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Research Article

Analyses of the Role of the African Development Bank Group in the African Economy

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Abstract

This paper analyses the role of the African Development Bank in the African Economy. Over the past few years, the African Development Bank Group has tried to pursue its institutional reforms to maximize its development effectiveness and the quality of its operations. The efforts of its regional member countries and building their capacity helps to strengthen their economies. The Bank has also consolidated its role as the continent's leading development finance institution, knowledge and research center, and a leading voice in African development issues. The Bank has adopted the structure which consists of six vice-presidential complexes, for accountability and effective management. Africa as a continent is rich in natural resources but the lack of effective and ethical leadership compromises the African economy. The objective of this paper is to show how the African Development Bank is compromised by corrupt senior leaders in Africa. Economic decline in Africa is not caused by a lack of resources but caused by poor planning and self-enrichment by African leaders which includes leaders of the African Development Bank Group. This study has applied a secondary research methodology. The secondary research methodology was used because the information or data is currently available in conference papers, government gazettes, newspaper articles, online meeting conclusions, and interviews between journalists and African leaders. The findings presented in this paper are based on the data available and the paper is concluded by stating that the African Development Bank Group is used as a platform to loot public resources in African countries.

Keywords: *African bank, corruption, poor planning, mineral resources, economy.*

Introduction

The primary role and objective of the African Development Bank Group (AfDB) are to provide financial assistance to African countries. This assistance is expected to be offered to African countries individually or collectively. This financial assistance mainly focuses on funding projects that seek to contribute to the national economy and social development. Africa is known as a continent that is suffering economically and has high

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levels of poverty. This arrangement was designed to reduce poverty in Africa and to save more lives (Dashi, Lahaye and Rizvanolli, 2013: 10). The funding model is reasonable for African countries to be able to repay the loan with less interest on repayments. The funding model also guides African countries on how to use the money that is offered by the AfDB. The AfDB relies mainly on contributions made by donor countries and internal bank resources. This bank was established in 1964 after deliberations made by the global community and African heads of states on how to curb poverty and hunger in Africa. This bank is one of the largest banks in Africa it does not only provide financial support but also offers technical advice to member states (Stevens and Peikes, 2006: 154). The bank currently has 55 member countries. This bank in its inception has assisted many African countries to develop their national economic systems. Through this arrangement, various countries were able to raise their revenue through tax, and fees to pay for essential services. Many citizens were encouraged and supported to start their businesses. The primary focus of the bank was to invest in youth, businesses and assist in job creation. The money in most countries was not used for what it was requested for, corruption levels went up, leaders wanted to benefit at the expense of the citizens of their countries. Because of this, the institution had to introduce measures to control the funding model and access to funds. The bank is going through some drastic changes amongst which is to look at the staff and management of the bank. The relevance of the bank in the new technological societies and the economic situation in Africa are at the top of the discussion (Brent and Kruger, 2009: 1775). This speaks to what future challenges can be predicted by the bank and seeks to address. The contributions made by the bank in the past are well recognized by the current and future changes that have to be taken into consideration. This study therefore, analyzed the current role of the AfDB in the most recent challenges of African countries which mostly includes the member countries of the AfDB. This analyses will also include the role of the bank in providing financial assistance to countries that are facing political violence and oppression (Beck, Maimbo, Faye and Triki, 2011: 03).

Theoretical Perspectives

In the context of the countries, economic growth continues uniformly. There is an abundance of literature analyzing actual regional growth. Factor endowments, trends, rates of activity, or business conditions. In the literature, however, financial considerations have been ignored. There is one reason to treat monetary considerations as unrelated to regional growth based on the development of regional economies: firstly, regional economics was seen as a special example of an international economy. Differences between regions in growth rates were differentiated from global differences, so there were no apparent issues in the balance of payments (Spilimbergo, Londoño and Székely, 1999: 78). Consequently, the money did not cause 'problems.' A second characteristic of the literature on regional growth is a tendency to consider capital as a physical and financial force, as in many pre-Keynesian theories. Financial and actual estate, though interrelated, are very distinctive in post-Keynesian philosophy and a shared currency is only a part of monetary history. The impact of supply and demand for liquidity on the interest rate and directly from the desire and capacity to lend of the banks, both money and finance deeply influence an economic growth rate. Although we take it as an acknowledgment that capital accretion is the essence of economic growth and that investment and export are the major sources of income and outcomes fluctuations, I argue in this article that financial factors, in particular the banking system, play important roles in both regional and national stages of banking development and finance and regional development. The historical phase of transition is economic transformation. Economic possibilities and interactions are often continuously changing in monetary systems and their level of development (Song, Wang and Zhao, 2018: 335).

As the banking system of a nation, seen as a unit, advances in various stages of growth, improvements are required in the philosophy of how the economy operates. In the same way, at the same time or different periods, banking ties between regions may vary for different countries, thereby putting different regional growth theories at stake. From this viewpoint, I am examining the relationship between banking growth stages and the key regional development theories. The opportunity to build loans regardless of savings, for example (Capello, Caragliu and Nijkamp, 2011: 386). Only after they have entered a certain level of growth and coherence does Keynesian theory belong to banking systems. Regional growth theories remain together and vary in terms of saving or investing primacy. We would argue that their decision depends on whether or not they have entered the corresponding stage of banking growth. Beyond historical descriptions and the significance of these for the choice of theory, we study the role of financial factors in the establishment, regardless of existing regional resource or productivity dispositions, of a specific dynamic of regional growth. At a specific stage of banking growth, the following scenario describes the process of such a dynamic. The theory of Keynesian loans to fund new investments is that the lender's terms rely upon the optimism of both prospective lenders and wealthy holders, while optimistic optimism about actual investment returns and the need for financing resources comes about jointly. The potential for lending to some extent depends on the stock of financial resources available, but only in part. The importance of the stock depends on the growth phase of the financial institutions of the country, in particular the banks. The regional borrowing and loan trend, therefore, depends on the capital value in individual regions, wealth allocation, and liquidity choice of wealth holders. The future of regional wealth-giving and the structure and level of development is determined by these factors: a possible vicious cycle exists here (Pieńkowski and Berkowitz, 2016: 55).

Classical neoclassical general balance system, which follows the same line as an orthodox theory of the world trade as originally formulated in a single approach, provides the orthodox and neoclassical theory of regional production. Full general balance includes equalization factor-price and full use of variables. Thus, in balance, wages will only vary between regions due to different factor endows (e.g. a higher level of workforce skills) and unemployment cannot continue for a long time. Mainstream theory dynamics evolve adaptive mechanisms that re-establish regional balance once broken and eradicate regional inequalities. As a discrepancy in geographic earned earnings, the potential for regional imbalance is noted. In this mainstream ideology, which is identifiable with regional economies for many, considering its disparity with the reality encountered, investment funding is equated with saving. Financial institutions flow systematically between savers and borrowers, and funds flow to the highest perceived rates of return programs, no matter where (Tiba, 2019: 101).

Therefore, if one region is increasing faster, meaning more marginal investment productivity in that area, investment in that region will rise faster for some time. In the receiving regions, the inflow of capital is expected to decrease the rates of return, increase the average returns on other exporting regions, equalize the rate of return on financial capital, and put them back into line with the rate of return in other regions. Financial and real capital in this theory loses their distinct identities. Unbalance can be the product of a saving/investment inequality in each country, in the form of different rates of growth within regions (Anyanwu, 2017: 283). Though capital flows are a crucial factor in transition, conventional theoreticians argue the importance of regional/financial conditions: the national borrowing savings expense is one. The regions benefit from extra-regional savings channels when returns on local investments are poor and when returns on local investment are high extra-regional savings streams. Regional banks are also cushioned by liquidity sources in the form of national financial assets or "generalized claims" from variations in their balance sheets.

Marxian theory typically focuses on "actual" variables. Lenin's imperialist ideology, for example, emphasized portfolio investment dominated by investors in the financial institution's economic center of influence, as in the German model. Money is important primarily because the bankers who loan it have a share of the surplus generated by the regions being exploited. This is the only difference between financial and physical capital for Lenin. The Marx theory still suppresses the importance of currency variables has been seen by many Marxist theorists' ambivalences against the likelihood of separate financial triggers. On the other hand, the dependence theory is most closely linked with the case of Latin America, the recent development of the Lenin solution. It recognizes disagreeable regional growth as the main characteristic of capitalist economies and systematically explains the essence of trade and investment patterns in an area that has a formative impact on the economic environment and development of the region. The regions of a nation are split into the center and the peripheries (Twerefou, Akpalu and Mensah, 2019: 789). The imperatives of growth in a center dominate "development" in the periphery: this takes the shape of investment projects agreed by the center to generate a surplus for the usage of this centre. The investment would lead to continuous dependence and relative underdevelopment of the periphery regions relying on the center for their goods, technology, and finance. Modern dependence theorists concentrate nowadays on actual, direct investment, mostly by international companies, where Lenin emphasized portfolio investments. Investment is governed not by a planned return to representatives of the Periphery of or of the entire economy, but by the incremental productivity of programs viewed by the Centre. Cash crops are the traditional examples: by necessity, the crop surpasses the producer's own needs; if there were no competition, their increased harvest would be worthless. The producer is a country; the crop is for export to the center (Omoshoro-Jones and Bonga-Bonga, 2020: 240).

Research Methodology

The research approach is the practice of identifying, selecting, processing and analyzing information on topics using special procedures or techniques. The methodology section of a report enables the researcher to assess the general feasibility and reliability of a study objectively. The analysis approach entails the use of currently existing evidence in secondary research and/or desk research. The secondary analysis covers research publications and related papers contained in research studies (Noor, 2008: 1602). The public archives, websites, and records collected from surveys that have already been fulfilled will make such documentation accessible. Popular examples include textbooks, encyclopedias, news stories, critiques, and meta-analyzes. Authors can derive information from published academic articles, government papers, statistical datasets, and historical records when performing secondary research. This study applied secondary research methodology. Available data from different sources was used to reach conclusions, data from newspaper articles, website reports (Ørngreen and Levinsen, 2017: 71).

Results and Discussion

The African development bank is the Bank Group that periodically prepares reports, which form the basis of sectoral policy recommendations, to guide its operating activities in various sectors and topics. Sectoral policy guidelines serve the Group's inner decision-making processes by offering a reference framework in which individual projects and activities can be considered and evaluated. It will more reliably advise the Member States on the kind of industry ventures on which the Bank Group is expected to support, thereupon facilitating both regional Member States' preparations and long-term cooperation between the Bank Group and its members (Boateng, Amponsah and Annor Baah, 2017: 307). The Bank Group's activities are also assisted by electoral reform guidance. The African Development Bank Group (AfDB) is one of the main development organizations in the continent of Africa, supplying its 55 member countries with both financial and technical assistance. The AFDB plays a clear role in creating specific data and information offerings, offering specialist guidance and powers for its stakeholders, as no other bilateral or multilateral development partner can compare. The AfDB is a trustworthy advisor for several African countries as the region's leading development Bank (Runde, 2019: 03).

Development and prospects for Africa in the Covid 19 pandemic have highly been affected. The economic crisis in Africa is expected to rebound in 2021 in half a hundred years. The unforeseen global pandemic triggered by COVID–19 in 2020 limited economic growth in Africa. In Africa real GDP is expected to rise by 3.4% in 2021 following a contract of 2.1% in 2020. In more than half a century this expected recovery from the worst recession will be assisted by a resumption in tourism, a revival of food prices, and the rollback of pandemic-induced restrictions (Uduji, Okolo-Obasi and Asongu, 2019: 350). However, both global and domestic threats have greatly affected the outlook. The pandemic of COVID–19 has brought about an increase in government funding criteria in Africa. Sincerely, governments have annexed fiscal stimulus packages that span approximately 0.02 percent of South Sudan's GDP to approximately 10.4 percent of its GDP, since the COVID–19 pandemic started in early 2020. The Bank calculates that by 2020/21 African governments would require approximately $154 billion in additional gross funding to address the crisis. These packages had large direct impacts on budget balances, debt requirements, and debt ratios. These packages had immediate effects (African Development Bank Group, 2021: 05).

Resolution of debt and the connection between management and development Africa's debt settlement has been always chaotic, protracted, and expensive. In countries that behave pre-emptive and collaborative and where economic regulation is better, the economic effects of sovereign debt restructuring are less serious. The Heavily Indebted Poor Countries program, however, took more than a decade and long litigation between private and official creditors in Africa re-established debt settlement. The absence, especially with private creditors, of orderly and successful sovereign-debt settlement makes distressing economies (Anyanwu and Kponnou, 2017: 78).

Sub-Saharan Africa is a continent with a diversification that has a capacity for sustainable development and poverty eradication in the region, half of which are under 25 years of age by 2050 so that people across the continent can live stable lives. Sub-Saharan Africa has more than 1 billion inhabitants. The continent creates a whole new way of growth, using its capital and its citizens as a result of the biggest free-trade region in the world and a market of 1.2 billion people (Inder, Kabore, Nolan, Cornwell, Contreras Suarez, Crawford and Kamara, 2017: 170). The zone consists of countries of the modest, lower, medium, and high incomes, 18 of which are vulnerable or have conflict-related implications. There are also 13 small countries in Africa, with a small population, scarce human resources, and restricted space. Since the Sub-Saharan African countries have managed to contain with comparatively few cases COVID-19 viruses, the pandemic continues to affect Africa's life and economy, it is expected that economic activity will decrease by 3.3 percent in 2020, confirming the initial contraction in the country over twenty-five years. This year the substantial economic activity slowdown is expected to cost the country at least $115 billion in export losses, partly due to lower domestic demand and spending resulting from containment steps to slow the spread of coronavirus (The World Bank In Africa, 2020).

Development Climate in Africa Initiative (ClimDev-Africa) as an initiative of the African Development Bank, of the African Union Commission, and the United Nations Economic Commission for Africa, ClimDev-Africa or the 'Program was developed as part of the Africa Climate Change Programme' to solve the challenges of climate change. ClimDev-Africa Program Special Fund, funds three key fields: generate and broadly disseminate accurate and high-quality climate information in Africa; capacity building in policymakers; and policy support agencies to provide climate information in progress. The program ClimDev-Africa Program Special Fund (CDSF). It helps extend the access to international climate change funding as part of the BDF's pledge to support Africa's drive towards climate-smart growth (Ajide and Osode, 2017: 212). The AfDB is the Environment Investment Fund implementing agency (CIF). Established in 2008 as one of the world's biggest fast-track climate finance tools, CIF's USD 8 billion global jump-starts for low carbon and climate-resilient growth provides emerging worldwide. The CIF offers grants, concessional loans, risk reduction tools, and equity for developed countries to leverage substantial private-sector funding. The owners of the bank must decide the degree and the role of politics in the work of the bank before the African Development Bank can function efficiently and achieve a status comparable to that of the other regional banks. Today, the bank was excessively politically confronted with the consequence that it had to do its job-hungry for money. The most employed use of compromise as a method for also addressing technological challenges has also been over-politicized. In that case, the laws and guidelines set down were to be ignored (Fordwor, 1981: 1130). "The African Development Bank - ready to face Africa's evolving challenges? The EBA Report? Talks about the emerging problems of the African Development Bank. It is published at Zurich University in Switzerland by Christopher Humphrey. Multilateral development banks are a major component of Swedish development assistance. The African Development Bank, AfDB, is one such organization. Sweden was the sixth most significant contributor to the AFDB in terms of SEK 2.4 billion for the last replenishment. The bank's significant Swedish partner is Swedish development assistance's Africa priority. The author states that the preconditions for the business model of the AfDB are evolving as the African economies develop. Profits from lending to middle-income countries fund the expenses of the Bank. Although as this loan decreases, there is also a reduction in the opportunities for granting subsidized loans to developing countries (Humphrey, 2014: 02).

There are two premises for the recommendations presented in this report. First, that economic development is the principal driving force behind the elimination of poverty, and, secondly, an open complex and gradually deepening financial system is a necessary precondition for achieving economic growth. Three criteria guide the guidelines that arise from these premises: teamwork, competitive benefits, and added value (Nwosu and Orji, 2017: 56). The theory of cooperation acknowledges the responsibility of the Member States themselves in the development and execution of policies and that the Bank is merely one of several donor countries and organizations that purely execute their strategies. As such, the Bank shall design and co-operate with other donor nations, organizations, in particular, the World Bank and IMF, and international organizations in coordination with the member countries. The Bank would like, by planning its policy, to prevent major overlaps or conflicts between its efforts to improve financial markets in Africa and interventions of other foreign institutions. The theory of comparative benefit requires the bank to use its unique relationships with African countries and its experience and skills to recognize the niches of its activities in particular fields. The VAT theory requires that the Bank assess the precise effects and long-term viability of its activities as well as ensuring cost efficiency (Katunze, Kuteesa, Mijumbi and Mahebe, 2017: 135). Interventions by the Bank can also depend on other parties' assistance. Thus, it can engage in areas that it deems essential, but where other organizations cannot operate or function in appropriate depth in the light of its vision. Theoretical and observational evidence has shown a strong link between stable financial systems, sustainable growth, and poverty reduction. The financial system's contributions include mobilizing deposits, increasing investment performance, reducing costs of intermediation between savers and borrowers, preserving macroeconomic stability, and expanding the poor's access to financial services. African countries have implemented financial market reforms since the mid-1980s to restore macroeconomic stability and the protection and health of their financial markets in the context of the structural transformation initiatives funded both by the IMF / World Bank and the Bank Group. These reforms were, however, not enough to strengthen financial markets and set them on a sustainable development course or to serve the potential role of this sector for growth and poverty reduction while helping to break through the use of financial sector repression in African countries (Van den Honert, Gouws and Hoffman, 2018: 402). The growth of the financial sector is different between the African countries and, due to the degree of financial system evolution, the goals for reform initiatives will also vary among countries. The stage of financial sector developments and soundness also includes several macroeconomic and macro prudential metrics, such as GDP growth, inflation, fiscal balance, external debt, adequacy of resources, management, liquidity of income, and market risk sensitivity. The perceived state of the financial system provides a clearer image of these criteria on typical criteria of growth of financial sectors. It also contributes to the formulation of national policies. The unfinished Financial reform agenda in Africa has been to fill three gaps: the financial brokerage gap represented by the fragile financial system; the development gap reflected in the shortage of long-term investment finance; and the poverty reduction gap shown by MSMEs' large unsatisfactory demands for financial services and economically active demands. To meet this broad agenda and to assist its execution, the study recommends an integrated approach covering interventions in the three fields of financial policies, financial infrastructure, and financial institutions (Ndaguba and Okonkwo, 2017: 140).

Conclusion

Financial sector growth is an essential part of the Bank Group's plan to achieve the twin objectives of sustainable development promotion and poverty alleviation in Africa. Other multilateral organizations such as the World Bank or the IMF have recently introduced more systematic policies for their financial sector activities in their Member States, and are also focusing on financial sector concerns with a wider range of tools. This movement cannot be excluded by the Bank Community. At present, to efficiently solve financial sector issues in Africa, the Bank has been using all the requisite organizational instruments and core personnel who have gained valuable experience and skills through joint involvement with the World Bank and IMF to negotiates SALs and SECALs. The Bank will continue to re-focus these tools and draw on its employee experience along with the criteria of the plan suggested. The macro-economic and other issues related to risk reduction and management within the financial sector, and the financial policy part of the growth in general, should be adequately covered by the Bretton Woods Institutions. In turn, the Bank Group will concentrate on resolving additional holes in the growth of the financial sector in Africa: the development and poverty mitigation dimensions, as well as developing the financial governance and infrastructure concerned, building financial institutions' capability, promoting financial inclusion and remedying gender difficulties in business finance. The Bank would also work together to this degree.

References

1. African Development Bank Group. (2021). *African Economic Outlook 2021*. https://www.afdb.org/en/knowledge/publications/african-economic-outlook
2. Ajide, K.B., & Osode, O.E. (2017). Does FDI dampen or magnify output growth volatility in the ECOWAS region? *African Development Review, 29*(2), 211-222.
3. Anyanwu, J.C. (2017). Manufacturing value added development in North Africa: Analysis of key drivers. *Asian Development Policy Review, 5*(4), 281-298.
4. Anyanwu, J.C., & Kponnou, M. (2017). Accelerating agro-manufacturing to feed Africa. *African Development Review, 29*(S2), 78-95.
5. Beck, T., Maimbo, S.M., Faye, I., & Triki, T. (2011). *Financing Africa: Through the crisis and beyond.* The World Bank.
6. Boateng, E., Amponsah, M., & Annor Baah, C. (2017). Complementarity effect of financial development and FDI on investment in Sub-Saharan Africa: A panel data analysis. *African Development Review, 29*(2), 305-318.
7. Brent, A.C., & Kruger, W.J. (2009). Systems analyses and the sustainable transfer of renewable energy technologies: A focus on remote areas of Africa. *Renewable Energy, 34*(7), 1774-1781.
8. Capello, R., Caragliu, A., & Nijkamp, P. (2011). Territorial capital and regional growth: increasing returns in knowledge use. *Tijdschrift voor economische en sociale geografie, 10*2(4), 385-405.
9. Dashi, E., Lahaye, E., & Rizvanolli, R. (2013). *Trends in International Funding for Financial Inclusion.*

10. Fordwor, K.D. (1981). Some unresolved problems of the African Development Bank. *World Development*, *9*(11-12), 1129-1139.

11. Humphrey, C. (2014). *The African Development Bank – Ready to Face the Challenges of the Future?* https://eba.se/en/reports/the-african-development-bank-ready-to-face-the-challenges-of-the-future/1844/

12. Inder, B., Kabore, C., Nolan, S., Cornwell, K., Contreras Suarez, D., Crawford, A., & Kamara, J.K. (2017). Livelihoods and child welfare among poor rural farmers in East Africa. *African Development Review, 29*(2), 169-183.

13. Katunze, M., Kuteesa, A., Mijumbi, T., & Mahebe, D. (2017). Uganda warehousing receipt system: improving market performance and productivity. *African Development Review*, *29*(S2), 135-146.

14. Ndaguba, E.A., & Okonkwo, C. (2017). Feasibility of funding peace operation in Africa: Understanding the challenges of Southern African development community standby force (SADCSF). *Africa Review*, *9*(2), 140-153.

15. Noor, K.B.M. (2008). Case study: A strategic research methodology. American journal of applied sciences, 5(11), 1602-1604.

16. Nwosu, E.O., & Orji, A. (2017). Addressing poverty and gender inequality through access to formal credit and enhanced enterprise performance in Nigeria: An empirical investigation. *African Development Review, 29*(S1), 56-72.

17. Omoshoro-Jones, O.S., & Bonga-Bonga, L. (2020). The emergence of regional business cycle in Africa—a reality or myth? A Bayesian dynamic factor model analysis. *The World Economy, 43*(1), 239-273.

18. Ørngreen, R., & Levinsen, K. (2017). Workshops as a Research Methodology. Electronic *Journal of E-learning, 15*(1), 70-81.

19. Pieńkowski, J., & Berkowitz, P. (2016). 4 Econometric assessments of Cohesion Policy growth effects. *EU cohesion policy, 55.*

20. Runde, D.F. (2019). *The Role of the AfDB and the Future of Africa*. https://www.csis.org/analysis/role-afdb-and-future-africa

21. Song, M., Wang, J., & Zhao, J. (2018). Coal endowment, resource curse, and high coal-consuming industries location: analysis based on large-scale data. *Resources, Conservation and Recycling*, *129,* 333-344.

22. Spilimbergo, A., Londoño, J.L., & Székely, M. (1999). Income distribution, factor endowments, and trade openness. *Journal of development Economics, 59*(1), 77-101.

23. Stevens, B., & Peikes, D. (2006). When the funding stops: Do grantees of the Local Initiative Funding Partners Program sustain themselves? *Evaluation and Program Planning, 29*(2), 153-161.

24. The World Bank In Africa. 2020. *Driven by the economic fallout of the COVID-19 pandemic, growth in Sub-Saharan Africa is predicted to fall to -3.3% in 2020, pushing the region into its first recession in 25 years.* https://www.worldbank.org/en/region/afr/overview
25. Tiba, S. (2019). Modeling the nexus between resources abundance and economic growth: An overview from the PSTR model. *Resources Policy, 64*, 101503.
26. Twerefou, D.K., Akpalu, W., & Mensah, A.C.E. (2019). Trade-induced environmental quality: the role of factor endowment and environmental regulation in Africa. *Climate and Development, 11*(9), 786-798.
27. Uduji, J.I., Okolo-Obasi, E.N., & Asongu, S.A. (2019). Growth enhancement support scheme (GESS) and farmers’ fertilizer use in rural Nigeria. *African Development Review, 31*(3), 348-363.
28. Van den Honert, M.S., Gouws, P.A., & Hoffman, L.C. (2018). Importance and implications of antibiotic resistance development in livestock and wildlife farming in South Africa: A Review. *South African Journal of Animal Science, 48*(3), 401-412.