to establish the initial conditions for rural modernization. One reason why Saemaul Undong transfer projects have not taken root so far is that they focused on 'material' support rather than a 'system approach' such as farmer organization. In the international aid community, where aid fatigue is being mentioned to the extent that it is losing vitality, our Saemaul Undong transfer can be recognized as 'soft power' that can dramatically increase the effectiveness of aid (Table 3.28). African rural problems are not issues that

**Table 3.28. Strategies for Effective Software Support in Saemaul Undong Projects**

Items	Description
Importance of Software Support	<ul style="list-style-type: none"> <li>- Sustainability: Focuses on building long-term capacity rather than short-term material gains.</li> <li>- Empowerment: Equips communities with knowledge and skills to drive their own development.</li> <li>- Adaptability: Allows for flexible application of principles across diverse contexts.</li> <li>- Cost-effectiveness: Often requires less financial investment than hardware projects.</li> </ul>
Key Areas for Software Support in Saemaul Undong Projects	<ul style="list-style-type: none"> <li>- Mindset Change: Fostering attitudes of self-help, diligence, and cooperation.</li> <li>- Leadership Development: Building capacity of local leaders to drive community initiatives.</li> <li>- Organizational Skills: Teaching project management, decision-making, and conflict resolution.</li> <li>- Financial Literacy: Educating on savings, budgeting, and micro-enterprise management.</li> <li>- Agricultural Knowledge: Sharing modern farming techniques and market understanding.</li> <li>- Health and Sanitation Awareness: Promoting practices for improved community health.</li> <li>- Gender Empowerment: Encouraging women's participation in community development.</li> </ul>
Strategies for Effective Software Support	<ul style="list-style-type: none"> <li>- Participatory Learning: Use interactive, hands-on methods rather than lecture-style teaching.</li> <li>- Local Context Integration: Adapt training materials to reflect local culture and challenges.</li> <li>- Train-the-Trainer Approach: Develop local trainers to ensure sustainability of knowledge transfer.</li> <li>- Peer Learning: Facilitate knowledge sharing between communities and regions.</li> <li>- Digital Tools: Utilize mobile technology for broader reach and ongoing support.</li> <li>- Demonstration Effect: Showcase successful examples to inspire and motivate other communities.</li> <li>- Continuous Support: Provide ongoing mentoring and refresher training, not just one-off sessions.</li> </ul>

Source: Authors own work.

can be solved by large-scale resource input (Big Push), which is a lesson easily learned from the results of the international community's rural development in Africa over the past 60 years. Loan-type aid causes debt problems for recipient countries, and in-kind support methods such as food provision are limited in their contribution to poverty alleviation in developing countries as they are one-time.

The emphasis on software support in transferring the Saemaul Undong experience to Africa is crucial and potentially transformative. While hardware support (like infrastructure projects) is important, it's the software elements - the changes in mindset, skills, and community dynamics - that can lead to sustainable, long-term development. The focus on software support aligns well with the core principles of Saemaul Undong, particularly the emphasis on self-help and cooperation. By prioritizing the development of human and social capital, this approach can help create the conditions for communities to drive their own development, rather than relying on external aid.

However, it's important to recognize that effective software support in the African context requires careful adaptation. The specific content and delivery methods need to be tailored to local cultures, languages, and existing knowledge systems. This is not about imposing Korean methods wholesale, but about finding ways to translate the underlying principles into locally relevant and actionable knowledge. One key aspect to consider is the integration of traditional African knowledge and practices with new ideas and skills. Many African communities have rich traditions of cooperation and community development that can be built upon, rather than replaced.

Another critical factor is the need for patience and long-term commitment. Changes in mindset and the development of new skills take time, and the impact may not be immediately visible. This requires a shift in how we measure the success of development projects, moving beyond short-term, quantitative metrics to more holistic, long-term evaluations. The use of technology in software support is an exciting area with great

potential. Mobile phones are widespread in Africa, offering new channels for ongoing learning and support. However, it's important to ensure that technology-based solutions don't exclude those without access, particularly women and older community members.

Nevertheless, it's crucial not to neglect the material needs of communities entirely. The most effective approach is likely one that balances software and hardware support, using tangible projects as opportunities for skill development and mindset change. By prioritizing software support in this nuanced, culturally sensitive way, Saemaul Undong projects in Africa have the potential to catalyze genuine, community-driven development that goes beyond the success of individual projects to foster a broader culture of self-help and cooperation.

### (3) Induce Voluntary Participation of Residents

The issue of local residents' participation is crucial to the success or failure of Saemaul Undong, so it is important to induce voluntary participation of residents through fostering ownership and an 'endogenous' development vision. If we try to convey our experience in a way close to promotion, it will be difficult to induce the interest and participation of the other party, so it is necessary to develop an incentive system that can clearly instill participation motivation in residents. Voluntary participation of residents is essential for Saemaul Undong projects to become 'indigenous'. Inducing voluntary participation of residents is crucial for the success and sustainability of Saemaul Undong projects in Africa, but it requires careful consideration of local contexts and challenges. The key is to strike a balance between introducing the core principles of Saemaul Undong and adapting them to local realities. This might mean reinterpreting concepts like "diligence" and "self-help" in ways that resonate with African cultural values and economic realities. One important aspect to consider is the role of women in these projects. In many African societies, women play a crucial role in community development but may face cultural barriers to

participation. Saemaul Undong projects in Africa should actively seek to empower women and ensure their voices are heard in decision-making processes. Another critical factor is the need for patience and long-term commitment. Building the trust and community spirit necessary for voluntary participation may take time, especially in communities that have experienced disappointment with previous development initiatives. It's important not to rush the process or impose unrealistic expectations.

In these regards, it's crucial to remember that "voluntary" doesn't necessarily mean "unpaid." In contexts of extreme poverty, it may be necessary to provide some form of compensation or immediate benefit to

**Table 3.29. Strategies for Inducing Voluntary Participation of Residents in Saemaul Undong Projects**

Importance of Voluntary Participation	<ul style="list-style-type: none"> <li>- Sustainability: Projects driven by voluntary participation are more likely to continue after external support ends.</li> <li>- Ownership: When residents participate voluntarily, they develop a sense of ownership over the project and its outcomes.</li> <li>- Cultural Appropriateness: Voluntary participation ensures that projects align with local values and priorities.</li> <li>- Cost-effectiveness: Resident participation can reduce project costs and increase efficiency</li> </ul>
Challenges in the African Context	<ul style="list-style-type: none"> <li>- Dependency Syndrome: Communities may be accustomed to passive receipt of aid.</li> <li>- Diverse Social Structures: African communities may have different decision-making processes than Korean villages.</li> <li>- Economic Pressures: Extreme poverty may make it difficult for residents to volunteer time without compensation.</li> </ul>
Strategies to Induce Voluntary Participation	<ul style="list-style-type: none"> <li>- Community-Led Needs Assessment: Allow communities to identify their own priorities for development.</li> <li>- Culturally Appropriate Incentives: Develop reward systems that align with local values and motivations.</li> <li>- Phased Approach: Start with small, achievable projects to build confidence and demonstrate benefits.</li> <li>- Capacity Building: Provide training and skills development as part of the project to enhance residents' capabilities.</li> <li>- Celebrate Success: Recognize and celebrate community achievements to reinforce positive outcomes.</li> </ul>

Source: Authors own work.



enable participation. This could be in the form of skills training, small stipends, or community benefits that address immediate needs while working towards longer-term goals. By focusing on these aspects and remaining flexible in implementation, Saemaul Undong projects can potentially catalyze genuine, community-driven development in African contexts, fostering the spirit of self-help and cooperation that was so crucial to Korea's rural development (Table 3.29).

## Chapter 4



# Developing Government Support Strategy through SWOT Analysis for African Market Entry

1. SWOT Analysis for African Market Entry
2. Recommended Government Support Strategies Based on SWOT Analysis



# 1. SWOT Analysis for African Market Entry

## 1-1. Opportunity

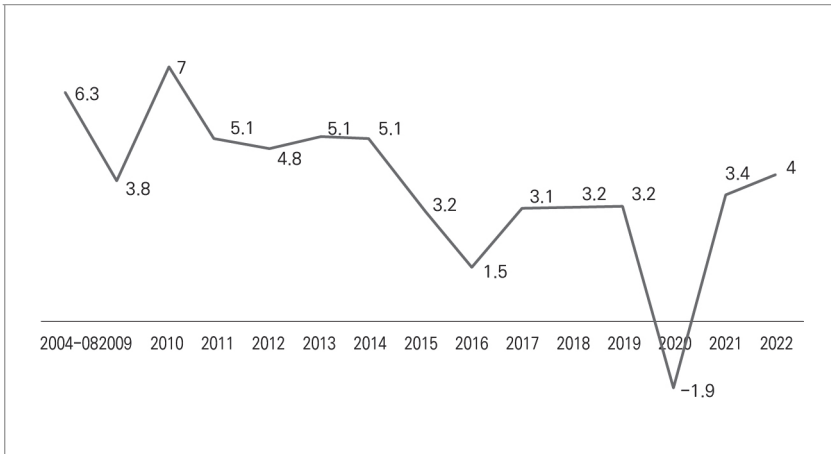
### 1) Consumer Market Potential

#### (1) Billion Consumer Market

In the 2000s, Africa began to enter a growth trajectory based on political stability. Of course, the embers of conflict are still not extinguished in some countries, but the continent as a whole is showing an incomparably stable appearance compared to the past. Based on this, the African economy has shown remarkable economic growth since the early 2000s, as depicted in Figure below. This represents an economic growth that has not been experienced in the past (1980-1989: 1.8% and 1990-2000: 2.6%) (Figure 4.1).

Figure 4.1. Africa's real GDP growth rate

(Unit: %)



Source: IMF (2023), "Regional Economic Outlook: Sub-Saharan Africa."

Africa's population continues to grow, attracting attention as a next-generation global consumer market. The African consumer market is experiencing rapid growth, particularly in sectors such as food and beverages, clothing and footwear, and home appliances. The growth potential of the consumer market in Africa stems from its population. Currently, Africa's population stands at 1.4 billion, equivalent to that of China (1.4 billion) and India (1.4 billion). According to the World Population Outlook report by the United Nations Economic and Social Administration (UN/DESA), Africa's population is projected to surpass 2.4 billion by 2050, accounting for approximately 25% of the world's population.

## (2) Urbanization and Middle-class population growth

Another demand factor driving Africa's development is urbanization and the growth of the middle class, which contributes to the consumer population. The proportion of Africa's population residing in urban areas has been steadily increasing and currently surpasses 40%.<sup>40)</sup> Although Africa's urban population ratio is still lower compared to Latin America (79.5%) and Asia (47.5%), the pace of urbanization is rapidly advancing. Africa is experiencing the fastest urban population growth among all regions, and it is projected that the proportion of urban dwellers will reach 50% by 2030 and 60% by 2050. By 2025, the number of African cities with a population exceeding 1 million is expected to surpass 80, with the emergence of numerous large cities. Lagos (Nigeria), Cairo (Egypt), and Kinshasa (Democratic Republic of Congo) have already transformed into megacities with populations exceeding 10 million, and their populations are expected to grow even further in the future. Kinshasa, located in the central region of DRC, is projected to reach a population of 16 million by 2025, surpassing Cairo and Lagos to become Africa's largest city.

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40) "Urbanization in Africa" (2012), Africa Development Bank Group, <https://blogs.afdb.org/fr/inclusive-growth/urbanization-africa-191> (Accessed on 15 September, 2024).

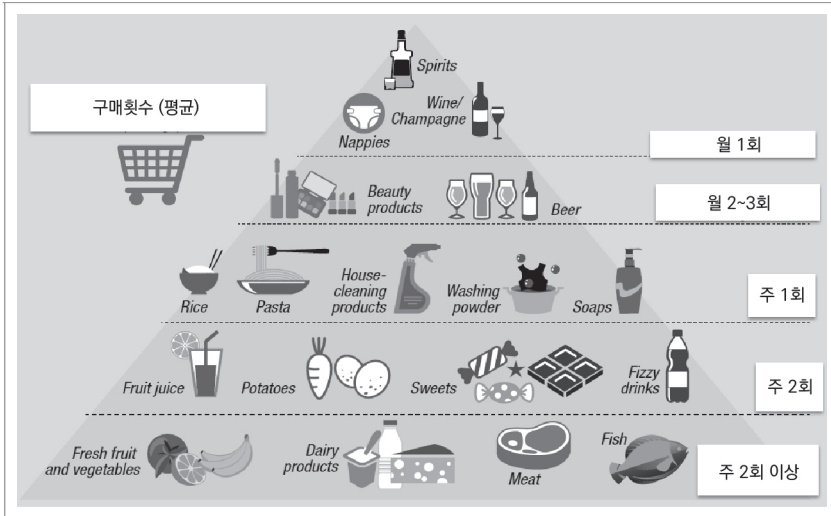
With the increase in middle-class population and urbanization, the demand for agri-food consumption in Africa is rapidly expanding. It is predicted that the number of middle-class individuals in Africa with a certain level of consumption will reach 900 million by 2040.<sup>41)</sup> As the middle-class population grows in major cities, the number of modern retail stores such as supermarkets and department stores selling agri-food products is also rapidly increasing. This trend is commonly referred to as Africa's supermarket revolution. While a significant portion of the African population still struggles with poverty, the emergence of a growing middle class and increased purchasing power in large cities is creating a new consumer base. In recent years, Western-style department stores and shopping malls have been on the rise in major African cities, providing an experience reminiscent of more developed countries. Many consumers, including young people, are enjoying these modern shopping destinations, which have become popular outing spots for families. The scene of shoppers pushing full grocery carts while using smartphones to make calls or take pictures is becoming increasingly common, marking a departure from the low-key atmosphere of the past.

Although traditional and informal markets still dominate the agricultural trade in Africa, large retailers and supermarket chains are expected to play a leading role in the future. Some projections indicate that the share of supermarket sales, particularly for fresh produce like fruits and vegetables, could surpass 20% by 2030. Figure 4.2 illustrates the consumption patterns and frequency of purchases by the middle class in Africa, with agri-food products showing a frequency of more than twice a week.

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41) <https://www.un.org/africarenewal/magazine/augusr-2013/most-africa-countries-will-be-middle-income-2040> (Accessed on 15 September, 2024).

Figure 4.2. Consumption items and purchase patterns of Africa's middle-class



Source: The Africa Report (2016).

## 2) Critical Minerals Development Potential

The vast continent of Africa is attracting attention as a new market for resource development, given its abundant underground resources. Africa possesses substantial natural resources, including oil reserves and various metal minerals, which serve as drivers for economic growth. The strategic value of Africa stems from the vast expanse of its land, accounting for one-fifth of the world's total land area, where extensive underground resources lie. While other regions of the world also possess abundant resources, Africa still has untapped areas that remain undeveloped due to factors such as civil conflicts, inadequate infrastructure, lack of relevant technologies, and investment funds. This presents Africa with significant development potential.

In terms of resources, the concentration of oil and gas is primarily found in the northern regions (Algeria, Libya, Egypt) and the western regions

(Nigeria, Angola, Ghana, Equatorial Guinea). Metal mineral resources are concentrated in South Africa and the DRC. Currently, Africa's confirmed crude oil reserves account for 5% of the world's total, but there are significant undeveloped oil fields, suggesting that the resource development boom will continue with sufficient investment support.<sup>42)</sup> The potential for the development of general metal mineral resources is also vast. Africa possesses unique reserves of diamonds, cobalt, and chromium, as well as substantial resources such as uranium, nickel, and bituminous coal. The Sahara region is particularly rich in mineral resources, while South Africa stands out as a country with diverse mineral resources, including precious metals and various non-ferrous metals. It is considered to have the highest potential for resource development worldwide, with platinum, manganese, chromium, and gold ranking as the world's largest reserves. Other resources, such as titanium, and vanadium are also abundant.

Besides South Africa, the DRC garners attention as a resource-rich country globally. The DRC is rich in valuable self-load resources, including diamonds, gold, cobalt, copper, coltan, zinc, and cadmium. Coltan, a key component of mobile phones, is derived from tantalum, with an estimated 80% of the world's coltan reserves located in the DRC. Numerous mineral resources are distributed throughout Africa, with countries like Botswana, Zambia, Zimbabwe, and Madagascar forming one of Africa's largest mineral belts in the southeastern region. This area is abundant in resources such as precious metals, uranium, copper, cobalt, bituminous coal, and nickel.

### **3) Infrastructure Development Potential**

Africa has the potential for rapid growth not only in resource development but also in the infrastructure construction market. African countries are focusing on national reconstruction based on political stability,

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42) IEA50, "Where does Africa get its oil?" <https://www.ica.org/regions/africa/oil> (Accessed on 30 August, 2024).

including the end of civil wars. This reconstruction effort is centered around large-scale infrastructure projects such as roads, railways, ports, and power facilities, leading to a construction boom. Recently, urban infrastructure expansion projects have also gained momentum to meet the development needs of rapidly increasing urbanization.

Looking at the proportion of urban population, which indicates quantitative urban growth, Africa currently stands at 40%, which is lower compared to other regions. However, the recent pace of urbanization in Africa is among the fastest in the world, along with Asia. The United Nations projects that Africa's urban population will increase from 40% in 2020 to 56% by 2050, adding nearly 950 million urban dwellers.<sup>43)</sup> Many African countries, including Ethiopia and Nigeria, are rushing to introduce modern public transportation systems such as subways and Bus Rapid Transit (BRT) to solve traffic congestion problems in major cities.

Moreover, they are presenting urban development blueprints that encompass not only transportation infrastructure but also water and sewage systems, health and sanitation infrastructure, housing development, and industrial complex development for urban-based production infrastructure. Projects aimed at connecting major hub cities in Africa for regional integration are also gaining momentum. If these enter a full-fledged stage, a large-scale infrastructure construction boom is expected to form. A significant portion of Africa's transport infrastructure was built during the European colonial era for the purpose of resource transportation, concentrated in specific areas (mainly from resource development urban areas to ports). As a result, inland transportation connecting countries within the region has lagged significantly behind, which still acts as the biggest obstacle to regional integration in Africa today.

To overcome this problem, the trans-Saharan infrastructure development

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43) Migration and urbanization trends in Africa (2022), <https://www.unctad.org/Pragna-Rugunan-Migration-and-Urbanization-Trends-in-Africa.pdf> (Accessed on 15 June, 2024).



plan currently being pursued aims to establish development corridors that not only connect major hub cities but also link major trade hubs and markets within the region. The potential for infrastructure development in Africa is immense, driven by rapid urbanization, economic growth, regional integration efforts, and the need to address historical infrastructure deficits (Table 4.1). African infrastructure market presents significant opportunities for Korea’s construction firms.

**Table 4.1. Overview of infrastructure development potential in Africa**

Transportation Infrastructure	<p>⟨Roads⟩ Many African countries are investing in major highway projects to connect cities and improve rural access. For example, the Trans-African Highway network aims to connect major cities across the continent.</p> <p>⟨Railways⟩ There’s a renewed focus on rail development, with projects like the Standard Gauge Railway in East Africa linking Kenya, Uganda, and Rwanda.</p> <p>⟨Ports⟩ Modernization and expansion of ports are underway in many Africa countries.</p> <p>⟨Airports⟩ Many countries are building or upgrading airports to boost tourism and trade.</p>
Energy Infrastructure	<p>⟨Renewable Energy⟩ Africa has vast potential for solar, wind, and hydroelectric power. Africa has 40% of the world’s solar potential, but only 1% of global solar generation capacity.</p> <p>⟨Power Grids⟩ There’s a push for better power distribution networks, including cross-border connections to create regional power pools.</p>
Urban Development	<p>⟨Smart Cities⟩ Countries like Kenya (Konza Techno City) and Ghana (Hope City) are planning technologically advanced urban centers.</p> <p>⟨Housing⟩ Large-scale affordable housing projects are being initiated in countries like South Africa and Nigeria to address rapid urbanization.</p>
Digital Infrastructure	<ul style="list-style-type: none"> <li>– Many countries are investing in broadband networks and data centers to boost internet connectivity and support the growing tech sector.</li> <li>– Internet penetration in Africa was 43% in 2021, compared to the global average of 66.2% (International Telecommunication Union)</li> </ul>
Regional Integration Projects	<p>The Program for Infrastructure Development in Africa (PIDA) is spearheading cross-border projects to enhance regional connectivity</p>

Source: African Development Bank (AfDB) (2023), African Economic Outlook; International Renewable Energy Agency (IRENA) (2023), Renewable Energy Statistics report; International Telecommunication Union (ITU) (2023), "Measuring digital development: Facts and figures" report (Accessed on 31 July, 2024).

## **1-2. Threat**

In Africa, there are significant national risks associated with political instability, economic uncertainties, exchange rate fluctuations, credit risks, government contract breaches, acceptance and expropriation, nationalization, currency exchange restrictions, remittance limitations, and changes in licensing regulations. While there are numerous investment opportunities in the region, many investors are hesitant to commit due to the multitude of threats present. Doing business in Africa can indeed be seen as a venture investment, given the inherent risks and uncertainties involved.

### **1) Political instability**

Africa presents new opportunities as a frontier market; however, it is accompanied by a multitude of risks. Political instability, including wars, civil conflicts, riots, and terrorism, still persists in many countries. While the African continent as a whole is experiencing a phase of relative stability in the 21st century, local political instability remains a persistent issue, and there is a risk of recurrence in some areas. While countries like South Africa, Tanzania, Botswana, and Mauritius enjoy political stability, many other nations are grappling with ongoing political unrest or face the potential for civil war.

Ethiopia, the second-most populous country in Africa with nearly 100 million people, holds significant development potential. However, it continues to be plagued by tribal conflicts. The Ethiopian population is largely composed of the Amhara (27%), Tigray (6%), and Oromo (35%) ethnic groups, and tensions and hostilities among them are deeply entrenched. Moreover, several countries, including the Democratic Republic of Congo (DRC), Sudan, South Sudan, and Nigeria, continue to experience political unrest due to tribal conflicts or rebel terrorism.

The underlying causes of political instability in Africa can be attributed to absolute poverty, chronic issues such as tribal conflicts, religious

confrontations, and corruption within state institutions. These complex challenges make finding a solution within a short timeframe challenging. In many African countries, the national governance systems are not functioning effectively, and 25 African nations are included among the 47 countries listed as fragile states by the OECD (OECD 2024).<sup>44</sup> It is crucial to acknowledge and navigate these risks when considering investment or engagement in African markets, as political instability can impact economic growth and business operations.

## 2) Business risk

Africa faces numerous business risks that directly or indirectly impact corporate management. Unilateral contract cancellations, contract violations, and difficulties with remittances are prevalent challenges faced by foreign companies operating in Africa. While free remittance is legally guaranteed, the actual process often encounters obstacles due to backward business culture and lack of trust. Trust deficit is a significant business risk that is difficult to quantify objectively but is widely acknowledged as a major hurdle for companies entering Africa. Instances of fraud, both direct and indirect, are also common among companies operating or attempting to enter African markets.

Customs clearance poses a major obstacle to entering Africa, despite efforts to promote market integration by reducing tariff barriers. Complex customs procedures and high non-tariff barriers continue to impede trade and restrict corporate activities.

Corruption, including bribery, is a serious problem in Africa. Bribes are often seen as essential at various checkpoints and border crossings. For instance, trucking from the Yopougon industrial area outside Ivory Coast's capital (Abidjan) to Bouake, the country's second-largest city, involves

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44) OECD, "Development finance institutions and private sector development," <https://web.archive.org/temp/2024-02-15/237075-development-finance-institutions-private-sector-development.htm> (Accessed on 2 September, 2024).

bribes at almost every inspection point, with as many as nine police checkpoints requiring payment. Corruption permeates African society, ranging from high-ranking officials to low-ranking individuals, becoming deeply ingrained in various aspects of business activities such as telecommunications, infrastructure connections, construction licenses, and import licenses.

Africa's national and social vulnerabilities, combined with widespread corruption, create a cycle of underdevelopment. Corruption is not limited to high-ranking officials but extends throughout society, with routine corruption practiced by low-ranking government officials. This deeply ingrained corruption, along with high transportation costs, frequent power outages, high crime rates, and unstable security conditions, hinders African development and acts as a deterrent to corporate investments. Furthermore, Africa's poor physical infrastructure exacerbates these challenges, with numerous "invisible risks" that cannot be enumerated individually. Ultimately, these risk factors increase business costs, making Africa one of the highest-cost production regions globally. While Africa is often cited for its low wages, this advantage is limited to specific countries such as Ethiopia and Malawi. Many other African countries, including South Africa, have high minimum wage levels that make it challenging to maintain price competitiveness. In the case of South Africa, politicized labor unions and labor laws tailored for worker protection, often considered excessive, diminish its investment attractiveness.

### **3) Poor infrastructure**

Infrastructure plays a crucial role in industrial development, serving as the "artery of the national economy." However, Africa's infrastructure conditions are severely underdeveloped, resulting in excessive logistics costs that hinder corporate activities. Compared to regions with similar income levels, such as South Asia, Africa's infrastructure lags far behind. For instance, Africa has a road pavement ratio of 20-25% and only half the

electricity generation capacity of South Asia.<sup>45)</sup> Paved roads, which are vital for cargo and passenger transport, are significantly lacking in comparison to other low-income countries. According to a World Bank report, the cost of shipping a car from Japan to Cote d'Ivoire in Western Africa is \$1,500, while the cost of transporting it from Cote d'Ivoire to Ethiopia (Addis Ababa) is \$5,000.<sup>46)</sup> Inland African countries face transportation costs that can account for up to 70% of the export price when transporting goods to coastal areas. This highlights the challenging transportation network situation in Africa, leading to disconnection from the global market and hindering smooth trade activities.

Similar circumstances can be observed in the railway sector, where most of Africa's railways were built during the European colonial period. These railways have suffered from poor maintenance since gaining independence in the early 1960s, resulting in severe deterioration. Many African railways are disconnected, with over 70% of railways in countries like Uganda and Angola not functioning properly. Moreover, automatic control systems often do not operate effectively, relying heavily on manual signaling. The average speed of African railways is significantly low, operating at speeds of 30 to 35 kilometers per hour.<sup>47)</sup>

The power situation in Africa is also challenging, with nearly 60% of the people, or two out of three households, lacking access to electricity.<sup>48)</sup> Africa's electricity production has not kept pace with population growth, further reducing per capita electricity consumption. Chronic power shortages and inadequate transmission and distribution systems are the primary causes of this issue. The total power generation capacity in the

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45) Enhancing the Climate Resilience of Africa's Infrastructure: The Roads and Bridges Sector (worldbank.org) (Accessed on 15 June 2024).

46) Why is the transit of goods so expensive in Central Africa? UNCTAD 9 (Accessed on 30 August, 2024).

47) Third-World Train Speeds, Pedestrian Observations (Accessed on 30 August, 2024).

48) <https://www.afdb.org/en/the-high-5/light-up-and-power-africa> (Accessed on 30 August, 2024).

region is approximately 80 GW, similar to that of South Korea, but drops to half (40 GW) when excluding South Africa. Frequent power outages have forced companies to rely on expensive diesel generators, becoming a cost burden that reduces their competitiveness. This reliance on alternative power sources limits productivity and hampers the overall business environment.

### **1-3. Strength**

#### **1) High brand of Korean goods**

While Korean products may face some challenges in the overall African market, Korean white home appliances, including mobile phones, washing machines, air conditioners, and refrigerators, have gained popularity. Efforts to expand the market further can yield positive results. In particular, Korean mobile phone brands, such as Samsung and LG, have established a unique position in the African market as global brands. Samsung Electronics, in particular, surpasses competitors like Apple and Nokia, securing the top position in the mobile phone sector. Samsung Electronics consistently ranks in the top three in the “Top 100 African Brands,” with LG ranking 14th. This brand survey, conducted by South Africa’s non-profit organization “Brand Africa,” covers 29 countries across the continent and is considered the most comprehensive brand survey in Africa. Samsung Electronics and LG Electronics are regarded as high-end brands in various African markets for white home appliances, including Nigeria.<sup>49)</sup> They have maintained a strong brand value through aggressive marketing strategies. These strategies include introducing advanced features, emphasizing design, launching region-specific products, and extending warranty repair periods. These companies have demonstrated a good understanding of changing

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49) “Samsung, LG named among top 10 brands in Africa” (2018), The Korea Times, [https://www.koreatimes.co.kr/www/tech/2024/09/129\\_249890.html](https://www.koreatimes.co.kr/www/tech/2024/09/129_249890.html) (Accessed on 15 September, 2024).

**Table 4.2. Status of Korean Products in Africa**

Overview	<ul style="list-style-type: none"> <li>- Korean products, particularly from major brands like Samsung and LG, have gained significant traction in African markets over the past two decades.</li> <li>- Their reputation for quality, affordability, and innovation has positioned them as strong competitors to both Western and Chinese brands.</li> </ul>
Major Korean Brands in Africa	<p>⟨Samsung⟩</p> <ul style="list-style-type: none"> <li>- Market leader in smartphones across many African countries</li> <li>- Strong presence in consumer electronics (TVs, refrigerators, air conditioners)</li> <li>- Significant player in the B2B market with digital signage and enterprise solutions</li> </ul> <p>⟨LG⟩</p> <ul style="list-style-type: none"> <li>- Competitive in the home appliance market (refrigerators, washing machines, air conditioners)</li> <li>- Growing market share in televisions and monitors</li> <li>- Presence in the smartphone market, though less dominant than Samsung</li> </ul> <p>⟨Hyundai and Kia⟩</p> <ul style="list-style-type: none"> <li>- Increasing market share in the automotive sector</li> <li>- Known for affordability and fuel efficiency</li> <li>- Popular in countries like Egypt, South Africa, and Nigeria</li> </ul> <p>⟨Other Korean Brands⟩</p> <ul style="list-style-type: none"> <li>- Daewoo: Present in electronics and automotive sectors</li> <li>- POSCO: Involved in steel and infrastructure projects</li> <li>- Korean cosmetic brands: Growing popularity, especially in North Africa</li> </ul>
Market Penetration by Sector	<p>⟨Electronics and Mobile Devices⟩</p> <ul style="list-style-type: none"> <li>- Samsung held over 40% smartphone market share in several African countries (2020)</li> <li>- LG among top 5 TV brands in major African markets</li> </ul> <p>⟨Home Appliances⟩</p> <ul style="list-style-type: none"> <li>- Korean brands collectively hold significant market share, varying by country (estimated 20–30% in major markets)</li> </ul> <p>⟨Automotive⟩</p> <ul style="list-style-type: none"> <li>- Hyundai and Kia have seen year-on-year growth in sales across the continent</li> <li>- In some countries like Egypt, Korean brands are among the top 5 selling car brands</li> </ul>
Brand Perception	<ul style="list-style-type: none"> <li>- Viewed as high-quality and technologically advanced</li> <li>- Positioned between premium Western brands and budget Chinese offerings</li> </ul>
Competition (Chinese Brands)	<ul style="list-style-type: none"> <li>- Increasing competition from brands like Tecno, Infinix in the smartphone market</li> <li>- Haier, Hisense challenging in the home appliance sector</li> </ul>

Sources: International Data Corporation (IDC) - Quarterly Mobile Phone Tracker. Euromonitor International - Consumer Appliances in Africa reports. Various national automobile associations' annual reports. Market research reports from firms like McKinsey, Boston Consulting Group on African consumer markets.

consumer preferences in Africa. While African consumers traditionally valued price, durability, and brand when purchasing home appliances such as refrigerators, there has been a shift towards prioritizing design and advanced features, similar to their approach to mobile phone purchases.

For example, Samsung Electronics organized an Air Conditioner (AC) forum in Lagos and launched a large-capacity air conditioner equipped with a smart inverter. LG Electronics is expanding its market presence by introducing a brand called Mosquito Away, which includes an ultrasonic device designed to eliminate mosquitoes. These efforts cater to specific needs and preferences in the African market, contributing to the success of Korean white home appliances in the region.

This comprehensive overview highlights the strong presence and growing influence of Korean products in various African markets. Here are some key takeaways:

- (1) **Market Leadership:** Korean brands, especially Samsung in the smartphone sector, have achieved market leadership positions in several African countries. This success extends to other electronics and home appliances.
- (2) **Diverse Presence:** Korean products are not limited to one sector. They have a strong presence in electronics, home appliances, and are growing in the automotive sector.
- (3) **Brand Perception:** Korean brands are generally perceived as offering a good balance between quality and affordability. They are often positioned between premium Western brands and more budget-friendly Chinese offerings.
- (4) **Adaptation to Local Needs:** A key factor in their success has been the ability to adapt products to local conditions and preferences in African markets.
- (5) **Challenges:** While successful, Korean brands face increasing competition, particularly from Chinese companies that are aggressively expanding in Africa.



## 2) Advantages in establishing win-win cooperation partnerships

From Africa's perspective, win-win cooperation partnerships are crucial, and Korea holds advantages in building an emotional consensus with African countries. African leaders seek strong and reliable partners to meet their development needs, and they show particular interest in Korea. Despite receiving substantial aid from developed countries and China, underdeveloped African nations still struggle to escape poverty and require new economic development models. Korea possesses a valuable "national asset" with its unprecedented economic miracle achieved in just half a century. This success story enables Korea to connect with African countries on an emotional level. Many African countries aspire to learn from Korea's development experience, which includes overcoming colonial rule, war, and poverty to achieve rapid growth. They aim to emulate various Korean institutions and seek to share Korea's experience of short-term economic development under similar conditions. Both Africa and Korea share historical homogeneity in terms of experiencing colonial rule, civil war, dictatorship, and poverty. Korea's comparative advantages include its experience in economic development, successful establishment of democracy, and emotional familiarity due to shared experiences of colonialism, civil war, and poverty.

China's practical economic cooperation strategy, characterized by large-scale labor involvement, low-cost product penetration, and resource security aid, has not gained significant consensus in Africa and has even led to some "anti-China sentiment." African countries find less relevance in benchmarking development models from Western countries, such as the United States and Europe, given their painful history of slave trade and resource exploitation. The feelings toward these countries among many African people are not favorable.

Korea's industrialization and economic development differ in many

aspects from the industrialization processes of other developed countries. Korea's experience of development holds considerable advantages when it comes to sharing knowledge with African countries. While developed countries had initiated industrialization up to two centuries ago, Korea's initial industrialization process has not yet reached half a century. Being a relatively recent industrialization case, Korea can form greater consensus with African countries. Moreover, there is a significant level of sympathy as Korea's industrialization was achieved through a different approach than the "Washington Consensus" typically proposed by international development organizations. The fact that Korea accomplished economic development despite its colonial experience further distinguishes it from the experiences of developed countries.

**Table 4.3. Soft power of Korea's development experience**

Strength	Main content
Attracting attention from international arena	The experience of successful economic development in a short period of time, often referred to as a miracle, is garnering significant attention from the international community
Recent experience of economic development	Unlike advanced Western countries, industrialization in Korea began after World War II
Commonality of initial conditions	Sharing emotional consensus such as civil war/absolute poverty/colonial history
Mid-sized country experience	Benchmarking demand for developing countries is high
Experience at various stage	Gained various experiences through step-by-step development, including initial industrialization, modernization of industrial structure, privatization, openness, democratization, and knowledge information
Advantages in sharing experiences	Be free from vigilance against the dominance of great powers

Source: Authors own work.

## **1-4. Weakness**

### **1) African pessimism**

In the 2000s, Africa gained new prominence and Korea's ODA to Africa saw a significant increase. In 2006, the visit by the former president Roh Moo Hyun to Africa in four and a half centuries took place, marking the beginning of increased economic cooperation in various fields, including infrastructure development with Algeria and other African countries. Subsequently, the Lee Myung Bak government operated resource diplomacy at a pan-government level, leading to a "boom" in Korean companies entering Africa.

During this process, representatives from both the public and private sectors visited various African countries in search of business opportunities. However, it became apparent that their perception of Africa was more negative than positive. While initially viewed as an untapped market with new opportunities, as they encountered various obstacles on the ground, Afro-pessimism began to emerge. Despite Africa being recognized as the "last emerging market on Earth in the 21st century" due to recent changes on the continent, Korean companies, geographically distant and lacking experience in entering Africa, face significant challenges. The African market requires a long-term approach and perspective, but it is difficult to find Korean companies, both public and private, that acknowledge this. There is a perception that Africa is not a qualified investment destination and that the risks outweigh the need to enter the African market. This perception is not limited to public corporations. While it is necessary for public corporations to lead investment initiatives in the highly uncertain African market, practical difficulties hinder their involvement. As mentioned earlier, Korean public corporations' investments in Africa have largely been unsuccessful.

In general, achieving investment results in Africa requires long-term investment, but the evaluation criteria for CEOs of public companies tend

to be focused on short-term performance. Although it could be argued that the management evaluation criteria for public corporations should be based on long-term future values rather than short-term performance, applying this in reality is challenging. This can be considered a major weakness in Korea's entry into the African market.

## **2) Lack of cooperative infrastructure**

In the 2000s, Korea recognized Africa's strategic value and attempted economic cooperation in various fields. However, Korea's cooperation with Africa still falls short compared to other competitors. China is well-known for intensifying cooperation with Africa across multiple areas, including trade, investment, resources, and infrastructure. Through large-scale aid initiatives and high-level diplomatic visits, China has expanded its national influence on the African continent, securing a superior position in almost all fields. China's recognition of Africa's strategic value includes oversupply, energy and raw material procurement, securing infrastructure construction markets, and cooperation on the international political stage. Japan's approach to Africa has also gained momentum, especially through the Tokyo International Conference on African Development (TICAD). TICAD, a cooperative forum, has brought the Japanese government and African leaders together to promote economic and political cooperation. Japan offers various support policies for African development through TICAD, encompassing government-level cooperation and support for private sector development.

Other Asian countries such as Turkey, India, and Russia are actively participating in Africa. Turkey has increased its diplomatic presence and expanded military power in Africa, while Turkish Airlines operates in numerous African cities. India has strengthened partnerships with countries in eastern Africa and expanded its reach to the West through diplomatic and political cooperation, trade, aid, and financial support. Russia, after the collapse of the Soviet Union, initiated the "Russia-Africa Summit" to

restore cooperative relations with Africa.

In contrast, Korea is not only a latecomer in entering Africa but also lags far behind in various aspects, including financial power, diplomatic relations, and cultural influence. There is a lack of a centralized control tower for African cooperation. Although consultative bodies for Korea-Africa economic cooperation have been formed, they have not been sufficient to boost practical cooperation. Existing programs by the central ministries, such as the African Forum programs, are criticized for their lack of synergy and focus on one-off events or forms. Improved measures are needed to create organic linkage and induce private company participation, similar to Japan's TICAD, by holding industry-specific subcommittees within the Korea-Africa Forum.

To significantly enhance the quantitative and qualitative relationship of African cooperation, it is crucial to strengthen the actual cooperation base and shift towards a more comprehensive approach.

## **2. Recommended Government Support Strategies Based on SWOT Analysis**

Africa is considered the last remaining unexplored market on the planet, but it actually entails numerous risks and obstacles for conducting business in Africa. In this regard, various government-level support strategies are required for companies to enter the African market. The results of the SWOT analysis, which synthesized the strengths (S), weaknesses (W), opportunities (O), and threats (T) factors analyzed earlier, are as follows, along with the government's policy support.

**Table 4.4. SWOT analysis and Government support strategies for African market entry**

		Internal capability (Korea)	S (Strength)	W (Weakness)
		External factors (Africa)	<ul style="list-style-type: none"> <li>- High brand of Korean goods</li> <li>- Advantages in establishing win-win cooperation partnerships</li> </ul>	<ul style="list-style-type: none"> <li>- African pessimism</li> <li>- Lack of cooperative infrastructure</li> </ul>
O (Opportunity)	<ul style="list-style-type: none"> <li>- Economic growth</li> <li>- Urbanization</li> <li>- Increase of middle-class population</li> <li>- Infrastructure development potential</li> <li>- Natural resource development potential</li> </ul>		Strategies (S-O)	Strategies (W-O)
			<ul style="list-style-type: none"> <li>- Strengthening financial cooperation with DFIs (Chapter 4)</li> <li>- FTA with strategic countries</li> <li>- Supporting natural resource development by private sector</li> </ul>	<ul style="list-style-type: none"> <li>- Establishing economic cooperation infrastructure through building human network</li> </ul>
T (Threat)	<ul style="list-style-type: none"> <li>- Political instability</li> <li>- High business risk</li> <li>- Bureaucratic hurdle</li> <li>- Poor infrastructure</li> </ul>		Strategies (S-T)	Strategies (W-T)
			<ul style="list-style-type: none"> <li>- Supporting joint entry with domestic and global companies</li> </ul>	<ul style="list-style-type: none"> <li>- Strengthening in-depth research on Africa</li> <li>- Building African knowledge platform</li> </ul>

Source: Authors own work.

## 2-1. Strength-Opportunity (S-O) Strategy

### 1) Leveraging International Development Finance Institutions (DFIs)

As there are numerous risks involved in investing in Africa, it becomes challenging for policy financial institutions such as the Export-Import Bank of Korea and the Korea Trade Insurance Corporation to independently provide finance. Therefore, policy considerations are necessary to support the entry of domestic companies into Africa through financial cooperation, specifically co-financing with DFIs. Participating in projects led by development financial institutions through co-financing can serve as leverage, offering opportunities for domestic companies to participate in projects.

## 2) FTA with strategic countries

To elevate economic cooperation with Africa, it is essential to establish a framework for economic collaboration, such as a Free Trade Agreement (FTA). This study proposes an FTA with Egypt, which is regarded as the largest hub country in Africa. Egypt is actively pursuing significant national projects aimed at propelling itself into the top 30 countries globally. As an emerging market with high development potential, it is crucial to establish an institutional cooperation framework accordingly.

Korea's exports to Egypt currently stand at around \$1.6 billion, which is relatively modest. However, considering the strong preference for Korean product brands in Egypt, there is ample opportunity to expand exports significantly. Korea's main exports to Egypt consist of automobiles and parts, electronics and parts, and industrial machinery, while its major imports include oil, agricultural products, and clothing.

Egypt boasts the largest domestic market in the Middle East and North Africa (MENA) region and holds substantial development potential. As of 2020, Egypt's population reached approximately 100 million, making it the largest in the MENA region. Additionally, its GDP of \$360 billion ranks fourth in the MENA region. Egypt benefits from a young workforce, with individuals under the age of 25 accounting for 50% of the total population.<sup>50</sup> Geographically, Egypt enjoys a strategic advantage by connecting the Arabian Peninsula, Africa, and Europe, where GCC countries are situated. Despite the economic setbacks caused by political and social turmoil triggered by the Arab Spring, Egypt's economic growth has accelerated in recent years as the political situation stabilized. Egypt serves as a manufacturing hub in North Africa. Unlike other MENA countries, Egypt has developed manufacturing capabilities across various sectors, including

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50) "Young Workers and the Labor Market in Egypt: Persistent Inequality" (2020), ALTERNATIVE POLICY SOLUTIONS, <https://aps.aucegypt.edu/en/articles/512/young-workers-and-the-labour-market-in-egypt-persistent-inequality> (Accessed on 15 September, 2024).

food industry, textiles, automobiles, electronics, pharmaceuticals, petrochemicals, cement, and steel. Egypt's manufacturing production scale, based on added value, is the second largest in the MENA region after Saudi Arabia, significantly surpassing countries like Algeria, Iran, and the UAE. Moreover, Egypt serves as a production base for entering the EU market, benefitting from its low-wage and abundant labor force. Through an FTA with the EU (announced in June 2004), Egypt can export to the EU without tariffs.

Korean companies such as Samsung Electronics and LG Electronics have been making significant investments in Egypt, utilizing it as a production base. Hyundai Motor manufactures cars locally using the CKD (Complete Knock Down) method, which involves exporting parts and assembling them at the destination. Samsung Electronics established a production plant in southern Cairo in 2012, producing home appliances such as TVs, computer monitors, refrigerators, washing machines, and air purifiers. Over 80% of their production is exported to other Middle East and North African countries. Samsung Electronics plans to invest an additional \$84 million over the next five years to expand its production facilities, particularly for TVs.<sup>51)</sup> Given the high tariffs on TV imports, the majority of supply is sourced through local production. LG Electronics has had a production base in Egypt for a considerable period and currently produces 1.3 million TVs and 100,000 washing machines annually. Apart from meeting domestic demand, it exports 70% of its total production to Middle East and African countries. LG Electronics has formulated a strategy to strengthen its investment in Egypt, positioning it as a key production base and a gateway to the Middle East and Africa market. Their initial focus will be on promoting tablet PC production.

Various domestic industries, including the Korea Chamber of Commerce and Industry, have emphasized the necessity of a Korea-Egypt FTA. The

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51) egypt Business Directory, <https://www.egypt-business.com/news/details/1406-samsung-exports> (Accessed on 15 September, 2024).



government is also engaged in discussions regarding this matter. In September 2021, the foreign ministers of both countries acknowledged the importance of signing an FTA and agreed to establish an MOU on the feasibility of a Korea-Egypt FTA.

Egypt has indeed signed Free Trade Agreements (FTAs) with various economic zones, including the European Union (EU) and Turkey. These FTAs pose challenges to the competitiveness of Korean companies seeking to enter the Egyptian market. The influence of the Egypt-EU FTA, in particular, has resulted in a decline in the competitiveness of Korean exports such as passenger cars, mechanical parts, medical devices, and consumer goods. As a result, the market share of Korean products in Egypt has been decreasing.

### **3) Supporting the Private Sector's Critical Minerals Development**

The value of resources is prone to change over time, and currently, the global resource market is undergoing a transformation as the world moves towards carbon neutrality and clean energy. There is a consensus that while the 20th century was dominated by oil, the 21st century will be characterized by “minerals for energy conversion.” These minerals, also known as “strategic minerals” or “future minerals,” are abundant in Africa. Africa is rich in various types of resources. The continent boasts abundant reserves of platinum, cobalt, manganese, chromium, uranium, copper, nickel, and bauxite. These resources play significant roles in different industries and have economic importance on both regional and global scales. Africa's resource wealth positions it as a key player in the global market and underscores the potential for economic development and investment opportunities in the continent.

Considering that the international resource market is inherently unstable, with price disruptions occurring due to supply instabilities, it becomes

necessary to establish mechanisms to absorb the impact of supply chain instability through direct development. The current Korean government has embraced the “recovery of overseas resource industrial ecosystem centered on the private sector” as a national priority. However, relying solely on the “private power” has its limitations, and the support and involvement of the government and public enterprises remain crucial. Further details regarding this matter are covered in Chapter 5 of this study.

## **2-2. Strength-Threat (S-T) Strategy: Strategic Alliances with Global Enterprises**

Global companies maintain a strong presence in the African market, based on their advanced technology, financial resources, and established history of market entry. Chinese companies, in particular, are aggressively expanding their operations in nearly all African countries, supported by substantial funding from their government. Additionally, companies from Turkey, Russia, and India are also joining the competition, turning Africa into a global battleground.

Considering this landscape, it is undoubtedly challenging for Korean companies, who are latecomers, to penetrate the African market. Therefore, it is crucial to devise strategies that involve risk-sharing through collaborative entry with companies from advanced countries. These measures aim to compensate for the shortcomings of Korean companies, which may face limitations in terms of capital, technology, information, and business experience. Collaborating with companies from advanced countries through consortiums is an effective approach to alleviate the burden of market entry by dispersing risks and facilitating financing. While the decision on how to enter overseas markets ultimately lies with each company, it is worth noting that Africa presents complex national risks compared to other emerging markets, making it difficult for Korean companies to venture into the region alone.

## **2-3. Weakness-Opportunity (W-O) Strategy: Building Human Networks**

To enhance cooperation with Africa, it is crucial to establish a multi-layered human network that can provide support. Human network building involves not just interpersonal exchanges but also the identification of influential individuals in various fields and the continuous cultivation of relationships with them.

Since entry into the African market is often influenced by non-economic factors, it is important to build a human network with high-ranking government officials, state-run companies, and community leaders. In many African countries, political considerations often outweigh economic factors, and power is concentrated among specific elites who have significant influence over government budgets, core projects, infrastructure development, and resource extraction. Establishing connections with key figures in Africa serves as a safeguard against invisible barriers and risks, such as business delays, changes in business conditions, project cancellations, and restrictions on remittances. Moreover, human network building plays a critical role not only in political and economic exchanges but also as a “strategic communication channel” that fosters mutual trust through social, cultural, linguistic, and artistic exchanges.

Initially, it is essential to establish a database of key individuals in each major African country and develop a human network tailored to the specific characteristics of each country. For instance, a project-oriented short-term approach may be necessary for countries with a high risk of regime instability, while a long-term perspective can facilitate broader exchanges across political, economic, social, and cultural domains. However, it is important to consistently foster the foundation of human cooperation with a long-term view, as it relies on mutual trust and familiarity. Adopting a one-dimensional approach, such as strengthening human cooperation only during times of rising commodity prices or project demand, does not yield

significant results.

Additionally, establishing a human network with local or tribal leaders is crucial. Understanding their connections with community leaders and senior officials at central or local government levels is necessary. Africa has a political landscape rooted in tribalism, where tribal or ethnic identity often carries more weight than the concept of a nation-state. This directly and indirectly impacts business activities. Even if a business license is obtained from a government department, cooperation with community leaders (such as tribal chiefs) is vital during the actual project implementation process. African communities have strong communal bonds and exhibit a high level of trust in traditional leaders, including tribal chiefs, making engagement with them essential for successful operations.

Another aspect to consider is the establishment of the proposed 'Africa Community in Korea' (ACK). Currently, there is a significant African people residing in various regions of Korea, and it is important to consider organizing them and utilizing their network. This community can be connected with small and medium-sized enterprises, aiding them in pioneering the African trade network. Given their entrepreneurial nature and ability to identify new business opportunities, they can help overcome the challenges of entering African markets through the establishment of human networks with them. With the growing interest in Africa, more companies are attempting to enter the region for trade and investment, yet they lack a practical human network to help. Therefore, it is crucial to provide support by offering office space for regular gatherings and facilitating meetings between Korean companies and members of the Africa Community in Korea.

Lastly, the establishment of a human network through local residents or on-ground personnel should be considered. From Korea's perspective, Africa presents relatively less experience and history compared to other developing countries. Therefore, networking with Korean companies or Korean individuals already present in Africa becomes essential. They

possess valuable experience and personal relationships with Africans, which can be leveraged to establish a foundation for human exchanges with talented individuals in the country. The firsthand experience and human network they have accumulated can be considered a valuable national asset. To meet the information needs of Korean companies with limited experience in entering Africa, it is crucial to provide real-time and dynamic information, rather than relying solely on written documents. Inviting these experienced individuals to Korea and regularly organizing seminars, focused on specific regions or major countries in Africa, will help supply up-to-date information and foster meaningful exchanges.

## **2-4. Weakness-Threat (W-T) Strategy**

### **1) Strengthening in-depth research on Africa**

It is true that Africa is an immature market and often lacks recognition as a significant economic cooperation partner. However, it is also true that there is a lack of understanding and numerous misconceptions about Africa. This lack of understanding extends beyond personal levels and affects corporate and government interactions as well. In order to address these challenges, it is essential to strengthen the role of the “Korea-Africa Foundation” in conducting in-depth research on Africa. Recognizing Africa as a future or potential market, it is necessary to develop and implement specialized policy research programs with a medium- to long-term perspective. These programs should not only support the entry of small and medium-sized enterprises into Africa and provide trend information, but also assist the government in formulating effective policies for Africa. This approach can also contribute to enhancing the status of the Korea-Africa Foundation. The current functions alone have limitations in elevating the foundation’s status, hence the need to incorporate in-depth research capabilities that foster an “institutional understanding” of Africa and three-dimensional cooperation strategies.

Currently, the Korea-Africa Foundation utilizes overseas networks, such as diplomatic missions, to conduct policy research. However, the research functions carried out by the Korea Institute for International Economic Policy (KIEP) and the Korea Trade Promotion Agency (KOTRA) often face challenges due to turnover or changes in workplace, resulting in a lack of personnel specializing in African research. Consequently, research is sometimes conducted by treating the entire African continent as a single entity, leading to generalizations. Africa, however, is a highly diverse market, with over 3,000 different tribes and a larger land area than the United States, China, India, Europe, and Japan combined. In light of this, it is imperative to focus on Africa as an individual entity rather than a generalized concept and conduct in-depth research accordingly. By doing so, the Korea-Africa Foundation can evolve into a specialized institution in Korea that effectively assists the Korean government in establishing cooperation strategies in Africa and supports domestic companies in entering African markets.

## **2) Building African knowledge platform**

Korea and Africa face challenges in understanding each other due to their geographical distance and limited exchanges. Inter-country exchanges cannot be fully activated solely through system or government support; it requires a sufficient accumulation of knowledge and information. In light of this, it is necessary to establish an African knowledge platform that drives substantial discourse on African matters. The Korea-Africa Foundation should develop an African knowledge bank to facilitate this process. Rather than merely following African issues, the Korea-Africa Foundation should actively identify key agendas and evolve into a specialized institution that leads discussions on African matters. While it is beneficial to emphasize a practical and gradual approach, it is also crucial to prepare a comprehensive blueprint that encompasses a theoretical and grand discourse level.

The Korea-Africa Foundation must create a new momentum to guide African issues alongside its current support services. If it remains solely

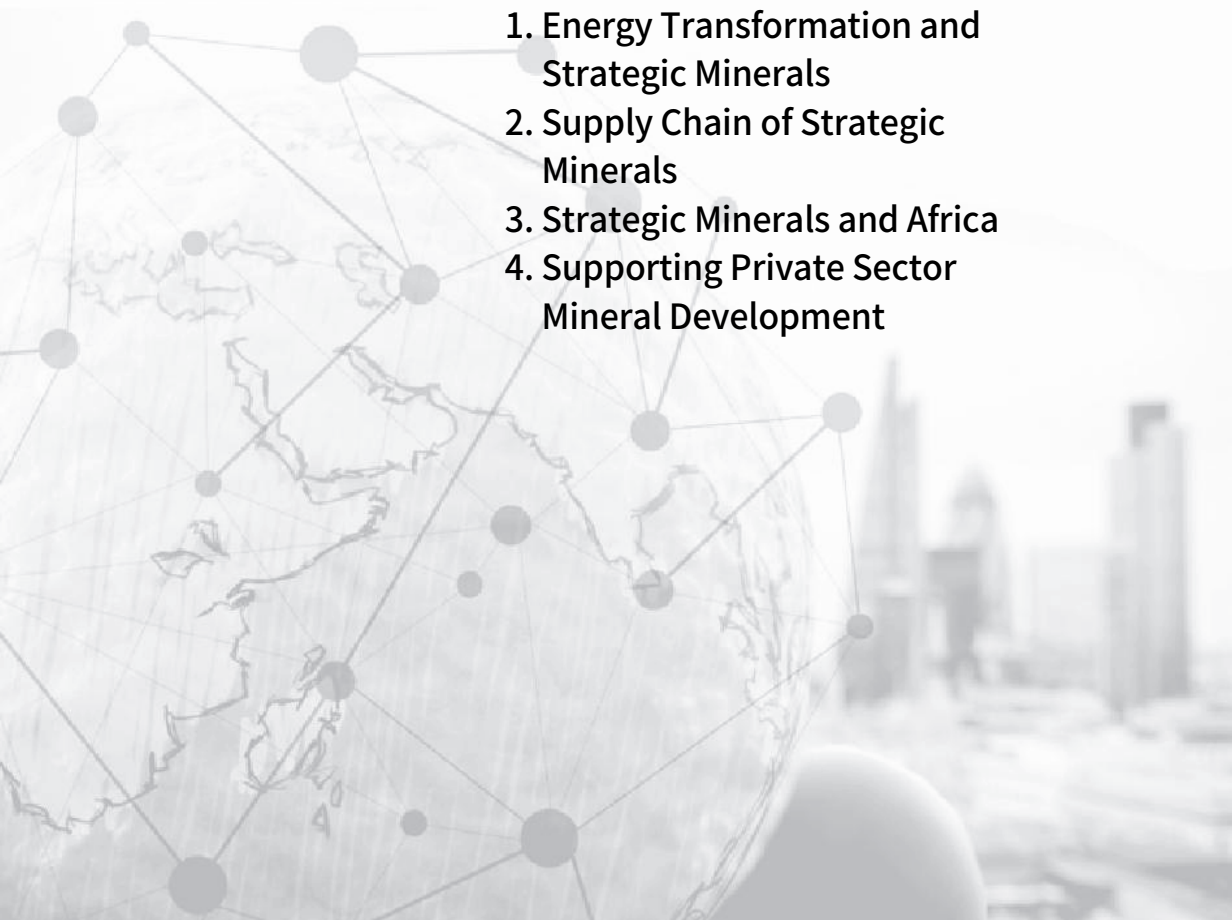
focused on support services, it will be challenging to enhance the foundation's status. Given that Africa is not a typical emerging market like Southeast Asia, it is necessary to assume a leadership role akin to that of an airport control tower. Although it may seem belated, a new roadmap is required to steer the discourse on Africa. To achieve this, it is important to establish a knowledge platform through close research collaborations with overseas think tanks specializing in African affairs. Leading substantial discourse necessitates a multidisciplinary approach, involving not only African experts but also individuals with expertise in various fields. Relying solely on expertise in one specific area is not desirable for driving significant discourse. Instead, a comprehensive approach that integrates knowledge from diverse fields is essential. This includes engaging professionals in development economics, economic growth, environmental and educational matters, administrative and national governance, and social and cultural aspects.

## Chapter 5



# Securing Reliable Critical Minerals

1. Energy Transformation and Strategic Minerals
2. Supply Chain of Strategic Minerals
3. Strategic Minerals and Africa
4. Supporting Private Sector Mineral Development





# 1. Energy Transformation and Strategic Minerals

The value of resources is bound to change with time, and today, the landscape of the global resource market is changing as the world faces a transition to the era of carbon neutrality and clean energy. There is a consensus that while the 20th century was dominated by oil, the 21st century will be dominated by ‘minerals for energy conversion.’ This includes the minerals presented in Table below, which are referred to as ‘strategic minerals’ or ‘future minerals’. According to the IEA (2021), there is an anticipated rapid increase in demand for strategic mineral resources to meet the goals of the Paris Climate Change Agreement and combat climate change. Specifically, with the rapid expansion of electric vehicle (EV) demand, the need for materials such as lithium, cobalt, nickel, copper, and graphite used in battery production is expected to surge even further. Consequently, competition to secure these resources is intensifying.

Lithium-ion batteries, which are commonly used in electric vehicles, consist of cathode materials, anode materials, separators, and electrolytes (liquid), with the most significant metal materials being utilized in cathode materials. Anode materials for electric vehicle batteries encompass seven major minerals (lithium, cobalt, nickel, copper, aluminum, manganese, and graphite). However, prices for these materials are skyrocketing due to increased demand and supply chain instability. The supply of these mineral resources is projected to face further challenges due to the global shift towards carbon neutrality and clean energy, as well as the instability caused by Russia’s invasion of Ukraine and the ongoing U.S.-China hegemony conflict. For instance, Russia, a major supplier of nickel, is facing extensive sanctions from the international community due to its invasion of Ukraine, leading to heightened supply chain instability. Russia is the world’s third-largest nickel producer, trailing Indonesia and the Philippines, and it

exports the largest amount of nickel worldwide. China, as the largest nickel importer, and Korea, as the ninth-largest nickel importer globally, are also affected by these developments.

**Table 5.1. Mineral needs vary widely across clean energy technologies**

	Copper	Cobalt	Nickel	Lithium	Rare earth	Chromium	Zinc	Platinum	Aluminum
Solar PV	●	○	○	○	○	○	○	○	●
Wind	●	○	▲	○	●	▲	●	○	▲
Hydro	▲	○	○	○	○	▲	▲	○	▲
Nuclear	▲	○	▲	○	○	▲	○	○	○
Electricity networks	●	○	○	○	○	○	○	○	●
EVs and battery storage	●	●	●	●	●	○	○	○	●
Hydrogen	○	○	●	○	▲	○	○	●	▲

Note: Shading indicates the relative importance of minerals for a particular clean energy technology (● = high; ○ = moderate; ▲ = low).

Source: IEA (2021).

A significant quantity of mineral resources is necessary for achieving carbon neutrality and energy conversion. Electric vehicles utilize a notable number of mineral resources, including lithium, nickel, cobalt, copper, graphite, aluminum, manganese, and more. For instance, in the case of small electric vehicles (such as BMW), 134kg of core metal materials are utilized whereas SUV and trucks will require 827kg of core metal materials.<sup>52)</sup> Lithium, nickel, and cobalt, along with manganese and graphite, are crucial materials for ensuring battery performance, lifespan, and energy density.

These strategic minerals are not solely essential for the electric vehicle sector but are also utilized in various eco-friendly industries such as solar

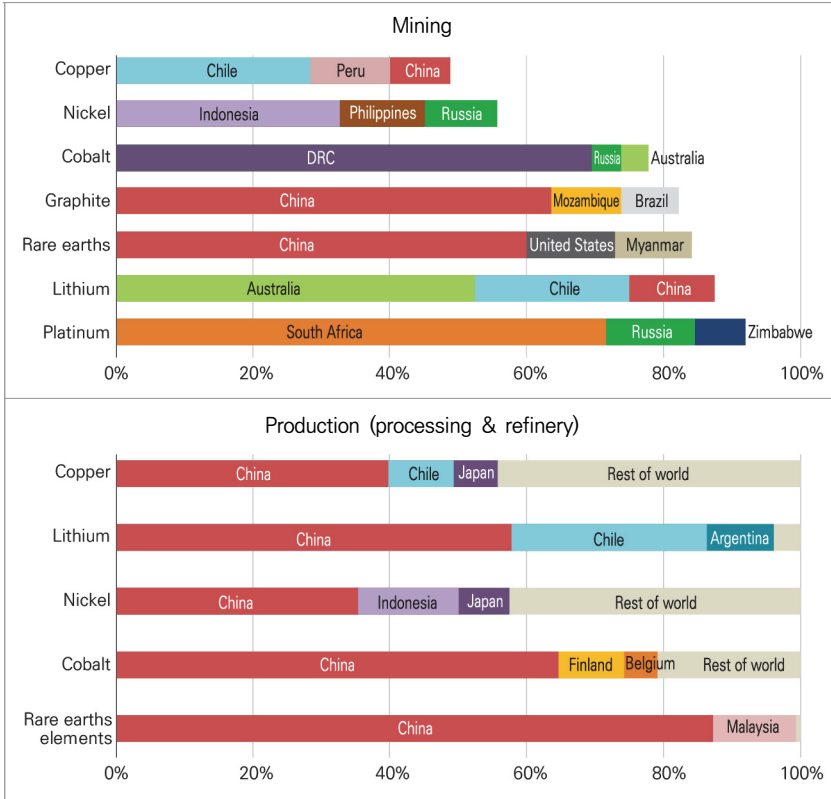
<sup>52)</sup> <https://youtube/flIT6gs9n1c> (Seminar on Natural Resource Development in Abroad: Portfolio Strategy for Zero Carbon by Major Mining Companies in Korea).

power generation, wind power generation, and hydrogen energy. In addition to copper and zinc, rare earths are required for producing permanent magnets used in power generation turbines, making them crucial materials for wind power generation. According to the International Energy Agency (IEA), constructing a wind farm necessitates nine times more mineral resources compared to building a thermal power plant. Furthermore, electric vehicles necessitate six times more mineral resources than conventional internal combustion engine vehicles. Since 2010, with the surge in investments in renewable energy, the amount of minerals required per unit of power generation has increased by approximately 50%. The promotion of carbon neutrality is also driving advancements in the power system, where copper and aluminum are particularly utilized as core materials.

## 2. Supply Chain of Strategic Minerals

As previously discussed, metal materials like lithium, cobalt, nickel, and others are crucial for transitioning to an eco-friendly energy era. However, unlike globally produced and traded oil resources, these mineral resources exhibit a high degree of concentration in specific countries in terms of their storage and production. Figure 5.2. depicted below illustrates the countries where each critical mineral is mined and produced (processed/smelted). This representation highlights that core minerals are extracted in a limited number of countries, and production is similarly concentrated within a small group of nations. It is evident that a few countries monopolize the production of key minerals. For instance, in the cases of copper and nickel, the top three countries account for almost 60% of global production. The proportion is even higher for lithium (95%), cobalt (80%), and rare earths (100%).

**Figure 5.1. Top three countries in mining and production of strategic minerals**



Source: IEA (2021).

The dominance in the production of these core minerals is particularly notable in China. Specifically, the situation is as follows: Chile and Peru contribute to over 40% of the world’s copper mining volume, while China, with its extensive processing and smelting facilities, accounts for 40% of global copper production. Indonesia and the Philippines are the primary sources (45%) of nickel mining, but China is responsible for about 35% of worldwide nickel production. Around 75% of lithium comes from Australia and Chile, yet China holds nearly 60% of global lithium production.

Moreover, approximately 70% of cobalt is mined in the the DRC, but China dominates with over 60% of global production. Furthermore, China exhibits significant dominance in the production of several other major mineral resources, including tungsten (80%), graphite (80%), silicon (70%), vanadium (65%), aluminum (60%), zinc (30%), and tin (30%). This fact indicates that the supply chain instability of core minerals is significant. While traditional mineral resources, such as coal and iron, are abundant in various regions worldwide, strategic minerals essential for eco-friendly energy industries, such as cobalt, lithium, and rare earths, are concentrated in specific regions with limited production. As a result, securing a stable supply chain for strategic minerals is challenging.

As discussed earlier, major mineral resources are characterized by extensive ubiquity, which means that supply and demand instability factors are inherently present. Additionally, geopolitical instability, such as the Ukraine crisis, and resource export control by countries possessing these resources, contribute to the instability of the supply chain. Resource-holding countries are tightening their controls as the value of their resources increases. Moreover, natural factors such as climate change also impact the resource supply chain. The mining and production of minerals require a significant amount of water, and many mines that extract core minerals are situated in areas vulnerable to climate change. Furthermore, it is noteworthy that half of the world's lithium and copper production occurs in regions where severe water shortages are prevalent. When the water shortage worsens due to climate change, the mining and production of minerals will inevitably face disruptions.

### **3. Strategic Minerals and Africa**

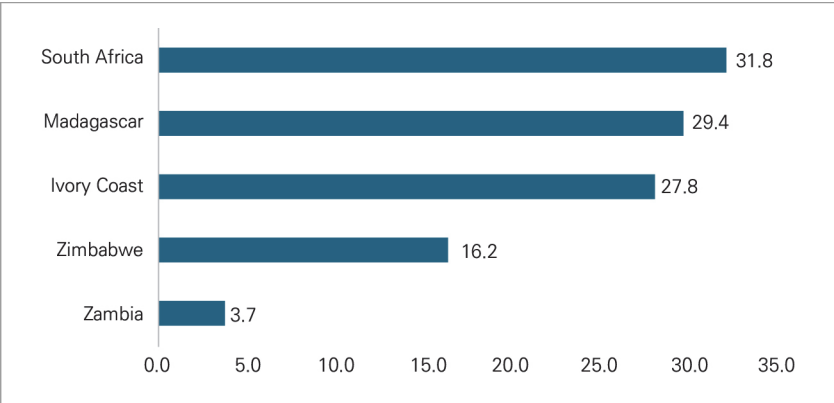
Africa's strategic value arises from its vast underground resources, which are located on a vast continent covering one-fifth of the world's land area.

While many types of resources are abundant in other parts of the world, Africa has numerous underdeveloped areas that remain untapped due to civil war, inadequate infrastructure, and a lack of investment. This indicates that there is significant untapped development potential. Africa boasts unique resources such as platinum, cobalt, manganese, and chromium, as well as substantial quantities of other resources like uranium, copper, nickel, and bauxite.

Lithium development has also experienced recent momentum. Exploration activities for lithium primarily occur in the DRC, Zimbabwe, Namibia, Mali, and Ghana. In Zimbabwe, lithium production (mining) is experiencing a surge, with output rising from a mere 470 tons in 2010 to 1,600 tons in 2018.

China’s resource development in Africa is expanding to encompass vital minerals, including lithium. For instance, Ganfeng Lithium, one of the world’s largest lithium producers based in China, aims to acquire a 50% stake in Mali’s Wallamina mine through equity investments to engage in lithium mining in Africa. Similarly, Zhejiang Huayou Cobalt, the world’s largest cobalt producer from China, seeks to acquire Prospect Lithium

**Figure 5.2. Nickel production in Africa (2021, 1,000 metric ton)**



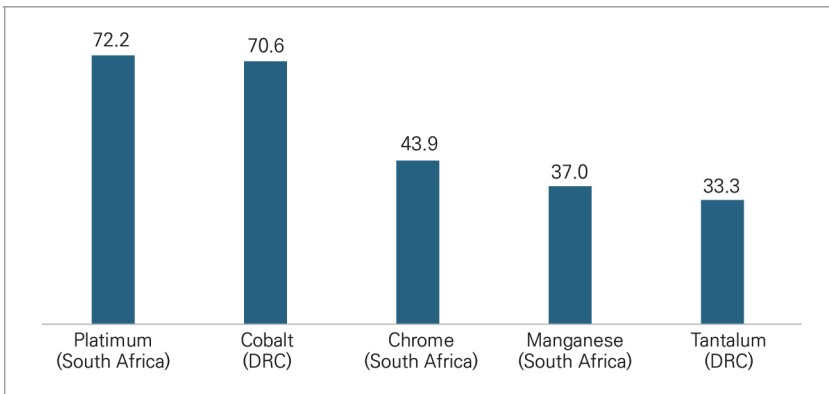
Source: statista, <https://www.statista.com> (Accessed on 30 August, 2024).

Zimbabwe, a lithium mining company in Zimbabwe.

Mineral resources are primarily concentrated in sub-Saharan Africa, with South Africa occupying a prominent position among countries. South Africa is home to a diverse range of mineral resources, including precious metals and various non-ferrous metals, making it a global leader in terms of resource development potential. Notably, platinum, manganese, chromium, and gold are among the world's largest deposits, with South Africa being a significant source. Additionally, there are abundant mineral resources such as titanium, vanadium, nitrogen, and nickel in the region (Figure 5.3).

In addition to South Africa, the DRC is gaining global attention as a resource-rich country with abundant high-value underground resources. The DRC possesses significant deposits of cobalt, copper, coal, gold, zinc, and cadmium. Coltan, which is a crucial raw material for tantalum used in mobile phones, is also found in substantial quantities in the country. Furthermore, it is estimated that around 80 % of the world's coal reserves are located in the DRC.

**Figure 5.3. Share of major mineral production in South Africa and Congo (2021)**

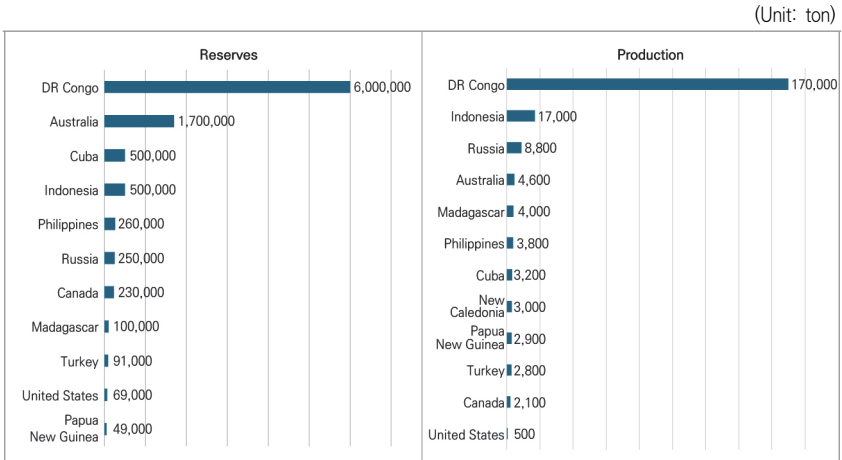


Source: statista, <https://www.statista.com> (Accessed on 30 August, 2024).

Figure 5.4 shows the global production (mining) proportion of major mineral resources, with cobalt and platinum each accounting for 70 %. South Africa and the DRC are key contributors to these resources. Concerning manganese, South Africa alone contributes 37 percent of global production, while other African countries such as Gabon (11 %) and Ghana (4 %) account for an additional 16 %. Africa continent accounts for 51% of global manganese production.

The DRC, along with Zambia, is a global copper production belt, accounting for most of Africa’s total copper production (mining). Apart from South Africa and the DRC, Africa boasts significant mineral resources in other countries as well. Notably, Botswana and Zambia are recognized for their abundant mineral reserves. The southeastern region, which encompasses Zimbabwe and Madagascar, is renowned as one of Africa’s largest mineral belts. This region is rich in diverse mineral resources, including precious metals like diamonds and gold, as well as uranium, copper, cobalt, bituminous coal, and nickel. These resources contribute to the overall mineral wealth of Africa.

**Figure 5.4. Countries of holder and producer of cobalt (as of 2023)**



Source: statista, <https://www.statista.com> (Accessed on 30 August, 2024).



## 1) Cobalt

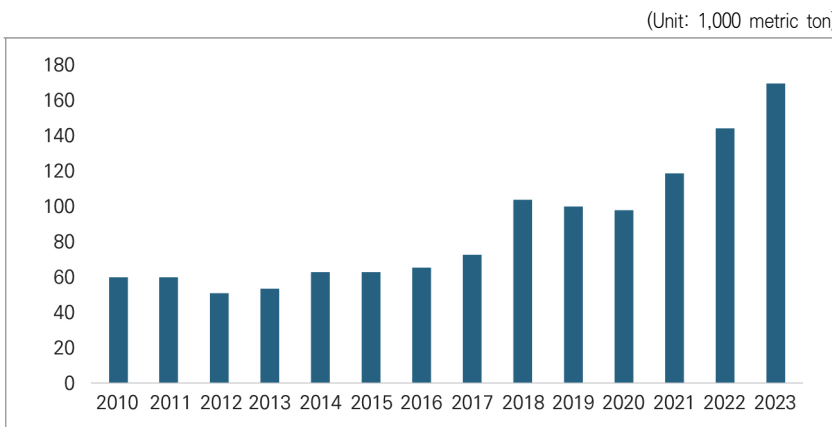
The DRC is the largest producer and holder of cobalt reserves in Africa. In fact, the DRC's cobalt reserves, as of 2021, amount to 3.5 million tons, which is 2.5 times higher than the reserves of the second-largest holder, Australia. Other African countries such as Madagascar and Morocco also have confirmed cobalt deposits.

In terms of cobalt production, the DRC leads globally, accounting for 70% of the total global cobalt production. Following the DRC, other significant cobalt-producing countries include Russia (4.5%), Australia (3.3%), Madagascar (1.5%), and Morocco (1.4%). However, their production levels are relatively smaller compared to the DRC.

The DRC's cobalt production is gaining momentum due to the global demand for electric vehicle batteries. As shown in Figure 5.6, mine production is steadily increasing.

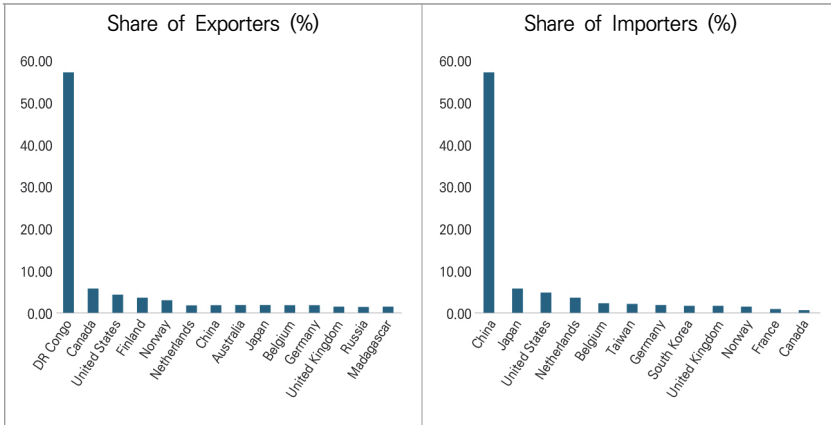
Figure 5.6 depicts the import and export status of cobalt minerals as of 2021. The DRC in Africa is responsible for almost half of the world's cobalt exports. It's important to note that this figure represents official records, and the proportion would increase significantly if informal (illegal)

**Figure 5.5. Trends of cobalt mining in Congo (DRC)**



Source: statista, <https://www.statista.com> (Accessed on 30 August, 2024).

**Figure 5.6. Exporter and importer of cobalt (as of 2021)**



Source: statista, <https://www.statista.com> (Accessed on 30 August, 2024).

transactions were included. China stands as the largest importer of cobalt minerals, accounting for more than half of the world’s cobalt imports.

Cobalt, along with lithium, nickel, copper, graphite, etc., is used as a key material in the production of lithium-ion batteries, which serve as the heart of electric vehicles (EVs). Cobalt is specifically used in the cathode material of the battery, playing a crucial role in determining its performance and controlling corrosion and explosion risks. It makes up approximately 20% of the battery’s cathode material. Cobalt is obtained as a by-product from copper and nickel mines. It is a metal widely used in smartphones, laptops, and lithium-ion batteries for EVs, earning the nickname ‘white petroleum.’ Due to its high scarcity, cobalt is more expensive than nickel, another key material for electric vehicle batteries. Cobalt represents a mineral resource with the most unstable supply chain. Over 70% of the world’s cobalt is mined in the politically unstable the DRC, resulting in a highly unstable supply. This has led to price increases, with cobalt accounting for a growing proportion of battery manufacturing costs.

Additionally, cobalt has become a global concern due to the issue of child exploitation and illegal labor in the mining process. Artisanal mining, which

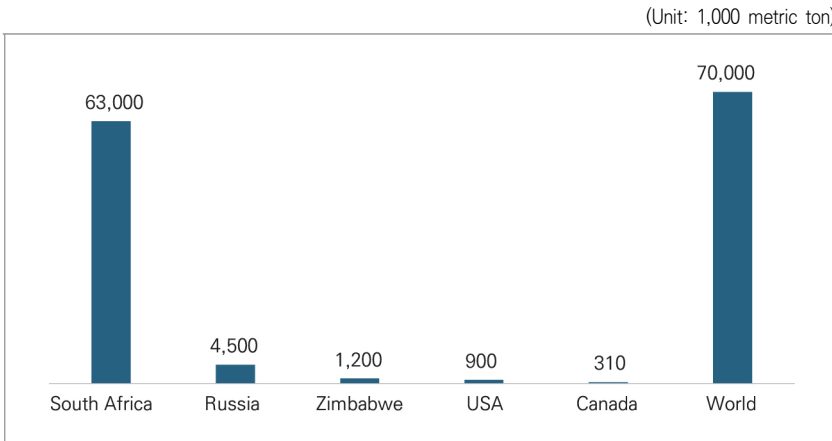
involves the use of child labor to mine cobalt by hand or with shovels, is prevalent, and illegally mined cobalt comprises over 20% of total cobalt exports. As a result, cobalt has been designated as a ‘conflict mineral,’ imposing limitations on international transactions and exacerbating supply shortages. In 2019, major U.S. IT companies such as Apple, Google, Tesla, Microsoft, and Dell were sued for engaging in illegal activities, including the exploitation of child labor in Congo. Swiss resource developers (Glencore) and Chinese mineral companies (Zhejiang Huayou Cobalt) were implicated in these cases.

Battery manufacturers worldwide are actively seeking substitute materials for cobalt, with nickel being one of the potential alternatives. Some manufacturers have already started producing cobalt-lite cathodes with significantly higher nickel content. However, these attempts have encountered side effects such as battery explosions. So far, no company has successfully developed high-performance lithium-ion batteries that entirely eliminate the use of cobalt. It is worth noting that both cobalt and nickel are core materials for anode materials, which account for 40% of the cost of electric vehicle batteries. Furthermore, approximately 80% of cobalt sulfate, a key component for manufacturing lithium-ion batteries used in electric vehicles, is produced in China. This exclusive position in the cobalt supply chain grants China significant influence over the global cobalt market.

## **2) Platinum**

Platinum Group Metals (PGMs) with platinum properties include platinum (Pt), palladium (Pd), rhodium (Rh), iridium (Ir), and others. Among these, platinum and palladium are the most widely utilized, while the others are primarily employed as plating and alloy materials due to their overall poor flammability. Platinum finds extensive use as a major material in various industries, including automobiles, chemicals, glass (refractory), electric/electronic, dental (clothing), petroleum, and as a precious metal (jewelry). More than 40% of platinum is utilized in the automotive sector,

**Figure 5.7. Platinum metal reserves by major countries (as of 2023)**



Source: statista, <https://www.statista.com> (Accessed on 30 August, 2024).

primarily for catalytic conversion devices that purify exhaust gases and mitigate pollution. With the strengthening of environmental pollution regulations in developed countries, the demand for platinum is steadily increasing. Consequently, the international price of platinum continues to rise. Platinum is one of the notable rare metals that carries a high supply chain risk due to its localization in specific areas. Consequently, the crucial approach is to ensure stable acquisition through direct development. As illustrated in Figure 5.8, approximately 90% of the world's platinum reserves are located in South Africa, while the remaining reserves are concentrated in a limited number of countries, including Russia and Zimbabwe.

South Africa also is the leading country in platinum mining, accounting for more than 70% of global platinum mining, with Russia and Zimbabwe making up the remainder of platinum mining. Africa continent accounts for nearly 80% of the world's total platinum mining.

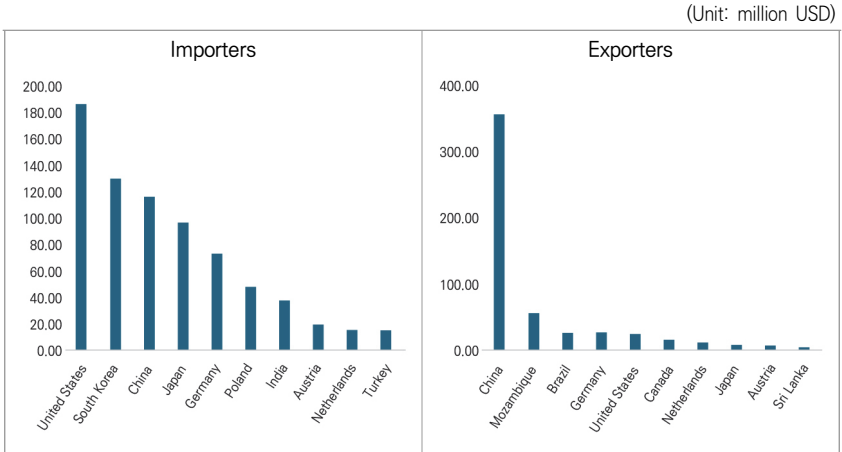
### 3) Graphite

The demand for graphite is steadily increasing worldwide. The global graphite market has expanded from \$15 billion in 2015 to \$20 billion in

2020, and it is projected to exceed \$27 billion by 2025. Graphite has traditionally been used in various industrial applications such as refractories, batteries, molds, lubricants, crucibles, and pencils. However, the proportion of graphite used in battery production, specifically as anode materials, has been increasing due to the rising demand for electric vehicles. With the expected rapid growth in electric vehicle production, the demand for graphite is anticipated to rise in tandem.

The major graphite reserves are found in Turkey, China, Brazil, and three African countries: Madagascar, Mozambique, and Tanzania. Mozambique, in particular, has experienced a recent graphite development boom, with mines in the northern region of Cabo Delgado gaining attention as world-class graphite producers. China, Brazil, Mozambique, and Russia are significant global producers of graphite, with China holding an unrivaled position. Australian companies lead the development of African graphite deposits, such as those in Mozambique and Tanzania. In the past, Korea was one of the world’s leading graphite producers. Graphite mining in Sangju, North Gyeongsang Province, began as early as 1905. However, domestic production is currently insignificant and unable to meet the

**Figure 5.8. Major importers and exporters of natural graphite (2022)**



Source: statista, <https://www.statista.com> (Accessed on 30 August, 2024).

demand, resulting in heavy reliance on imports. As shown in Figure 5.8, Korea is the largest importer of natural graphite from around the world.

## **4. Supporting Private Sector Mineral Development**

### **4-1. Significance of Mineral Development in Africa**

As mentioned above, there are various mineral resources necessary for Korea's industrial development in Africa. In particular, minerals such as platinum, cobalt, manganese, and chromium are found in Africa, and there are also large quantities of other resources like uranium, copper, nickel, and bauxite. When it comes to underground resources, there are still many undeveloped areas in Africa, indicating higher development potential compared to anywhere else in the world.

From Korea's perspective, it is challenging for Africa to become an attractive market beyond natural resource development. Africa does not possess the characteristics of a consumer market or a manufacturing production base. Some international media outlets and consulting firms mention new market opportunities in Africa, highlighting the rise of the middle class and increased purchasing power. However, it is practically very difficult for Korean products to gain market share due to the indiscriminate market penetration of low-cost Chinese products.

Africa is not particularly appealing as a manufacturing production base due to numerous obstacles such as high wages, low productivity, poor infrastructure, and political instability. Unlike other developing countries such as Vietnam, Indonesia, and Ukraine, Africa is isolated in the global supply chain and is unlikely to be incorporated into it in the future. Even before Africa enters the stage of economic development, there is a de-

industrialization phenomenon where the proportion of the manufacturing industry decreases. In the future, Africa is expected to remain reliant on mono-cultural economies. Compared to other emerging markets such as Southeast Asia, Africa lacks attractive investment factors and carries a higher investment risk than any other region in the world. In fact, Korea's investment in Africa remains at around 1%, with most projects focused on aid. The African market has long been dominated by Europe, and recently, Chinese companies have gained an exclusive position in almost all fields due to their aggressive strategies.

Finding promising areas to enter these African markets is not easy, and it doesn't hold much significance. Of course, resource development is not much different from entering the general manufacturing industry in terms of the risks involved. However, it would be realistic to define promising fields in Africa as high-risk areas that require entry based on Korea's needs, rather than due to some attractive factors. This study concludes that resource development is such a field. Korea ranks among the world's top 10 economic powers but faces structural vulnerabilities in terms of resource security. Korea has repeatedly experienced difficulties as a resource-poor country whenever international raw material prices have soared.

Considering that the international resource market is unstable and price disruptions occur, it is necessary to have safety measures in place to absorb the impact of supply chain instability through direct development. If resource procurement is solely reliant on imports, "stable securing" cannot be guaranteed, which will inevitably disrupt supply and demand. Although direct development is not the only means of ensuring stability in resource procurement when the distribution market for resources is well-developed, the transition to the era of carbon neutrality and eco-friendly energy has made stable resource procurement even more important. While oil or gas can be developed as alternative energy sources, the importance of securing metal mineral resources, for which there is no clear alternative, becomes even greater. The Japanese government established the "Four Strategies for

Securing Rare Metals” in 2009 and is supporting overseas mining development through general trading companies.<sup>53)</sup> Japan’s Ministry of Economy, Trade and Industry has implemented special management to stabilize the supply of 34 strategic metals, including rare earths and cobalt. The issue of resource supply and demand is a chronic problem that recurs whenever the international situation becomes unstable, and it cannot be solved by market logic alone. Therefore, even if there are costs and risks involved, the fundamental solution lies in securing the stability of resource procurement through Korea’s own participation in development. The current Korean government has adopted the “recovery of the overseas resource industrial ecosystem centered on the private sector” as a national task. However, relying solely on “private power” has its limitations, and the support and role of the government and public enterprises remain important.

Unfortunately, the Korea Mine Rehabilitation and mineral Resources Corporation (KOMIR), a public corporation responsible for mineral resources, is currently facing complete capital erosion and has lost its investment capacity. Consequently, the ability to support private overseas resource development projects is inevitably restricted. At present, new foreign direct investment by the KOMIR is prohibited by law. While it is natural to depend on resource suppliers that offer low prices based on market logic, efforts to diversify the resource development market from an economic security standpoint with a long-term perspective are also necessary.

## **4-2. Supporting Early-Stages Mineral Development and Establishing Cooperative Infrastructure Platform**

Overseas resource development is inevitable in order to secure natural

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53) METI, “Japan’s new international resource strategy to secure rare metals,” [https://www.enecho.meti.go.jp/en/category/special/article/detail\\_158.html](https://www.enecho.meti.go.jp/en/category/special/article/detail_158.html) (Accessed on 30 August, 2024).



resources in a long-term and stable manner. As mentioned above, the transition to a carbon-neutral and eco-friendly era is a foregone conclusion, and the mineral resources that support this are likely to experience repeated emergency situations such as supply chain instability and rapid price volatility. In this regard, securing resources through foreign direct investment is an essential issue.

However, due to its nature, overseas resource development is not only uncertain and has a low probability of success, but also requires a long time and large-scale capital investment to achieve results. The current Korean government has proposed securing foreign resources centered on the private sector as a national task. However, due to the nature of overseas resource development, which requires enormous funds and involves various risks, it is difficult for private companies alone, and the role of the government and public corporations remains important.

Korea's overseas resource development ecosystem is currently in a state of decline due to the insolvency of overseas projects caused by the regime's failure in resource diplomacy, and it is necessary to restore the ecosystem by redefining the role of resource public corporations. As mentioned above, resource public enterprises are currently in a state of complete capital erosion and cannot afford to promote overseas resource development, so they have no choice but to redefine their roles in supporting private companies in various ways. In this regard, the government and public corporations need to play a leading role in supporting private companies' overseas resource development projects, one of which is to support private companies in the early stages such as exploration. The underground resource development process largely consists of four stages namely exploration, development, production, and distribution, and the government and resource public corporations need to seek ways to support wide-area exploration, precision exploration, and precision feasibility analysis (F/S). There are many risks to resource exploration, making it difficult for private companies to carry out themselves. Of course, the exploration project is a

risky project with a success rate of only 10%, which is contrary to the ongoing restructuring (debt ratio resolution) direction of public enterprises, so there should be appropriate government support (special loans, etc.). The government has been implementing a success repayable loan system<sup>54)</sup> that supports up to 30% of project costs when private companies explore overseas resources, and recently considered supporting successful loans if public companies participate in exploration projects with the private sector.

In addition, the Korean government and related public corporations need to make efforts to support private sector investment in resource development through precise data analysis and the establishment of human networks with other governments. It is also necessary to strengthen diplomatic relations with major resource-rich countries. Strengthening diplomatic power is one of the alternatives that can overcome the weaknesses of latecomers, such as the short history of overseas resource development, lack of experience, and limited financial power. Overseas resource development is often driven by the government's diplomatic power. Establishing contact with key decision-makers in other countries, which is not easily achieved at the private level, becomes feasible at the government's diplomatic level, thereby increasing negotiation power. Moreover, one of the primary roles of the government and public corporations is to prepare accurate maps of strategic minerals and provide them to private companies. These activities hold significant value in terms of providing business information and investment opportunities to private companies.

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54) For example, if the size of the project is 100 billion won, the government will provide up to 30 billion won in funding. If the exploration is successful, the government will receive back 3.3 billion won, which represents 10% of the subsidy. If the exploration fails, the government will recoup 9 billion won, which amounts to 70% of the subsidy (21 billion won).

### **4-3. Establishing Win-Win Cooperation Partnership through ODA**

There are limits to the mercantilist approach of unilaterally acquiring resources according to Korea's needs. As resource nationalism strengthens in resource-rich countries, short-term and one-sided approaches focused solely on resource acquisition may have temporary effects or even undermine credibility. Therefore, Korea's resource cooperation should seek solutions based on win-win cooperation. Rather than pursuing cooperation for just a year or two, it is important to understand the comprehensive nature of win-win or win-one cooperation within a broader framework and strive for a cooperative model that can foster reciprocal development.

Deepening mutually beneficial cooperation can lead to the establishment of economic cooperation partnerships and, ultimately, serve national interests such as securing a stable resource source. It is necessary to recognize that national interests, including resource acquisition, are accumulated by delivering the results of long-term win-win cooperation. To achieve win-win cooperation, it is important not to focus solely on Korea's own economic interests. Instead, it is crucial to consider the challenges faced by other countries and form future-oriented partnerships based on those considerations. Korea's development experience should be leveraged as a "soft power" in win-win cooperation. Korea possesses a valuable national asset in the form of a successful economic development model, which can serve as a major means of fostering win-win cooperation. Many African countries aspire to learn from Korea's development, which achieved rapid growth despite overcoming colonial and war experiences. These underdeveloped resource-rich African countries need new economic development models as they struggle to escape poverty despite significant aid from advanced countries and China.

Korea's industrialization and economic development differ in many ways from those of other developed countries, and this unique experience has

considerable advantages when sharing knowledge with African countries. While developed countries began industrialization up to 200 years ago, Korea's initial industrialization process occurred only half a century ago. As a result, it can foster greater consensus compared to the industrialized nations. Furthermore, Korea's economic development diverged from the Washington Consensus, which is unilaterally emphasized by international development organizations. The fact that Korea achieved economic development despite its colonial history is another distinguishing factor from the experience of developed countries.

However, it is important to avoid overemphasizing Korea's development experience and instead combine the lessons and experiences learned during the economic development process while considering the unique characteristics and societal context of the partner country.

In the short term, it is necessary to establish infrastructure for resource development cooperation by leveraging the mine pollution damage recovery ODA project. Through ODA, the KOMIR has promoted mining damage recovery projects and provided technology consulting in countries such as Indonesia, the Philippines, and Thailand, gaining recognition for its mining management technology and business performance. Environmental pollution is becoming a significant issue in various parts of Africa due to indiscriminate mining development. Consequently, there is increasing demand for development cooperation in establishing mine damage management systems and recovering from mining-related damages.

## Chapter 6



# Leveraging International Development Financial Institutions

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- The background of the lower half of the page features a grayscale image of a globe. Overlaid on the globe is a network of gray lines connecting various circular nodes of different sizes. In the bottom right corner, a blurred city skyline with several tall buildings is visible.
1. Constraints in Financial Support to Africa
  2. Utilizing Development Financial Institutions (DFIs)
  3. Examples of DFI Financial Support
  4. Co-financing with Development Financial Institutions

# 1. Constraints in Financial Support to Africa

The biggest barrier facing Korean companies in entering Africa is the difficulty of financing. In the 2000s, as the African market was being reexamined, Korean companies sought to enter the infrastructure and resource development sectors but failed due to financial difficulties. Africa has a higher risk than any other region and a poor business environment, making it difficult for domestic public export credit institutions (ECAs) such as the Export-Import Bank of Korea to provide financial support. Most credit rating agencies, including the world's top three credit rating agencies such as Moody's, Standard & Poor's, and Fitch, classify Africa as the region with the highest national risk in the world. Not only does Africa have a high national risk, but the business risk that must be experienced directly or indirectly in the course of commerce is also significantly higher than in any other region. Although there are some exceptional cases, such as Mauritius, African countries always form the lowest-ranked group in the annual business environment evaluation conducted by the World Bank. In fact, Africa has high political and social uncertainties, as well as regulatory risks such as restrictions on foreign exchange transactions and remittances under government regulations, exchange risks due to rapid exchange rate fluctuations, and complex business procedures and contract defaults.

Access to local finance in Africa is also virtually blocked. Except for some countries such as South Africa, it is not easy to raise funds necessary for development projects due to the underdeveloped financial market. Since African commercial banks have low credit ratings, it is not easy to raise funds in the international financial market. Only a few countries like South Africa, Morocco, Tunisia, and Botswana have national credit ratings that enable them to procure commercial finance in the international financial market. Even if financing is raised overseas, high transaction costs such as high-interest rates must be paid, resulting in inevitably high loan interest rates, which eventually burden the borrower (investor)'s business costs.

In 2016, the Korean government prepared a plan to revitalize development finance, aiming to expand participation in large-scale development projects. It laid the institutional foundation by overhauling related regulations. Development finance includes various financial support methods (such as concessionary loans + marketable loans + guarantees + equity investments) that utilize not only government finance (EDCF concessional loans) but also market borrowing (issuance of bonds by the Export-Import Bank of Korea).

However, it is challenging for such development finance to effectively support Africa. This is because countries eligible for development financial support are subject to conservative criteria, such as maintaining a certain credit rating and having a Gross National Income (GNI) per capita of over \$1,000.

Co-financing involve multiple development financial institutions collaborating to provide funding for specific development projects. Public funds, including the World Bank, European development financial institutions, and export credit agencies (ECAs), as well as private funds such as commercial banks and insurance companies, participate in co-financing arrangements.

## **2. Utilizing Development Financial Institutions (DFIs)**

DFIs play a crucial role in infrastructure and resource development in developing countries like those in Africa. Cooperation between policy finance institutions like the Export-Import Bank of Korea and DFIs to support Korean companies entering the African market can provide the following benefits: The roles and benefits of DFIs are presented in Table 6.1.

**Table 6.1. Roles and Benefits of DFIs**

Roles	Description
Risk Mitigation	DFIs have deep understanding and experience in local markets, which can help in risk assessment and management
Enhanced Funding Capacity	Collaboration with DFIs can enable financing of larger-scale projects
Utilization of Local Networks	Korean companies can connect with local partners through DFIs' local networks
Increased Development Impact	DFIs prioritize the economic, social, and environmental impacts of projects, promoting sustainable development
Technical Assistance	DFIs often provide technical assistance programs that increase the likelihood of project success.
Policy Influence	DFIs can help obtain policy support through their relationships with local governments

Source: World Bank Group, <https://www.worldbank.org/>.

DFIs are specialized financial institutions that are usually majority-owned by national governments. Their primary purpose is to foster economic development, often by financing projects in developing countries that would otherwise struggle to obtain capital. The roles of DFIs are listed in Table 6.2.

**Table 6.2. Development Financial Institutions (DFIs): Characteristics and Roles**

Key Characteristics	Ownership Structure Key Characteristics	<ul style="list-style-type: none"> <li>- Typically, government-owned or backed</li> <li>- Some have mixed ownership with private sector participation</li> </ul>
	Mandate	<ul style="list-style-type: none"> <li>- Focus on sustainable development and poverty reduction</li> <li>- Operate in developing countries or emerging markets</li> </ul>
	Financial Products	<ul style="list-style-type: none"> <li>- Offer a range of financial products including loans, equity investments, guarantees, and technical assistance</li> </ul>
	Operational Focus	<ul style="list-style-type: none"> <li>- Emphasis on sectors crucial for development (e.g., infrastructure, agriculture, SMEs)</li> <li>- Balance between financial sustainability and development impact</li> </ul>
	Risk Appetite	<ul style="list-style-type: none"> <li>- Higher risk tolerance compared to commercial banks</li> <li>- Invest in challenging markets and sectors</li> </ul>



**Table 6.2. Continued**

Roles and Functions	Catalyzing Private Investment	<ul style="list-style-type: none"> <li>- Attract private capital to developing markets</li> <li>- Demonstrate the viability of investments in challenging environments</li> </ul>
	Filling Financing Gaps	<ul style="list-style-type: none"> <li>- Provide long-term financing where commercial banks are reluctant</li> <li>- Support sectors crucial for development but considered high-risk</li> </ul>
Types of DFIs	Multilateral DFIs	<ul style="list-style-type: none"> <li>- International Finance Corporation (IFC)</li> <li>- European Bank for Reconstruction and Development (EBRD)</li> <li>- African Development Bank (AfDB)</li> </ul>
	Bilateral DFIs	<ul style="list-style-type: none"> <li>- Proparco (France)</li> <li>- CDC Group (UK)</li> <li>- DEG (Germany) etc.</li> </ul>
Key Sectors of Focus		<ul style="list-style-type: none"> <li>- Infrastructure (energy, transportation, telecommunications)</li> <li>- Agriculture and food security</li> <li>- Small and Medium Enterprises (SMEs)</li> <li>- Financial sector development</li> <li>- Climate change mitigation and adaptation</li> <li>- Healthcare and education</li> </ul>

Source: World Bank Group, <https://www.worldbank.org/>; OECD, <https://www.oecd.org/>; Association of European Development Finance Institutions (EDFI), <https://www.edfi.eu/>.

## 2-1. Multilateral DFIs and Their Support for Africa

Multilateral DFIs play a crucial role in Africa’s development landscape. Their support goes beyond just providing finance; they also offer technical assistance, policy advice, and help in structuring complex projects. Multilateral DFIs often step in where commercial banks are hesitant, providing long-term financing for crucial development projects. They have developed deep knowledge in key sectors like energy, transport, and financial services, which is particularly valuable in the African context. It is required to keep high standards for environmental protection and social responsibility in the projects they support. In some cases, new financial instruments suited to the needs of developing countries, such as local currency loans or partial credit guarantees. DFIs often increase their

investments to maintain capital flows and support economic stability, and cooperate with private sector entities to maximize impact and share risks.

For Korean financial institutions looking to support companies entering African markets, these multilateral DFIs can be valuable partners. They can provide, (1) local knowledge and networks, (2) risk-sharing opportunities, (3) co-financing for large projects, (4) Technical assistance and capacity building, and (5) assistance in navigating complex regulatory environments. Collaborating with these multilateral DFIs can help Korean financial institutions and companies to enhance their impact in Africa while managing risks effectively.

**Table 6.3. Multilateral DFIs**

	CharacteristicsInstitution	Support for Africa
International Finance Corporation (IFC)	<ul style="list-style-type: none"> <li>- Focus on private sector development in emerging markets</li> <li>- Operates globally with a significant presence in Africa</li> </ul>	Focus areas: infrastructure, manufacturing, agribusiness, and financial services
African Development Bank (AfDB)	<ul style="list-style-type: none"> <li>- Regional multilateral development finance institution</li> <li>- Owned by 54 African countries and 27 non-African countries</li> <li>- Primary focus on reducing poverty and improving living conditions in Africa</li> </ul>	Key sectors: infrastructure, agriculture, financial services, and regional integration
European Investment Bank (EIB)	<ul style="list-style-type: none"> <li>- The European Union's investment bank</li> <li>- Operates globally with a significant focus on Africa through the External Lending Mandate</li> <li>- Emphasizes climate action and sustainable development</li> </ul>	Focus areas: SMEs, infrastructure, climate action, and innovation

Source: OECD Development Finance institutions and Private Sector Development, <https://web-archiver.oecd.org/temp/2024-02-15/237075-development-finance-institutions-private-sector-development.htm> (Accessed on 15 July 2024).

## 2-2. European Bilateral DFIs and Their Support for Africa

European bilateral DFIs play a crucial role in supporting sustainable development in Africa. They typically make investments with a 5–10 year horizon, allowing for sustainable growth, and their involvement often attracts additional private sector investment. They aim for financial returns, the primary goal is to achieve positive developmental outcomes beyond financial support, they provide technical assistance to strengthen local businesses and institutions. It is common to bring new financial instruments and blended finance approaches to address development challenges. Many have developed deep knowledge in key sectors like renewable energy, financial inclusion, and agribusiness.

**Table 6.4. Major European Bilateral DFIs**

Country	Characteristics	Support Policies for Africa
CDC Group (UK)	<ul style="list-style-type: none"> <li>– Recently rebranded as British International Investment (BII)</li> <li>– Focus: Sustainable, long-term economic growth in Africa and South Asia</li> </ul>	(Sector Focus) <ul style="list-style-type: none"> <li>– Infrastructure (energy, transportation, water)</li> <li>– Financial services and SME development</li> <li>– Agribusiness and food security</li> <li>– Healthcare and education</li> <li>– Renewable energy and climate change mitigation</li> </ul>
Proparco (France)	<ul style="list-style-type: none"> <li>– Subsidiary of Agence Française de Développement (AFD)</li> <li>– Focus: Private sector development in emerging and developing countries</li> </ul>	
DEG (Germany)	<ul style="list-style-type: none"> <li>– Subsidiary of KfW Banking Group</li> <li>– Focus: Promotion of private-sector enterprises in developing and emerging countries</li> </ul>	
FMO (Netherlands)	<ul style="list-style-type: none"> <li>– Dutch entrepreneurial development bank</li> <li>– Focus: Supporting sustainable private sector growth in developing and emerging markets</li> </ul>	(Financial Instruments) <ul style="list-style-type: none"> <li>– Long-term loans</li> <li>– Equity investments</li> <li>– Guarantees</li> <li>– Mezzanine finance</li> </ul>
Swedfund (Sweden)	<ul style="list-style-type: none"> <li>– Sweden’s development finance institution</li> <li>– Focus: Poverty reduction through sustainable business practices</li> </ul>	

Source: Association of European Development Finance Institutions (EDFI), <https://www.edfi.eu/> (Accessed on 20 July 2024).

These DFIs are increasingly aligning their strategies with global development goals, particularly the UN Sustainable Development Goals (SDGs) and the Paris Agreement on climate change. They are also placing greater emphasis on measuring and reporting the development impact of their investments, using sophisticated tools and methodologies. For Korean financial institutions looking to support companies entering African markets, partnering with these European DFIs could provide valuable local knowledge, risk-sharing opportunities, and increased development impact.

## **3. Examples of DFI Financial Support**

### **3-1. Tanzania Transmission Network Project**

The Tanzania Backbone Transmission Project is a construction project for a power grid (400KV) that aims to connect power generation facilities in southern Tanzania with northern urban areas. It spans a total distance of 667km, stretching from Iringa in the central region to Shinyanga in the northwest, passing through Mtera, Dodoma, and Singida. The project includes various consulting services such as the expansion of substations in these four regions, business management, supervision, and environmental management plans. Additionally, it involves the construction of three transmission networks: Ilinga-Dodoma (225km), Dodoma-Shinyanga (217km), and Singida-Shinyanga (225km).

The total project cost amounts to approximately \$370 million. In August 2010, the World Bank (IDA) approved the establishment of a credit line worth \$150 million and allocated \$10 million in technical assistance funds to the Tanzania National Electric Power Corporation (TANESCO). Subsequently, the European Investment Bank (EIB), the African Development Bank (AfDB), the Japan International Cooperation Agency (JICA), and the Economic Development Cooperation Fund (EDCF) from

Korea joined in providing financial support. The loan amount from these institutions totals \$134.5 million, with a non-concessional interest rate of 5.4% per year. Furthermore, as part of the project, the EDCF from Korea has contributed approximately \$36 million towards the construction of four substations.

**Table 6.5. Details of loan provision by financial institutions for Tanzania's transmission network project**

(Unit: million USD)

Lenders	Loan type	Amount (Million USD)	Maturity (year)	Grace period (year)	Interest rate (yearly)
IDA	Concessional	148.03	40	10	0.75%
EIB	Non-concessional	134.49	25	5	5.40%
AfDB	Concessional	65.00	50	10	0.75%
JICA	Concessional	64.86	50	10	0.01%
EDCF (Korea)	Tied Concessional	36.06	40	15	0.01%

Note: IDA's interest is zero, and the service is 0.75%.

Source: Park *et al.* (2013), *The Role of International Development Finance Institutions in Financing Infrastructure in Africa and its implications for Korea*, KIEP.

### 3-2. Uganda Hydroelectric Project (Bujagali)

The project was initiated in 2005 by a private investment consortium as a venture to construct a 250 MW power plant on the Victoria Nile based on the PPP (Public-Private Partnership). The project stakeholders included BEL (Bujagali Energy Ltd), an international investment fund, IPS (Industrial Promotion Services), a U.S. global power generation company, Sithe Global Power, and a project company (SPC) established by the Ugandan government. Various development financial institutions participated in this project as seen in the table below. The project involved a mandatory purchase agreement by the Ugandan government to procure electricity generated for a duration of 30 years, known as a BOT arrangement, as

outlined in the Power Purchase Agreement (PPA). Additionally, the Ugandan government provided a payment guarantee. The total funding requirement for the project amounted to \$79.8 billion, with the employer's equity covering 22% (\$1.71 billion), and the remaining 78% (\$6.27 billion) secured through loans from IFC, AfDB, EBI, European DFI, and commercial banks. IDA offered risk guarantees amounting to \$11.5 billion for commercial bank loans through PRG, while MIGA provided guarantees for \$11.5 billion in equity investments with a 20-year maturity through PRI. The project received high acclaim as a successful financing case and was recognized as an exemplary project in the 2007 edition of Project Finance Magazine by Euromoney, a prominent British financial publication.

**Table 6.6. Funding structure of the Bujagali hydroelectric power project**

		(Unit: Million USD)
Capital (22%)	Uganda government	20.0
	IPS (global investment fund)	60.6
	Sithe Global Power (US Power Generation Company)	90.0
Loans (78%)	Commercial bank loans	115.0
	IFC loan	130.0
	EIB loan	140.0
	AfDB loan	110.0
	Proparco (France)	73.0
	DEG/KfW (Germany)	45.0
	FMO (Netherland)	73.0
Total		798.5

Source: Park *et al.* (2013), *The Role of International Development Finance Institutions in Financing Infrastructure in Africa and its implications for Korea*, KIEP.

These examples demonstrate several key aspects of DFI co-financing in Africa. By involving multiple DFIs, the financial risk is spread across various institutions, making it possible to undertake large, complex projects. Each DFI brings its own sector expertise and regional knowledge, enhancing

the overall project design and implementation. Projects involving multiple DFIs typically adhere to stringent environmental, social, and governance standards. Co-financing arrangements are common in capital-intensive sectors like energy, infrastructure, and natural resource development. DFIs are able to provide long-term financing that aligns with the extended timelines of major infrastructure and resource development projects. The involvement of multiple DFIs can help in navigating complex policy environments and promoting regulatory reforms.

For Korean financial institutions and companies looking to engage in African projects, these examples highlight the potential benefits of partnering with DFIs. Such partnerships can provide access to additional financing, help manage risks, and enhance the developmental impact of projects. Moreover, the involvement of multiple DFIs can lend credibility to projects, potentially making them more attractive to other investors and stakeholders.

## **4. Co-financing with Development Financial Institutions**

### **4-1. Necessity of expanding co-financing**

Due to the high investment risks present in all African countries, independent expansion of financial support by domestic export credit agencies (ECAs) such as the Export-Import Bank of Korea poses a challenge. As a result, addressing the financial needs of domestic companies requires collaboration through co-financing with DFIs. Co-financing with DFIs serve as a prominent approach to enter the African market due to the availability of easy investment financing and the ability to leverage bargaining power with the host country's government. These loans play a

vital role in securing project stability, particularly in politically volatile regions where various risks including contract violations, expropriation, confiscation, and remittance restrictions are prevalent.

The Export-Import Bank of Korea has actively pursued overseas financial support measures by expanding export credit support in conjunction with the expansion of concessional loan (EDCF). However, in practice, expanding financial support becomes challenging due to the high national risk and low national creditworthiness prevalent in nearly all African countries. Consequently, there arises a growing need to expand co-financing. The participation of export credit institutions like the Export-Import Bank of Korea in projects through co-financing with DFIs can effectively facilitate the entry of domestic companies into the African market.

Participation in developing countries, particularly in Africa, involves various risks such as changes in contract terms and non-fulfillment of obligations. Collaboration with DFIs can provide project stability. DFIs including MIGA, offer diverse Risk Mitigation Instruments (RMI) that act as stabilizers for businesses. Cooperative loans play a significant role in supporting large-scale projects with limited financial resources, thereby directly or indirectly aiding the progress of Korean companies. By jointly supporting complex large projects with DFIs, domestic policy financing entities such as the Export-Import Bank of Korea can leverage their support, addressing the lack of financial power, financial support experience, and know-how while mitigating risks.

Therefore, co-financing holds significant importance as a means to address the aforementioned challenges and minimize risks by leveraging financial resources. In Africa, the need for co-financing has become more pronounced with the increasing scale of national development projects. Multiple development financial institutions participate as lenders through co-financing, ranging from two or three institutions to as many as six. The participating financial institutions include multilateral and bilateral



**Table 6.7. Financial resources available for entering African markets**

	Aid (Concessional loan)	MDB	Bilateral European DFIs	ECA	CB (Commercial Bank)
Purpose	Supporting economic development	Supporting economic/ social development	Supporting Private sector development	Supporting export/ investment of domestic companies	Pursuit of profit
Key features	<ul style="list-style-type: none"> <li>- Long-term and low-interest rate</li> <li>- Political considerations</li> <li>- Taking a long time in the process</li> <li>- Relatively small amount</li> </ul>	<ul style="list-style-type: none"> <li>- Long-term and low-interest rate</li> <li>- Taking a long time in the process</li> <li>- Facilitating other financial institutions to participate in the projects</li> <li>- Relatively small amount</li> </ul>	<ul style="list-style-type: none"> <li>- Supporting private business with high development effectiveness and commerciality</li> <li>- Abundant experiences in supporting Africa's projects</li> <li>- Facilitating other financial institutions to participate in the projects</li> <li>- Relatively small amount</li> </ul>	<ul style="list-style-type: none"> <li>- Covering country risks</li> <li>- Tied supports</li> </ul>	<ul style="list-style-type: none"> <li>- Sensitive to country risks</li> <li>- Prefer co-financing with DFI/ECA</li> <li>- Provision of guaranteed loans</li> </ul>
Major institutions	EDCF, JICA	IBRD, IDA, IFC, MIGA, EIB, AfDB	European DFIs including CDC, Proparco, DEG, FMO	US EXIM, JBIC	BNP Paribas/ HSBC/ Standard Chartered
Availability	High	High	High	Low	Moderate

Source: Prepared by authors.

development financial institutions, export credit institutions (ECAs), regional development banks, commercial banks, and infrastructure funds. ECAs and commercial banks typically provide financial support alongside development finance as secondary supporters, rather than as independent entities.<sup>55)</sup> In other words, they participate in projects led by development

<sup>55)</sup> ECAs support the export and investment expansion of domestic companies by providing finance such as loans, guarantees, and insurance. However, this support is

financial institutions based on commercial judgment. Considering the unpredictable risk factors and low national creditworthiness in developing countries, MDBs and established development financial institutions usually lead the financing for large-scale projects.

## **4-2. Strategies for Co-financing with DFIs**

As mentioned previously, DFIs such as the World Bank and European DFI play a leading role in large-scale development projects in Africa. Export credit institutions (ECAs) and commercial banks participate in financial support as secondary supporters, following the lead of development financial institutions. In other words, ECAs and commercial banks join projects led by development financial institutions based on commercial judgment. This approach is primarily driven by the unpredictable risks inherent in African business environments and the generally low national credit ratings. Reflecting these unique market characteristics of Africa, various financial resources with different characteristics participate in large projects by forming financial packages through co-financing arrangements. For infrastructure and natural resource development projects, major development financial institutions like MDBs and the World Bank typically take the lead in providing financial support, while ECAs and commercial banks join as secondary participants.

The participation of multiple financial institutions in African projects is a result of the shared purpose of managing risks associated with Africa while also addressing financial resource constraints. Several financial institutions participate in large projects in Africa, ranging from as few as two

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typically conditional and may require certain criteria to be met. Commercial Banks (CBs) prioritize profit maximization and are highly sensitive to business risks. They primarily participate in co-financing schemes under payment guarantees from development financial institutions such as MDBs or ECAs. In other words, if development financial institutions' involvement reduces project risk, the CBs join in providing financial support as secondary supporters.

or three institutions to as many as six. These participating financial institutions are diverse and include multilateral and bilateral development financial institutions, ECAs, commercial banks, sovereign wealth funds, infrastructure funds, and Islamic finance, as shown in Table 6.8 below.

In the early stages, the Multilateral Development Bank (MDB), which aims to foster economic development and alleviate poverty, mitigates risks by participating in African projects. Subsequently, European development

**Table 6.8. Participation of Financial Institutions in large-scale projects in Africa**

Country	Projects	Participating financial institutions
Nigeria/Benin/Togo/ Ghana	West African Gas Transport Network (WAGP)	IDA, MIGA, OPIC (USA), Zurich (Switzerland)
South Africa/Mozambique	Southern African Gas Project	IBRD, MIGA, EIB, DBSA, ECIC, SCMB
Djibouti	Djibouti Port Project	MIGA, SCB, Islamic Bank of Dubai, WestLB AG (Germany)
Uganda	Hydroelectric power generation (Bujagali)	IFC, EIB, AfDB, Proparco, DEG, FMO, SCB, ABSA
Rwanda	Power development project (Kivu Watt)	MIGA, AfDB, FMO, BIO, EAIF
Kenya/Uganda	Railway network project	IFC, IDA, AfDB, KfW, FMO, BIO
Morocco	Port development project (Tanger Med)	EIB, AFESD
Tanzania	Power grid project	IDA, EIB, AfDB, JICA, EDCF
Congo (DRC)	Copper/Cobalt development project	EIB, KfW, DBSA, IDC, OPIC, ONDD, EDC
Senegal	Dakar container Terminal project (DCT)	MIGA, AfDB, SCB
Tanzania	Gas-powered project (Songo-Songo)	IDA, EIB, CDC
Uganda	Power grid project (Umeme)	MIGA, IDA, CDC

Source: Park *et al.* (2013), *The Role of International Development Finance Institutions in Financing Infrastructure in Africa and its implications for Korea*, KIEP.

financial institutions, with special historical relations to Africa through colonial rule, participate to provide additional financing and reduce risks. Once these development financial institutions become involved and establish a certain level of stability in the project, it paves the way for the participation of export credit institutions (ECAs) and international commercial banks (ICBs).

MDBs, Europe's DFIs, and ECAs in advanced countries can entail in projects led by these institutions through co-financing, enabling support for domestic companies' entry into Africa. The Export-Import Bank of Korea has already provided funds through co-financing with MDBs and ECAs for projects such as the Madagascar nickel mine development, Moroccan coal-fired power generation, and Egyptian oil refining.

AfDB possesses diverse business experiences, know-how, and expertise specific to African markets. The institution offers valuable data, information, and knowledge, making it an essential partner for African projects. Cooperate with a range of financial institutions, including aid agencies in advanced countries, international commercial banks, local financial institutions, sovereign wealth funds, investment funds, and Islamic finance. Given the distinct purposes, policies, and support conditions of these institutions, forming optimal co-financing groups for each country and project can maximize risk reduction and financing possibilities.

The lack of advisory capabilities in domestic financial institutions by actively utilizing foreign financial advisory services with extensive experience and know-how in African financial procurement. While the Export-Import Bank of Korea provides financial advisory services to support overseas expansion, there is a need for more customized advisory services covering project discovery, investment, loans, and guarantees. Experienced financial advisors from Europe, for example, possess deep understanding of the business location country and relevant industries, as well as expertise in financial procurement and risk mitigation.

Co-financing play a crucial role in addressing financial constraints, lack of financial support experience, and know-how gaps, while reducing risks. The Export-Import Bank of Korea (EDCF), as shown in Table below, has already provided co-financing in collaboration with AfDB and the World Bank. For instance, the Mojo-Hawasa Expressway construction project in Ethiopia received co-financing of \$100 million from EDCF and \$130 million from AfDB. Co-financing with MDBs not only support large-scale projects with limited resources but also enhance the capabilities of EDCF through policy cooperation. Therefore, it is essential to continue expanding these co-financing initiatives/schemes.

**Table 6.9. EDCF's Co-financing projects with DFIs in Africa**

Year	Country	Projects	Project costs	EDCF	AfDB	Co-financing
2007	Madagascar	National Highway Renovation Project (Toliara State No. 35)	39	14.1	12	AfDB
2008	Tanzania	Power grid expansion project (Killimanjaro – Arusa)	201	25.0	7	AfDB/ WB/ JICA
2009	Mozambique	Road renovation Phase 1 Project	264	20.0	151	AfDB
2009	Mali	Irrigation Development Phase 1 Project	249	21.6	66	AfDB
2010	Uganda	Educational improvement project	109	26.8	83	AfDB
2010	Tanzania	Project to Expand the Transmission Network Transmission (Iringa – Shinyanga)	459	36.4	69	AfDB/ WB/JICA/ EIB
2013	Ethiopia	Highway construction project (Mojo – Howasa)	349	100.0	129	AfDB

Source: Park *et al.* (2013), *The Role of International Development Finance Institutions in Financing Infrastructure in Africa and its implications for Korea*, KIEP.

By implementing these strategies and approaches, EDCF can effectively leverage DFI partnerships to support Korean companies entering African markets while contributing to sustainable development in Africa. This approach can help mitigate risks, increase access to financing, and enhance the overall impact and success of Korean investments in Africa.

### **4-3. The Case of Co-financing: Madagascar Ambatovy Nickel Mining Project**

This project is an international endeavor in which a domestic consortium, comprising Korea's Mining Promotion Corporation and private builders, collaborates with world-class natural resource development companies such as Sherrit and Sumitomo to develop, produce, and sell nickel mines in Madagascar. Export-Import Bank of Korea supported natural resource development and infrastructure construction orders for Korean companies through co-financing with Export Credit Agencies (ECAs) in advanced countries.

Various domestic construction companies (Gyeongnam Enterprise, Hyundai Engineering, Daewoo International, STX) participated in construction projects related to resource development, including power plants, smelting facilities site creation, and loading and transportation facilities. During that time, Madagascar had an unfavorable national credit rating of 7 according to the OECD. However, the project was able to share/mitigate the risks associated with financial support by engaging in joint participation with development financial institutions in advanced countries such as Japan and Europe. The Export-Import Bank of Korea provided \$195 million in external debt guarantees, enabling commercial banks (Shinhan Bank, Woori Bank, etc.) to participate in African projects that were challenging for local financial institutions to engage in. This project serves as an example of policy financial institutions entering

overseas business ventures with commercial financial institutions, leading financial support and undertaking external risks. The total required funds for the project (approximately \$3.69 billion), 43.1% was contributed by mining companies (Sherritt 40%, Korea’s Mining Promotion Corporation 27.5%, Sumitomo 27.5%, SNC 1%). The remaining funds were raised through project financing (P/F) from the Export-Import Bank of Korea, JBIC, EDC, AfDB, and EIB. Korea has secured preferential purchase rights for 50 percent of the production (copper).

The project received the prestigious “Deal of the Year” award presented by IJ Global, a renowned global financial journal specializing in project financing (PF). IJ Global annually reviews exceptional project financing cases and recognizes the most outstanding project with this esteemed award.

**Table 6.10. Structure of Madagascar Ambatovy Nickel Mining Project**

Sponsors	Sherritt (45%)/Korea Mining Promotion Corp (27.5%)/Sumitomo (27.5%)/SNC Lavalin (5%)	Total equity	US\$1.2 billion
Operator	Sherritt	Total senior debt	US\$2.1 billion
EPC Contractor	SNC Lavalin	Debt: equity ratio	63:37
Project lifetime	Estimated at 27 years	Agency support	JBIC – US\$700m KEXIM – US\$650m EIB – US\$300m EDC – US\$300m AfDB – US\$150m
Total Project Value	US\$3.3 billion	Date of financial close	Q4 2007

Note: Mining companies: Sherritt (Canada), Sumitomo (Japan), SNC (Canada); Financial institutions: JBIC (Japan), EDC (Canada), EIB (Europe), AfDB (Africa).

Source: IJ Global: Ambatovy Nickel Mine-Madagascar, <https://www.ijglobal.com/articles/42835/ambatovy-nickel-mine-madagascar> (Accessed on 15 July 2024).

The Ambatovy project, which involved Korea's Mining Promotion Agency and Daewoo International in 2006, commenced nickel and cobalt production in 2014. Initially, production was expected to begin in 2010, but actual commercial production was delayed by eight years from the time of the domestic consortium's investment. This delay resulted in cumulative losses. For example, POSCO International reported that as of the end of 2021, the recoverable amount of its stake (4%) was calculated at 24.1 billion Korean Won, representing a loss of 93% compared to the acquisition cost of 346.9 billion Korean Won. However, this project is now expanding its production in response to the surge in demand for these minerals and the significant increase in international minerals prices, driven by factors such as Russia's invasion of Ukraine and the growing production of electric vehicle batteries. Consequently, the previous plan to sell the Ambatovy mine, which had been facing financial losses for an extended period, is currently under review. The Ambatovy mine holds a significant position as one of the world's top three nickel mines, possessing a reserve of 150 million tons of nickel.



**Chapter 7**



**Conclusion**



The comprehensive analysis presented in this report underscores the profound and multifaceted potential for strengthening economic and development cooperation between the Republic of Korea and the diverse nations of Africa. As we cast our gaze towards the horizon of future possibilities, it becomes abundantly clear that this burgeoning partnership holds within it the seeds of immense promise, offering a wealth of mutual benefits through the mechanism of shared and sustainable growth. The landmark 2024 Korea-Africa Summit has, without a doubt, laid a robust and promising foundation for the deepening of these vital ties. However, the true challenge that lies ahead is the critical task of transmuting the lofty commitments and aspirations articulated during this summit into tangible, impactful actions and sustainable, long-term partnerships that can withstand the test of time and the vicissitudes of global economic and political landscapes.

The key findings of this exhaustive study paint a vivid picture of the multifaceted nature of this evolving partnership. First and foremost, the analysis emphatically underscores the necessity of adopting a holistic, multifaceted approach to development. The labyrinthine complexities inherent in Africa's development challenges demand nothing less than a comprehensive strategy that addresses the intricate web of interlinked issues spanning multiple sectors. This approach recognizes the fundamental truth that progress in one domain is inextricably tied to advancements in others, necessitating a strategy that seamlessly integrates economic, social, environmental, and governance dimensions of development into a cohesive whole.

Secondly, the study highlights the immense value of leveraging Korea's own remarkable development experience. Korea's awe-inspiring journey from a war-ravaged, impoverished nation to a global economic powerhouse stands as a beacon of hope and a wellspring of valuable lessons for African countries embarking on their own paths to development. However, the research emphasizes the crucial importance of adapting these experiences to

the unique local contexts of various African nations, rather than attempting to transplant Korean models wholesale. The focus, therefore, should be on the nuanced sharing of principles and methodologies, carefully tailored to the diverse and multifaceted realities of the African continent.

The third key finding illuminates the catalytic role that technology, particularly Korea's renowned prowess in Information and Communication Technology (ICT), can play in accelerating Africa's development trajectory. From cutting-edge e-government solutions to innovative applications in smart agriculture and digital health, Korean technologies possess the transformative potential to enable African countries to leapfrog traditional development stages, ushering in a new era of rapid progress and modernization.

Human capital development emerges as the fourth critical pillar of Korea-Africa cooperation. The study emphasizes that investing in Africa's human capital through comprehensive education initiatives, targeted skills training programs, and systematic knowledge transfer should form the cornerstone of this partnership. This approach not only supports Africa's immediate development needs but also lays the groundwork for enduring partnerships and rich cultural exchanges that can span generations.

The fifth key finding addresses the delicate balance required in harnessing Africa's abundant natural resources, particularly its critical minerals. While these resources present lucrative opportunities for mutually beneficial cooperation, the study strongly emphasizes the imperative of conducting resource development in a sustainable and responsible manner. The focus must be squarely on local value addition and ensuring tangible benefits for African communities, rather than perpetuating exploitative models of resource extraction.

Financial cooperation emerges as the sixth critical area, with the study highlighting the crucial role of leveraging partnerships with international development financial institutions. These partnerships are essential for overcoming the formidable challenges associated with financing high-risk

projects in Africa. The research advocates for Korea to proactively pursue innovative co-financing arrangements and explore cutting-edge financing mechanisms to support its engagement on the continent.

Lastly, the study underscores the indispensable role of private sector engagement in driving economic growth and fostering innovation. While acknowledging the importance of government-to-government cooperation, the research emphasizes that the dynamism and resources of the private sector are crucial for realizing the full potential of Korea-Africa cooperation. As such, Korea is urged to actively promote business partnerships, stimulate investment flows, and enhance trade relations with African countries.

Building on these key findings, the report offers a comprehensive set of forward-looking recommendations designed to chart a course for deepening and expanding Korea-Africa cooperation. These recommendations are both strategic and practical, addressing various aspects of the partnership from policy formulation to on-the-ground implementation.

The first recommendation calls for the development of a comprehensive Africa strategy by Korea. This strategy should be long-term in nature and adopt a whole-of-government approach, meticulously aligning diplomatic, economic, and development efforts. It should set clear, ambitious yet achievable goals, complemented by measurable targets that allow for regular assessment and recalibration of efforts.

To bridge the often-challenging gap between high-level commitments and tangible outcomes, the second recommendation advocates for the establishment of robust implementation mechanisms. These should include a high-level steering committee to provide strategic direction, regular progress reviews to ensure accountability, and a comprehensive monitoring and evaluation framework to track the impact of various initiatives.

The third recommendation emphasizes the critical need for enhancing Africa-specific expertise within Korean institutions. This involves substantial investments in building deep, country-specific knowledge of African contexts

across government agencies, academic institutions, and the private sector. The establishment of dedicated research centers, the promotion of African studies programs, and support for exchange initiatives are all crucial components of this recommendation.

Strengthening coordination with other development partners forms the fourth recommendation. This approach recognizes the crowded and sometimes fragmented nature of development efforts in Africa and seeks to maximize impact through active coordination with traditional donors and multilateral institutions. Such coordination can help avoid duplication of efforts, foster synergies, and ensure a more efficient allocation of resources.

The fifth recommendation focuses on the soft power aspect of cooperation, advocating for the promotion of people-to-people exchanges. By fostering stronger cultural, educational, and social ties, this approach aims to create a solid foundation for long-term partnerships that extend beyond official channels. Expanded scholarship programs, cultural exchange initiatives, and tourism promotion are all identified as key mechanisms for achieving this goal.

Innovation and entrepreneurship form the core of the sixth recommendation. Leveraging its own successful experience in fostering innovation and vibrant startup ecosystems, Korea is encouraged to support similar initiatives in Africa. This could involve the establishment of joint innovation hubs and the promotion of collaborations between Korean and African startups, potentially catalyzing a new wave of innovation-driven growth across the continent.

The seventh recommendation places sustainable development at the heart of all cooperation initiatives. It emphasizes the importance of aligning efforts with the UN Sustainable Development Goals and Africa's own development priorities, with a particular focus on enhancing climate resilience and promoting inclusive growth that benefits all segments of society.

Enhancing development finance capabilities is the focus of the eighth

recommendation. This involves strengthening Korea's development finance institutions and exploring innovative financing mechanisms to better support projects in Africa. Specific suggestions include expanding the role and resources of the Export-Import Bank of Korea and establishing dedicated Africa-focused investment funds.

The ninth recommendation calls for strengthened multilateral engagement, particularly with African regional institutions such as the African Union and various regional economic communities. Such engagement can provide platforms for broader cooperation and facilitate high-level policy dialogue on key issues affecting the continent.

Finally, the tenth recommendation advocates for the promotion of triangular cooperation. By exploring opportunities for collaboration with other countries or organizations, Korea can leverage complementary strengths and resources, potentially amplifying the impact of its development efforts in Africa.

In conclusion, the path to strengthened Korea-Africa cooperation is replete with both exciting opportunities and formidable challenges. Success in this endeavor will demand unwavering long-term commitment, a high degree of flexibility in approach, and a genuine spirit of partnership. It will require a willingness to learn, adapt, and innovate in the face of complex and ever-evolving development landscapes.

As Korea deepens its engagement with Africa, it stands poised to establish itself as a valued and integral partner in the continent's ongoing development journey. This partnership has the potential to contribute not only to economic growth and poverty reduction in Africa but also to addressing pressing global challenges such as climate change, food security, and the imperative of inclusive development.

For Korea, forging stronger ties with Africa offers a plethora of opportunities: the chance to diversify its economic partnerships, secure access to critical resources in an increasingly resource-constrained world, and significantly enhance its global influence and standing. By contributing

meaningfully to Africa's development, Korea can also bolster its soft power, cementing its position as a responsible and influential global actor.

The journey ahead will undoubtedly present numerous obstacles. These will range from the complexities of navigating diverse and sometimes volatile political landscapes to the monumental task of overcoming significant infrastructure gaps. Managing the inherent risks associated with large-scale projects in developing contexts will also pose ongoing challenges. However, with patience, mutual respect, and an unwavering shared commitment to sustainable development, the Korea-Africa partnership has the potential to yield truly transformative results that can reshape the economic and social landscapes of both regions.

In the final analysis, strengthening Korea-Africa economic and development cooperation represents not just an opportunity, but a strategic imperative for both sides. By building on the momentum generated by the 2024 Korea-Africa Summit and diligently implementing the wide-ranging recommendations outlined in this report, Korea and its African partners can forge a partnership of unprecedented depth and breadth. This partnership has the potential to drive sustained economic growth and holistic development, while simultaneously contributing to the creation of a more prosperous, sustainable, and equitable global future for all.

The ultimate success of this ambitious endeavor will hinge on several critical factors: sustained high-level engagement that keeps the partnership at the forefront of policy agendas, regular and substantive policy dialogues that allow for continuous refinement of strategies, and the active involvement of a diverse array of stakeholders. This last point is particularly crucial, requiring the meaningful participation of governments, businesses large and small, civil society organizations, and academic institutions from both Korea and African nations.

As Africa continues its complex journey toward economic transformation and sustainable development, and as Korea seeks to expand its global partnerships and enhance its international influence, the importance of

continuous learning, adaptation, and innovation cannot be overstated. The ability to remain flexible, to learn from both successes and setbacks, and to continuously innovate in the face of emerging challenges will be paramount.

In this context, the deepening of Korea-Africa cooperation offers far more than just an economic or diplomatic opportunity. It represents a pathway to shared growth, mutual benefit, and collective progress in an increasingly interconnected world. It is a testament to the power of international cooperation and a beacon of hope for what can be achieved when nations come together in a spirit of mutual respect and shared aspiration. As both Korea and Africa stand on the cusp of new eras in their respective development journeys, this partnership holds the promise of writing a new and inspiring chapter in the annals of international development cooperation.



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## Strengthening Korea's Economic and Development Cooperation with Africa: Focusing on Key Agendas of the 2024 Korea-Africa Summit

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본 보고서에서는 2024년 한-아프리카 정상회담의 주요 의제를 중심으로 한국과 아프리카 간 경제 및 개발협력 강화전략을 도출했다. 분석에서는 농업, 환경 문제, 도시 교통, 기술직업교육훈련(TVET), 의료, 디지털 협력, 한국의 개발 경험 공유 등 중요한 영역을 다루고 있다. 또한 한국이 신뢰할 수 있는 필수 광물 확보와 국제 개발금융기관을 활용한 협력을 제안한다. 아프리카는 낮은 생산성, 투자 자원의 부족, 열악한 인프라, 기후 변화에 대한 취약성 등과 함께 심각한 식량부족으로 인한 농업 문제에 직면해 있다. 농산물 가공시설 및 가치사슬 시스템 구축 지원과 관련해서 아프리카 상황에 맞는 맞춤형 스마트 팜 솔루션이 필요하다. 한국은 농업 정책 및 규제 체계 개발을 위한 파트너십을 구축하고, 농업 분야의 민관 파트너십을 추진할 수 있으며, 농업 관련 연구 및 농촌 개발협력의 활성화가 필요하다. 이러한 협력은 관개 및 수자원 관리 시스템을 개선하는 한편, 기후변화에 적응할 수 있는 작물의 품종 및 농업 발전을 촉진할 것이다.

한-아프리카 파트너십을 통해 기후변화, 사막화, 삼림 벌채, 생물다양



성 손실 등 아프리카의 증대한 환경 문제 해결에 기여할 수 있다. 또한 조림, 지속가능한 토지 관리, 생물다양성 보전 등 다양한 프로젝트에 참여할 수 있다. 기후변화와 관련된 재해의 조기 경보 시스템을 지원하는 것도 수원국에 도움이 될 것이다. 환경영향 평가 및 녹색성장 전략에 대한 교육, 지속가능한 도시 계획, 녹색 인프라 개발도 필요하며, 폐기물 관리, 통합적인 수자원 관리와 관련된 사업을 추진할 수 있을 것이다.

아프리카의 급속한 도시화는 교통 혼잡, 도로 안전, 대기 오염과 관련된 심각한 문제를 야기하고 있다. 한국은 BRT(급행버스) 시스템 개발을 지원하고, 교통 종합 계획 실행을 위한 기술 지원을 통해 아프리카 주요 도시에서 지능형 교통 시스템(ITS)에 대한 시범 프로젝트를 개발할 수 있다. 또한 무동력 교통 인프라(예: 자전거 도로, 보행자 전용 도로) 개발을 지원하고, 도시 교통 당국이 대중교통을 중심으로 개발을 추진할 수 있는 역량 구축을 지원할 수 있다.

TVET는 아프리카 기술 개발의 최우선 분야이다. 핵심 산업(예: 제조, ICT, 농업)에 초점을 맞춘 TVET 프로젝트로 국가 자격증 체계 개발을 지원하고, TVET를 위한 산학 파트너십을 추진할 수 있다. 한국의 ODA 프로젝트에 TVET 인프라·장비의 현대화를 지원하고, e-러닝 및 혼합 학습 접근법을 포함한 TVET 프로그램에 기업가 정신 교육을 촉진하기 위한 TVET 품질 보증 시스템을 포함할 수 있다.

아프리카의 의료 문제에는 높은 전염병 발병률, 비전염성 질병 증가, 취약한 의료 시스템 등이 포함된다. 국제협력 프로젝트로는 1차 의료 시스템을 강화하고, 원격 의료 및 e-헬스 솔루션 개발을 지원하며, 특정 질병에 대한 연구 센터를 설립하는 것도 원조의 효과성 증진에 도움이 될 것이다. 지역사회 보건인력 프로그램 및 보건교육 이니셔티브와 함께 보건

정책 및 관리역량 구축을 통해 제약 및 의료기기 제조 역량을 강화하는 것이 필수적이다.

아프리카 국가에서는 디지털 혁신이 시급하다. 국제적으로도 모범이 되는 전자정부 시스템을 개발한 한국은 아프리카 국가들의 관세, 조달, 통계 등 개선에 기여할 수 있을 것이다. 국제협력 파트너십 프로젝트로는 혁신 허브와 기술 단지를 개발하여 ICT 정책 입안 및 규제에 대한 기술 지원을 제공하고 디지털 금융을 고려해 볼 수 있다. 한편 현지 언어로 된 디지털 콘텐츠 개발을 지원할 수도 있다. 핵심 부문에서 신형 기술(예: AI, IoT, 블록체인)의 채택률을 높이려면 소외 계층을 대상으로 하는 디지털 리터러시 프로그램이 필요하다.

한국의 발전 경험은 아프리카 국가들의 벤치마킹 모델이 될 수 있다. 한국의 지식공유사업(KSP)에는 경제계획, 산업정책, 수출진흥전략, 인적 자원개발, 공공부문 개혁, 거버넌스 개선, 과학기술 및 혁신정책 등이 포함된다. 한국형 개발 모델을 적용한 한-아프리카 파트너십 사업을 통해 아프리카 국가별 맞춤형 정책자문 서비스를 제공할 수 있다. 싱크탱크와 정책 연구기관의 발전을 지원하고, 한국의 개발경험을 아프리카에 적용하기 위해 아프리카 정책 입안자 및 전문가와 공동연구를 실시하고, 초청 방문과 교환 프로그램을 추진할 수 있을 것이다.

여러 국가들에서 광물의 안정적 확보에 대한 우려가 높아지는 가운데, 아프리카의 중요한 광물 자원에 대한 관심이 부각되고 있다. 한국은 핵심 광물이 풍부한 아프리카 국가들과 파트너십을 강화하여 안정적 자원 공급원을 확보하고, 광물 가공 및 부가가치 역량 개발을 지원할 수 있다. 여기에는 광업 및 광물 부문의 기술 이전, 투명하고 효과적인 광물 거버넌스 프레임워크 개발, 지질 조사 및 자원 매핑에 대한 투자, 광업 공급망에서

현지 콘텐츠 개발 추진 등이 포함될 수 있다.

개발금융기관(DFI)은 한-아프리카 파트너십을 통해 경제협력을 지원 하는 데 매우 중요한 역할을 할 것이다. 다자 간 및 양자 간 DFI와의 공동 금융 협약을 통해 아프리카개발은행과의 협력을 강화할 수 있다. 이는 혼합금융과 같은 혁신적인 금융 메커니즘을 활용하고 복잡한 개발 프로젝트를 구성 및 실행하는 한국의 역량을 향상시킬 것이다. 광범위한 아프리카 파트너십 경험을 가진 유럽 DFI와의 전략적 파트너십을 통해 한국의 개발금융 기관을 강화하여 아프리카 프로젝트를 확대할 수 있다. 또한 공공-민간 파트너십으로 위험성을 완화하기 위해 민간 부문의 참여가 필요하다.

2024년 한-아프리카 정상회담을 통해 이러한 협력을 심화하기 위한 기반을 마련하게 되었다. 앞으로는 정상회담의 약속을 구체적인 행동과 지속가능한 장기 파트너십으로 전환하는 것이 중요할 것이다. 이를 위해서는 지속적인 고위급 참여, 정기적인 정책 대화, 효과적인 실행 메커니즘 구축을 추진해야 할 것이다.



## Contributors

### Jin-sang Lee

Dr. LEE, Jin-sang is an Endowed Chair Professor at Korea Aerospace University. He has more than 30 years of working experience on Africa. He published more than 40 academic articles and wrote many research reports in education, science and technology, and economic development of various African countries. He worked with international institutions such as UNDP, UNESCO, AfDB, ADB, OECD, EU, etc. He has been an academic and taught at universities in U.K. Ethiopia, and Korea since 1991. He graduated from the University of Glasgow, Masters Degree from Lancaster University and Ph.D. from the University of Strathclyde.

### Young Ho Park

Dr. Park Youngho has worked for 32 years as a Ph.D. in economics at the Africa-Middle East Team in the Korea Institute for International Economic Policy (KIEP), specializing in the analysis of African economies, Korea-Africa economic cooperation, and African development issues. Additionally, during his tenure at KIEP, he taught economic development theory and development cooperation for 14 years at the Graduate School of International and Area Studies, Hankuk University of Foreign Studies, where he lectured students from developing countries, including those from Africa.

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S	외부배포 발간물 일체	30만원	20만원	10만원
		8만원		4만원
A	East Asian Economic Review	8만원		4만원

\* 연구자 회원: 교수, 연구원, 학생, 전문가풀 회원

### ■ 가입방법

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\* 갱신통보사항

(\* 는 기재하지 마십시오)

특기사항





# Strengthening Korea's Economic and Development Cooperation with Africa: Focusing on Key Agendas of the 2024 Korea-Africa Summit

Jin-sang Lee and Young Ho Park

This report examines strategies for strengthening Korea's economic and development cooperation with Africa, focusing on key agendas from the 2024 Korea-Africa Summit. It covers critical areas, including agriculture, environmental issues, urban transportation, technical and vocational education and training (TVET), healthcare, digital cooperation, and the sharing of Korea's development experience. The report also provides recommendations for securing reliable critical minerals and leveraging international development financial institutions to support cooperation efforts.

