

UNDERSTANDING THE POLITICAL ECONOMY OF CRUDE OIL RENT COLLECTION IN AFRICA: LESSONS AND STRATEGIC POLICY OPTIONS

By

GBADEDBO ODULARU¹ & EMMANUEL OSIKHENA AVIOMOH²

Abstract

For the past five decades, crude oil has been a major source of revenue, energy and foreign exchange for the oil rich African countries like Nigeria, Libya, Algeria, Angola, and Cameroon. With the increase in the number of African countries that have discovered natural gas and crude oil – Ghana, Niger, Liberia, Mozambique, Uganda, Kenya, Tanzania, DRC, Mauritania, Sierra Leone etc -, there is a need to understand the political economy of crude oil rent collection in Africa. In fact, resource rich countries could suffer from paradoxical “*backwardization*” resulting from relative resource endowments. Often, there is an increasing focus on the accruing of more revenues to the resource owning country thereby, advocating for a more efficient fiscal regimes to extract rents - earnings which accrue to exploitation of these resources in excess of transfer earnings. However, this often deteriorates the “*backwardization*” phenomenon when the existing socio-economic and financial framework is inadequate to absorb these rents. Much like the effects of an excess in demand over supply, increasing revenues often work to the disadvantage of the resource owning countries through exchange rate depreciation when periods of price rises in their resource are accompanied by spending traditions which cannot be maintained when prices fall due to the deterioration of the productivity of the economy of the resource owning country. Against this background, this paper will analyse the political economy of crude oil rent collection in Africa. This discussion will assess the lessons learned, policy gaps and strategic policy options for Africa countries to benefit from the judicious collection of crude oil rents. This paper reviews the literature on the adequacy of collected oil rents in order to prescribe policies on how collection of more rents will enhance absorptive capacity for African-oil producing economies.

Keywords: crude oil, political economy, Africa, crude oil rent collection, policy options.

¹ Regional Policy and Markets Analyst, Forum for Agricultural Research in Africa (FARA), Ghana.

² The Research Coordinator, Petroleum Economics Unit, Centre for Analytical Innovatus, P. O Box 4111, University of Ibadan Post Office, Ibadan, Nigeria.

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1.0 Introduction

According to African Economic Outlook 2013, Africa's agricultural and oil economies could contribute significantly to economic transformation and improved household incomes. Agriculture and the crude oil sectors have significant roles to play in improving national and regional wealth, raising the risks and challenges being faced by each sector. Agricultural as well as the oil sectors portend bright and promising political and socio-economic prospects, confirming its healthy resilience to internal and external shocks and its role as a growth pole in an ailing global economy. It is indeed a real opportunity for African economies, individually, and collectively to promote economic transformation and to address poverty, inequality and youth unemployment by capitalizing on their resource endowments and high international commodity prices, as well as changes in how global production processes are organized. Currently, Africa's growth is characterised by insufficient poverty reduction, persisting unemployment, increased income inequalities and political tyrannism. It is these unsavoury characteristics of growth, integral to why resource rich African economies are plagued with a resource curse that the new transformation proposed in this work attempts to eradicate – providing a road map to doing so, in essence.

More so, with regard to these challenges, increasing number of oil-producing African countries might experience '*backwardization*' based on the relative abundance of such minerals in a phenomenon known as a "resource curse", as stated earlier (Bjorvatv & Selvik, 2008; Sachs & Warner, 2001; Klare 2002). This "*backwardization*" is especially prominent in mineral resources such as petroleum which has relatively high geographic concentration properties (Busby, Isham, Prichett, & Woolcock, 2003). Furthermore, amidst weak institutions, the "*curse*" can present more impediments to the growth of a country (Mehlum, Moene, & Torvik, 2006a, 2006b). Therefore, it is logical that the impact of these natural resource have many consequences as to the degree of economic efficiency and distributional equity prevalent in a country (Cairns, 1982). As such, it is imperative that these resources be considered by African Governments in fiscal policies and national development plans aimed at advancing the welfare of the people (Hughes 1975).

Another phenomenon is the occurrence of economic rents³. Apart from the normal strategic importance of these resources, the occurrence of Ricardian (resource) rents and monopoly rent in cases of oligopolies and monopolies warrant and justify the extractive industrial policies of the resource owning sovereignty since these rents are typically returns which accrue to the exploitation activities of these resources which are inelastic in supply (Hughes 1975, Cairns 1982). The most important consideration, however, is the absorptive capacity of the extracting country⁴.

In fact, rent collection activities in isolation of the consideration of absorptive capacity have high potentials of giving rise to rent-seeking activities, resource curse and slow convergence of inter-regional development, leading to the reinforcement of factors contributing to general economic decline. Examples include the frustrated savings and impeded resource exploitation activities due to lack of social cohesion. Thus, **following the attainment of an adequate level of absorptive capacity, policies aimed at extracting rents ideally should then be structured so as not to distort the supply of investments needed to exploit resources.** It is at this point that the distinction of Quasi-rents from ‘real’ Ricardian rents becomes more important. Other forms of distortions exclusive of a drop in the supply of investments, and which might take the form of premature field abandonment by investing companies, include over-investment (or ‘gold-plating’) and transfer pricing which are made easy by the prevalence of a climate embodied in uncertainty (Wessel, 1967; Kemp, 1992) – in terms of an appropriate ‘risk-adjusted’ return rate (Cairns, 1982) and competitive market prices of tradable inputs (Hughes, 1975).

Against this background, the purpose of this study is essentially to highlight the need for the linkage of rent collection activities to the absorptive capacity and to utilize this as a policy lesson for other newly developed oil countries in Africa, and the strategic role to be played by the African Governments in the adoption of fiscal tools of rent extraction, monitoring and compliance.

1.1 The Problem Statement

³ Economic rents can be defined as returns which accrue to a factor of production/economic resource in inelastic supply over its supply price (Wessel, 1967; Kemp, 1992).

⁴ Absorptive capacity essentially refers to the ability of the resource owning country to put the collected rents to good use. It determines the appropriateness and/or adequacy of the level of rent extraction.

African countries have continued to experience some growth over the past two decades, in addition to the discovery of crude oil and other strategic mineral resources. However, poverty is still quite high and governance institutions are still very weak in order to strengthen the capacity of the economy to manage the oil wealth and agricultural booms in an accountable and transparent manner. Thus the oil mineral economies still find it difficult to reduce poverty, hunger and malnutrition, thereby, placing strong pressure on these countries not only to continue to grow fast but also to target and attain a poverty –reducing impacts (Odularu, 2008).. In order to strengthen the institutions and governance for transparency, the glaring mismatch between oil rent collection from the absorptive capacity in Africa, presents a great challenge considering the optimal tools / combination of tools for non-distorting extraction of economic rents. The increasingly wide mismatch between rent collected and absorptive capacity presents a great challenge considering that the optimal tools/combination of tools for non-distorting extraction of economic rents have many inherent problems with respect to their applicability which are exacerbated by uncertainty. As such, the application of the definition of economic rents to the petroleum industry is made more difficult by the occurrence of price volatility in the petroleum industry; migration of costs (developmental, operating, administration and compliance) which will vary between fields with different geographic and quality characteristics (Hughes, 1975); the nature of resource rent ownership (like the Canadian federal and provincial setup – without addressing land owner issues); the non-renewable nature of petroleum deposits (Kemp, 1992) and, market imperfections, just to name a few. The nature and magnitude of opportunity costs which forms a conceptual basis for the capturing of economic rents also presents arguments as to the justification of absorptive capacity most especially in oil-rich and producing African countries (Aviomoh, 2010; Aviomoh, Odularu & Kasim, 2013)..

1.2 Objective of the Study

This work thus aims to:

- Develop a framework for assessing the adequacy or optimality of existing rent-collection mechanisms in selected economies;
- Establishing a strong Argument with regard to Absorptive Capacity considerations and resource rent extraction as a means of avoiding or ameliorating the existence of a resource curse;

- Examining the progression of from resource discovery to curse in a typical country – Nigeria; and
- Developing a strong, workable framework for battling the presence of a resource curse in contemporary times and Less Developed Countries (LDC's) via the utilization of a strategic combination of already existing (International) Initiatives. This will include schemes constructed specifically to take advantage of Africa's increasingly improving growth indices, allowing for greater potential for increased inclusive growth cum development, inequality reduction and International Partnership with resource rich (African) economies.

1.3 Some stylized fact about oil sector in Africa

The UNCTAD World Investment Report 2012 – Oil and gas producing countries continue to see growth and good prospects for future investments. As reflected in the FDI composition of top recipient countries, investment in extractive industries remains the most important driver of FDI to African countries such as Democratic Republic of the Congo, Mauritania, Mozambique and Uganda. Of investments channelled to the two major oil-producing countries of the West African region, FDI to Ghana remained stable at USD3.3 billion, but inflows to Nigeria declined by 21 per cent to USD7.0 billion, accounting for much of the diminished flows to the region. In addition, natural resources continue to attract investment from mining transnational corporations (TNCs). For example, significant FDI was targeted at the expansion of copper cobalt Tenke Fungurume mine (Democratic Republic of Congo). Further, inflows to Mozambique, for example, doubled to USD5.2 billion, attracted by the country's huge offshore gas deposits. The point has to be emphasized that natural resources are still the mainstay of FDI flows in Africa, though FDI in consumer-oriented manufacturing and services is beginning to climb, reflecting the growing purchasing power of Africa's emerging middle class. However, with the increasing discovery of crude oil in selected African countries, the inflow of FDI to these emerging sectors are greenfield investments (investment in businesses or economic sectors that are new to a given recipient country).

The discovered gas reserved in the United Republic of Tanzania and oil fields in Uganda drew increased FDI to East Africa. Consequently, East African FDI inflows expanded from USD4.5 billion in 2011 to 6.3 billion in 2012. Examining Africa's physical trade balances (PTBs) – defined as imports minus exports, and which is a reflection of its endowment, production and consumption

structure, Africa accounts for about 10 per cent of the global oil reserves. Its share of world's production of oil is 12% and the main African countries are Nigeria, Angola, Algeria and Libya.

2.0 Petroleum Exploitation and Economic Development: Review of Relevant Literature

This section seeks to derive a conclusion as to the concept – absorptive capacity – which links petroleum/resource exploitation to economic progress through a set of logically consistent propositions directly culled from Helen Hughes' 1975 work on Economic rents. As such, given the non-renewable characteristic of petroleum resources Hughes (1975: p815) states that:

“At a given time the opportunity cost of the resource rent (and the monopolistic rent in a non-competitive market) which could accrue from a mineral deposit is the discounted gain which would be earned if the mineral could be exploited in the future and all rents would then accrue to the mineral owning country. Thus, any shortfall in the rents accruing to the country is equivalent to the loss of a wasting asset from which the country could benefit in the future. This opportunity cost would only be zero if it were certain that the minerals would not have been discovered and exploited in the future, or if they would not have received any of the rent under any circumstances of exploitation. Under all other conditions the opportunity cost of the rent is positive. Thus, (ceteris Paribus) it would not pay a country to exploit a mineral deposit until it could negotiate a position in which all the resource rent (and the maximum of the monopolistic rent that could be extracted) would accrue to it.”[Proposition/Prop. I]

Though in respect to pricing, Kemp (1992:p104) agrees with this view stating that governments should optimize benefits from resources exploitation by making sure opportunity costs are reflected. But, in the realistic default of the *Ceteris Paribus* assumption and the inherent costs from waiting, other conditions have to be considered. These conditions include: the migration of prices of mineral resources which tend to be positively related to

rising living standards; and, the absorptive capacity of the resource owning country (Hughes 1975; Kemp 1992: 104). According to Hughs (1975), absorptive capacity might be negligible in small mineral-rich countries depending on the likelihood of increase in prices or rents relative to returns from foreign investments in which returns from mineral exploitation could be made if exploitation took place immediately. However, the decision for future versus immediate exploitation further depends on inflation in industrialized (oil importing) countries, willingness to become host to large foreign investment, adjustment capacity of international financial markets and the level of real interest rates. In the event of high oligopolistic prices and resulting exploitation of petroleum in the immediate, leading to an encouragement of substitutes which will erode future rents, current earnings no matter how small would be optimal (Hughes, 1975). Absorptive capacity does have greater implications to timing of petroleum exploitation for most mineral owning countries such as Nigeria.

Absorptive capacity is also a very important consideration as it appeals to the concept of sustainable development. According to Hughes (1975:p.816)

“the principal benefits of a mining project are likely to accrue from the stream of income to local material and service inputs and factors of production, from the local multiplier effects of indigenous and foreign incomes generated by the project, favourable net balance-of-payment effects, and the increase in government revenues through the collection of resource and monopoly rents, taxes on personal incomes and profits, and indirect taxes on transactions generated by the project. Future returns on the investment of such incomes must also be taken into account. The improvement of technology and skills directly and indirectly associated with a particular mineral development is also likely to benefit the economy, at least in the long run. All such payments and subsequent investments from them in the local economy will be affected by the level of overall development in the local economy.”.....[Prop. II]

In largely underdeveloped economies; where the bulk of tradable inputs, technology, and management are provided by transnational companies with little local participation or ownership; local inflow of income and multiplier effects are likely to be limited. Such

payments will tend to increase as more local input becomes more available through development. In short,

“the availability of local inputs and the extent of local participation in labour, management and entrepreneurship and the share of rents and incomes collected by the government, will affect the net contribution that a mineral project will make to government revenues and to the balance of payment over time.”[Prop.

III]

The costs of mineral exploitation, in terms of bidding away skills from other economic activity will be reduced with economic development. Other negative externalities which will be reduced with economic development include the extent of foreign investment which has political and direct costs (Hughes 1975:p.816).

Macro-economically, income flows and rents from mineral exploitation will provide funds necessary for development in both private and public sectors. This potential is greatly diminished by the bottlenecks created by entrepreneurial, manpower, administrative and physical infrastructure inadequacies in less developed countries. In support of the foregoing, Bjorvatv & Selvik, (2008) show that the quality of a country’s institutions determines its ability to transform resource wealth into economic development. Countries with weak institutions tend to display a strong negative growth effect (Mehlum, Moene, & Torvik, 2006a, 2006b). But, there appears to also be dual-causality between natural resource wealth and quality of institutions where characterized by the possibility of a negative effect of natural resource wealth on institutions (Bulte, Damania, & Deacon, 2005). Absorptive capacity, thus, presents a strong argument in consideration of rent collection and the activities which command the existence of rents themselves. Also in line with the opportunity cost argument presented by Hughes (1975: p815) *proposition I*, the absorptive capacity will determine to what extent present exploitation activities are preferred to future and vice versa.

2.1 Mineral Policy Options and absorptive capacity

Mineral policy options encompass more sophisticated tools than ordinary regulatory exploration lease arrangements and the application of royalties and export taxes. Currently,

more sophisticated range of mineral policy options abound to enhance the equitable distribution of gains to parties involved in exploitation activities. The extent of these sophistications should, necessarily, be determined while paying attention to the possible trade-off between complexity and applicability. Applicability should then be considered in light of the country's *economic, social and political preferences, its planning and administrative capacity, and its entrepreneurial and capital resources*. Mineral policy options may address a wide variety of subjects involved with oil exploitation including exploration policies; royalties; export taxes; income taxes; tax exemptions; accelerated depreciation; depletion allowances; resource taxes; production sharing contracts; the renegotiation of contractual agreements; local participation; national ownership of mineral exploiting corporations; infrastructure costs; employment of local staff, wage issues and local multiplier effects; mineral processing; international buffer shocks; resource cartels; and the consumers' interests. One primary relationship suitable to be ascribed primary importance is the relationship between the countries level of development and its mineral policies (Hughes, 1975). This relationship essentially summarizes the optimal levels which subjects relating to mineral exploitation should assume.

Here again, one can see the predominance of the argument of absorptive capacity. In terms of exploration policies, *the ability to put forward highly rewarding schemes would depend to what extent the resource owning country can show knowledge of resources* (Hughes, 1975). This is enabled by the availability of *geographical survey institutions with adequate experience, staff and finances to provide necessary information to stimulate commercial exploration of minerals*. These institutions will also serve as *mechanisms to improve monitoring of transnational institutions involved in the exploitation of petroleum deposits by the efficient collection and collation of general geological data* such companies accumulate. In Nigeria's case, this is done primarily by the Nigerian National Petroleum Corporation (NNPC) and its subsidiaries. On this footing, *resource owning countries would assume a better bargaining position in the determination of exploitation conditions and thus control: the way exploration leases are granted, the extent of local participation, and the sources of finance (including the establishment of a revolving fund replenished from exploitation rents and profits accrued from successful exploration)*. Based on adequate information, the need for incentives – such as subsidies, tax exemptions, accelerated depreciation, and depletion

allowances - prior to and during exploitation activities can be more accurately determined. Moreover, the combination of the availability of the above stated geological survey institutions, a well-*educated workforce* capable with *necessary technical and managerial expertise* with control over the level of local participation will enhance the ability of the resource owning country to *assess cost and pricing conditions applicable to the transnational companies* and, thus, help in an *approximately more accurate determination of applicable extraction rates*. Then, given a level of *infrastructural adequacy*, argument for the location of mineral processing constructs in the resource owning country can be more vigorously put forward. The state of all such factors will determine possibility of the nationalization of mineral exploiting corporations, international buffer shocks and resource cartels with varying results for the interests of parties associated with resource exploitation in terms of degrees to which resource (or monopolistic) rents can be appropriated (Hughes, 1975).

Complementary to the foregoing, Kemp (1992) puts forward situations favourable to the resource owning country during the exploration, production, field development and relinquishment stages. Notably, government imperatives deviate significantly from investor preferences in almost all bargaining stages and bargaining power (dependent on above mentioned factors) as afore mentioned in Hughes (1975) will enhance welfare creating ability of Government. In this direction, Kemp (1992) stipulates certain directives which should guide disposal of petroleum and the security of domestic supply adding that the *local ability to process the extracted mineral deposit* is essential in determining the ease at which investing companies dispose of oil and export hard currency. The local ability to refine such mineral deposits would ensure the security of supply to the domestic market and the avoidance of short-term disruptions. In further considerations of citizen welfare, Kemp (1992) advocates as optimal the pricing of mineral (petroleum) to reflect its full values to the economy – its market value/market price – instead of price Incentives to control prices coming in the form of anti-inflationary measures, social welfare protection and assistance to petroleum dependent industries. Kemp (*Op. cit.*) suggests that rather than domestic pricing, benefits from production are better obtained through tax revenues while poor consumers are best helped through direct financial assistance. Care should also be taken in the substitution of local elements for alternatives. When local contracts can supply a standard value to exploitation activities, then, they are better employed but only up to the point when the costs associated

with enforced preferential treatments for local suppliers in terms of reduced profits and, by implication, taxes do not outweigh the benefits. This is in consideration of the resulting costs in the form of operational difficulties such as the foregone benefits of current operation as training takes a while – apart from the explicit costs of training new labour and the replacement of existing (Hughes, 1975). One peculiar problem which can arise from the importation of foreign labour is the creation of an “Elite” of highly paid mineral workers and, by implication, the segmentation of a working class. This can lead to serious long-term development problems.

3.0 Conclusion and Policy Recommendations

3.1 Introduction

Countries do not have to be resource rich to be competitive, but rather good policies and exemplary leadership are crucial. For instance, Switzerland and Singapore, top 2013 Global competitiveness index, are countries without natural resources. To situate this within Africa, Rwanda is wisely investing in infrastructure project, including environmentally sound ones like a coming geothermal energy plant. Rwanda is one of the fastest growing economies on the continent, despite the fact that it does not have significant mineral deposits and is landlocked; deep in the green heart of Africa, hundreds of miles from the sea.

At the ECA Eighth African Development Forum on Governing and Harnessing Natural Resources for Africa’s Development, during the roundtable on ‘*mineral resources for Africa’s development: anchoring a new vision*’, it was emphasised that Africa should have a vision that dispels the misconceived notion that links Africa with the resource curse.’ In fact, resources are a blessing rather than a curse for Africa. It is possible for Africa to judiciously utilize its natural resources efficiently and with minimal negative environmental impact.

Oil, gas and mineral resources should help to create value and retain economies. So there is a need to establish more productive linkages in the extractive industries so that host countries can capture some of the value created by the industries. Such linkages will positively contribute to building domestic productive capacities through the development of human capital, skills and technology.

Thus, Africa, should further tap into its natural resources wealth to accelerate the pace of growth and ensure the process benefits ordinary Africans. But growth is not enough because, these selected oil-blessed African countries must provide the right conditions for turning natural resources into jobs, optimize their resource revenues through smart taxation and help investors and locals to make the most of linkages. In addition, there is a need for a multi-year policy dialogue on crude oil versus agricultural growth among oil-blessed African countries so as to identify and address common challenges faced by oil-rich African economies, with a view to enabling them to reap the developmental benefits from the exploitation of their natural resource endowment and promote more inclusive growth.

Further, a strategic policy dialogue should be organized in order to identify the conditions under which oil rents will be efficiently collected in order for it to positively transform African economy. According to the 2013 African Economic Outlook, this dialogue should build on the following two key pillars: (i) how to maximise the utilization of the oil revenue collection while ensuring predictability of outcomes and an adequate rate of returns on investments; this includes optimal allocation of the oil revenue and improvement over the allotment over time such that it fosters inclusive socio-economic development, economic diversification and integration of the extractive sectors in the broader economy and global value chains by harnessing sector-specific opportunities to support oil resource-linked development (ii) how to develop, establish and strengthen oil revenue management, institutions and governance, such that, managing revenue volatility should be based on the adoption of transparency and accountability tools.

Taking into account global fluctuations in world (oil) prices and associated supply and demand characteristics driven by short and long-run elasticities and prevailing capacity levels (especially of major producers including the organization of petroleum exporting countries – OPEC – as a cartel), there is importance for fiscal policy choices which consider uncertainty and are thus responsive to fluctuation in world (oil) prices especially in developing countries for which oil revenues contribute significantly to government spending (Adedipe, 2002).

Trade-based policy instruments can be deployed for stimulating energy efficiency in Africa. Through trade policy, African governments can influence the behaviour of households and firms in producing and consuming energy. In the transport sector, for instance, the removal of import tariffs on new, energy efficient cars can stimulate demand for energy-efficient goods

and technologies such as energy-saving light bulbs, energy-efficient appliances, renewable energy equipment and modern biomass energy technologies, African governments can stimulate demand by households and firms for energy-efficient goods and stimulate the displacement of traditional biomass technologies by energy-efficient technologies in industry and agriculture. African governments should also consider promoting the use of energy-efficiency standards and labelling in order to stimulate investment in the supply of energy-efficient goods and services.

African needs to exploit the agriculture – oil nexus. The fact remains that both sectors may be in conflict with each in the sense that they compete for the same resources: land, water and human capital. African oil producing countries should need to learn lessons from Australia, whose resource sector accounts for 6% of its economy, with the leading export, iron ore, valued at USD164 billion and accounting for 52% of Australia's total exports in 2011-2012. Australian agriculture exports account for more than 13% of merchandise exports and had a total export value of USD36 billion in 2012. Although Africa is richly endowed with mineral resources and is the top producer of diamonds, gold and platinum metals, the continent derives 30 – 40 per cent of its GDP and almost 60 per cent of its total export earnings from agriculture. Africa is confronted by a number of challenges such as lack of cross-ministerial collaboration, community participation, low science and technology expertise, revenue transparency and impact assessment capacity – can be overcome, then there could be synergy between them. There is also a dire need for the development of infrastructure, technological innovation and mechanization, employment and income generation. We need to know the forces that shape the African oil-agriculture nexus; and also develop the best practices for multi-sector government communication and coordination, while assessing ways through which mining companies could uptake corporate social responsibilities, and ways of managing conflicts and disputes. Embark on research to explore the potential synergies between two strong economic drivers – agriculture and oil.

3.2 Mapping A Way Out

A United Nations Framework Convention on Climate Change's (UNFCCC) report⁵ on climate change implies that less developed countries (LDC's), though the least in terms of

⁵ UNFCCC (2006), CLIMATE CHANGE: IMPACTS, VULNERABILITIES AND ADAPTATION IN DEVELOPING COUNTRIES, accessed at <http://unfccc.int/resource/docs/publications/impacts.pdf>

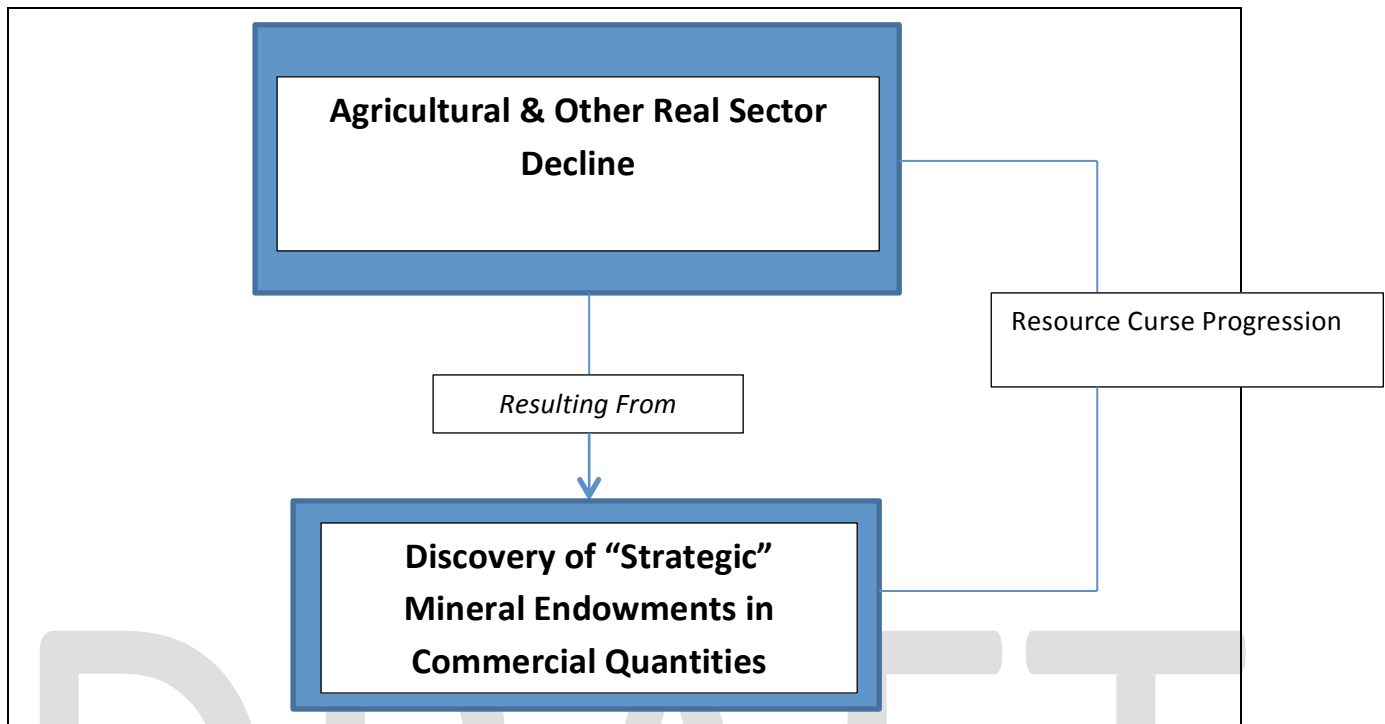
prevailing global Green House Gas (GhG) emissions associated with economic and industrial development, will suffer most from the externalities resulting from elevated concentrations of GhG emissions in the earth's atmosphere. This results from the LDC's relative incapacity to adapt to extreme environmental changes in climatic conditions given technological backwardness and overall poverty in terms of quality of institutions. This poverty in terms of institutional quality can also be linked to the mineral resource abundance of Africa; the abundance of which, owing to the existence of a dual-causality between natural resource wealth and quality of institutions is characterized by the possibility of a negative effect of natural resource wealth on institutions (Bulte, Damania, & Deacon, 2005), here produces a reinforcement of backwardization in institutional, Social and Economic Quality. This section of the paper seeks to recommend a practical construction on how to reverse this backwardization.

So how can Africa take advantage of its resource abundance in light of already existing schemes and programmes aimed at improving the "International economic climate", not without consideration of the already existing institutional imperfections which would ordinarily distort any normal process for ameliorating negative externalities?

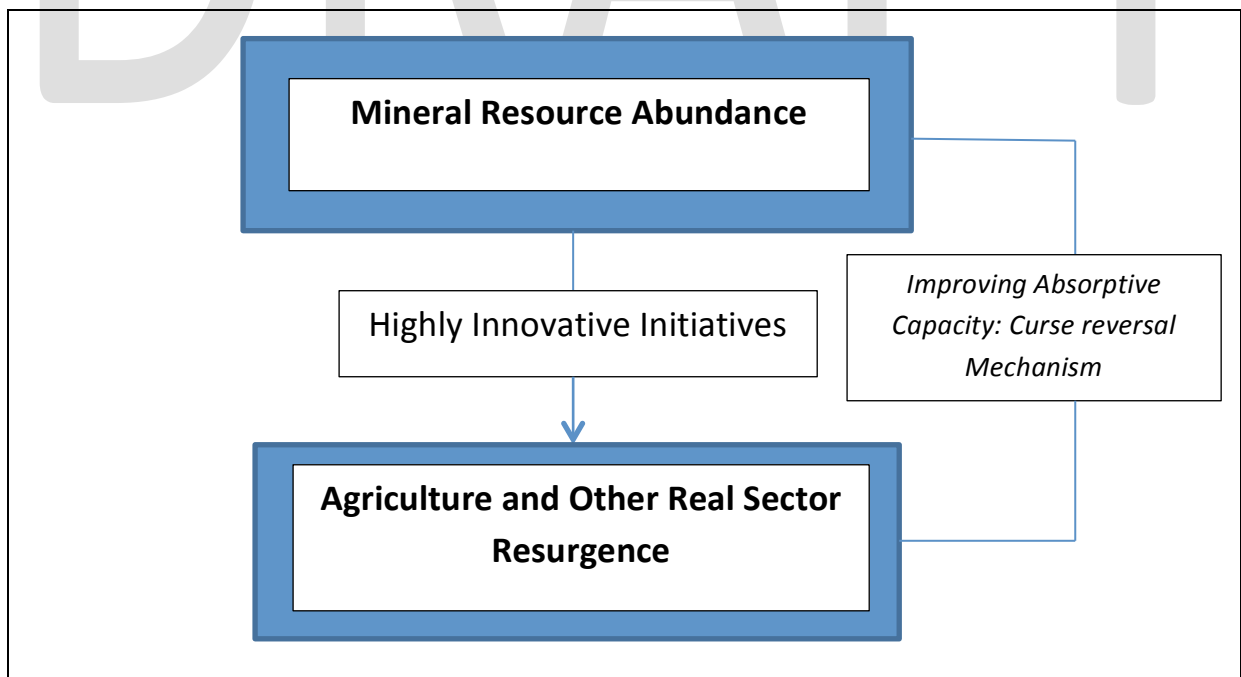
Here we have to take cognizance of the prevailing realities, as seen earlier in this paper:

- Africa's growth is characterized by insufficient poverty reduction, persistent unemployment, increased income inequalities and political tyrannism;
- It is imperative that Africa's mineral resources be considered by African Governments in Fiscal policies and National Development Plans aimed at advancing the welfare of the people (Hughes, 1975);
- Also according to Hughes (1975), the cost of mineral exploitation, in terms of the bidding away skills from other economic activity will be reduced with economic development – in this case, economic development spurred by references to mineral exploitation with the added dimension of the construction of highly innovative schemes. This point/reality, in essence, when properly/adequately addressed can shift the resultant dual-causality inherent in the natural resource wealth/abundance and degraded institutional quality to the positive side. Just how this can be achieved will be outlined in the following paragraphs.

Intuitively, from past paragraphs, we can see the resource curse as working (in Nigeria) accordingly, as displayed in the diagram below:



Breaking the Resource Curse would then take the form simplified in the diagram below:



A rather robust framework that responds to the 4th objective is the need to adopt innovative commercial instruments - Terranexus Solutions Ltd. The first phase involves providing consultancy services to Oil & Gas (Energy) companies in our respective countries (Nigeria and Ghana) with respect to acquisition of the much needed equipment required to develop the Oil & Gas resource sectors in those economies; the second phase sheds greater light on how we intend to shape our world (Terranexus Solutions Ltd). This phase encapsulates the sustainability aspect of the business – it involves providing consultancy services to companies and governments on how to improve their business environments by investing in sustainable development projects already covered under existing international frameworks like the UNFCCC’s Kyoto protocol agreements with stipulated flexibility mechanisms of Clean Development Mechanisms (CDM); Joint Implementation (JI); and, International Emissions Trading (IET). In 2012, only three years remain till 2015 for the evaluation of the achievement of stipulated Millennium Development Goals (MDGs); our goal in the second phase of our business interests is to be key players in the formulation of viable schemes and medium to large scale projects strategic to the achievement of the MDGs, first in Nigeria and Ghana then to the rest of West Africa. We aim to achieve this via thorough (market) research and critical evaluation of all available avenues where both financial and political burdens would be lessened on stakeholders serving as adequate motivation for the inception and completion of suggested schemes/projects.

A crucial component of increased energy efficiency comprises provision of incentives to households and firms so as to switch away from traditional biomass towards more energy-efficient technologies such as kerosene, liquefied petroleum gas, natural gas and biogas. Some oil-producing African countries are in a situation where they export crude oil without any value addition to them, and at the same time import refined oil at much higher prices on international markets. Government measures to stimulate domestic and regional refining of crude oil can contribute towards facilitating the shift from traditional biomass to more energy-efficient technologies in some parts of Africa. Examples of policy instruments include providing accelerated depreciation allowances to oil and gas companies that invest in oil refining capacities, and forging cooperative arrangements with such companies under sustainable corporate social responsibility programmes for them. However, such a switch can increase reliance on fossil fuels use, thereby compromising on environmental sustainability.

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