Introduction

In 1914 the Protectorates of Southern and Northern Nigeria were amalgamated with the Colony (Lagos) by Lord Lugard to form what is now known as Nigeria. There are thirty six (36) federating states alongside the Federal Capital Territory (FCT) that make up the Federal Republic of Nigeria (Fig. 1). A total of 774 local government councils are recognized in the Constitution of the Federal Republic of Nigeria. Since 1991, the Nigerian capital has been the centrally-located city of Abuja; previously, the Nigerian government was headquartered in Lagos. Nigeria is famous for her huge population of about 140 million people – the largest national population on the African continent.

Geopolitically, Nigeria may be further subdivided into a North–South geopolitical dichotomy (Fig. 2) and further, for any political exigency, into North–West–East tripartite subdivisions (Fig. 3), which coincidentally accommodate the three major tribes (ethnic groups) in Nigeria. The Hausas constitute the major ethnic group in the North; the Yorubas in the West and the Ibos in the East. There are about 250 ethnic groups in total in Nigeria such that each of the regions with its major ethnic group carries a significant percentage of minority ethnic groups (Fig. 3). In fact, about 10 ethnic/linguistic groups constitute more than 80% of the population: the other large groups are Tiv, Ibibio, Ijaw, Kanuri, Nupe, Gwari, Igala, Jukun, Idoma, Fulani, Itsekiri, Edo, Urhobo and Ijaw. The 1991 census indicates a population that is 51% male and 49% female. For further administrative reasons and for the purposes of further political exigencies, the country is grouped into six (6) geopolitical zones (Fig. 4). The official language in Nigeria is English. There are 3 main indigenous languages spoken by the 3 predominant ethnic groups. These are Yorubas in the West, Hausa-Fulani in the North and the Igbos in the East.

Petroleum accounts for about 90% of Nigeria’s foreign exchange earnings and makes up about 70% of the nation’s Gross Domestic Product (GDP). Presently, the entire production of petroleum in Nigeria is derived from the Niger Delta region. The South–South geopolitical zone along with Abia, Imo and Ondo States constitute the oil-producing states of Nigeria (Fig. 5). However, several geological studies have indicated that potentials to add to the nation’s current reserves exist in sedimentary basins within several other states of Nigeria (Fig. 6).

Nigeria is situated in the West African sub-region (Fig. 7) and lies between longitudes 3° and 14°E and latitudes 4° and 14°N. It has a landmass of 923,768 sq. km.
It is bordered to the north by the Republics of Niger and Chad and to the west by the Republic of Benin. It shares the eastern borders with the Republic of Cameroon right down to the shores of the Atlantic Ocean forming the southern limits of the Nigerian Territory. About 800 km of coastline confers on the country the potentials of a maritime power. Arable land is in abundance in Nigeria for agricultural, industrial and commercial activities.

Although Nigeria is wholly within the tropics, its climate varies from the tropical at the coast to sub-tropical further inland. There are two marked seasons: The rainy season lasting from April to October and the dry season from November to March. The maximum temperature in the coastal areas of the south can go up to 37°C while the absolute minimum temperature is 10°C. The climate is drier further north where extremes of temperature may range from 40°C to 50°C.

The geology of Nigeria is made up of three major litho-petrological components, namely, the Basement Complex, Younger Granites, and Sedimentary Basins (Explanatory Note 1). The Basement Complex, which is Precambrian in age, is made up of the Migmatite-Gneiss Complex, the Schist Belts and the Older Granites. The Younger Granites comprise several Jurassic magmatic ring complexes centered around Jos and other parts of north-central Nigeria. They are structurally and petrologically distinct from the Older Granites. The Sedimentary Basins, containing...
sediment fill of Cretaceous to Tertiary ages, comprise the Niger Delta, the Anambra Basin, the Lower, Middle and Upper Benue Trough, the Chad Basin, the Sokoto Basin, the Mid-Niger (Bida-Nupe) Basin and the Dahomey Basin.

Abundant mineral deposits occur in all the components of Nigerian geology (Basement, Younger Granites, Sedimentary Basins). Solid mineral deposits of economic significance that include gold, iron ore, cassiterite, columbite, wolframite, pyrochlore, monazite, marble, coal, limestone, clays, barites, lead-zinc, etc, occur in the different geologic segments of Nigeria and indeed each of the 36 federating states and the Federal Capital Territory has a fair share of the solid mineral inventory of the nation. Oil and gas on the other hand occur prolificly in the Niger Delta Basin with opportunities to add to the national reserve asset existing in the other sedimentary basins, namely the Anambra Basin, the Benue Trough, the Chad Basin, the Sokoto Basin, the Bida Basin and the Dahomey Basin.

Despite such a huge mineral resources endowment, it is estimated that about 70% of the nation’s population live below the poverty line, defined as living on less than one dollar per day. Abject poverty, violent clashes, kidnapping, extortion, etc, characterize the oil producing communities in the Niger Delta region. The existing socio-political bureaucratic arrangement gives the political elites, some cartel
managers and probably some terrorism sponsors, the access to manipulate the institutions arising as a result of endemic corruption, all of which aggregate to becloud the efficacy of government policies aimed at tackling the natural “resource curse”. The concept of the “resource curse,” which emerged in the late 1980s alleged that natural resource abundance leads to a host of negative economic, political, and social outcomes. This theory, which directly opposed the prior conventional wisdom that natural resources were good for development, has now been adopted as the new orthodoxy and is espoused by such bodies as the World Bank and International Monetary Fund (IMF).

Comparative cross-country studies on economic performance have shown that an abundance of natural resources, particularly resources such as solid minerals and oil, can lead to undesirable economic consequences, such as slow or negative economic growth, inflation, low savings, high unemployment, export earnings
instability, corruption, poverty, and low levels of human development. The concentration and “lootability” of resources can influence the type of war which takes place. The resource curse is also connected with political regime types, with many cross-country analyses showing that resource rich countries are less likely to be democratic, especially in the cases of oil and mineral wealth.

The literature on resource curse tends to be overly deterministic in attributing economic performance, civil wars, and political regime types to resource endowments alone. This ignores the substantial variation among resource rich countries and the factors which enable some resource abundant countries to overcome the resource curse. Some concrete suggestions in the literature include redistribution of resource wealth to citizens and privatization of natural resource sectors.
Nigeria will still need to adopt some policy modifications for the nation to derive maximum economic benefits from her mineral resources endowment (oil and solid minerals). It may have to allow some State and Local Governments to buy into her joint venture equities with the multinationals in the oil sector while adopting same model for the solid minerals sector.
Introduction

Current Oil Producing States in Nigeria (excluding offshore production beyond the lower limit of the continental shelf)

Potentials in the inland Anambra basin, Bida (Mid-Niger) basin, Chad basin, Sokoto basin, Benue trough, and the Dahomey embayment

**Fig. 6** States in Nigeria that have sedimentary basins with the potentials to add to current national reserve asset
Fig. 7 The location of Nigeria on the political map of Africa
Explanatory Note 1: The three major petro-lithostratigraphical components of the geology of Nigeria

GEOLOGY OF NIGERIA

The Geology of Nigeria is made up of three major geological components:

1. Basement Complex: Pan-African and older (Precambrian) > 600 million years
2. Younger Granites: Jurassic 200 – 145 million years
3. Sedimentary Basins: Cretaceous to Recent ≤ 145 million years