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The Cartographic Legacy of Colonial Administration in Nigeria

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ABSTRACT

British colonial rule in Nigeria lasted for about one century – from the mid 19th century to the mid 20th century. During their reign the colonial administrators made some frantic cartographic endeavours that remarkably transformed the face of mapping in the country. The cartographic legacy left behind by the colonial masters is rather indelible.

This paper looks at the development of mapping in Nigeria during the colonial period. The nature and scope of mapping in the country during the time under review are discussed. Equally discussed are the contributions of colonial mapping to the economic development of the country. The paper also x-rays the impact of the colonial cartographic legacy on the practice of mapping in contemporary Nigeria. More so, the paper highlights some of the shortcomings of the pattern of mapping during the colonial days in the country. Importantly, the paper pin-points some of the great lessons of colonial mapping in Nigeria which could be explored to enhance the culture of mapping and map use in the country for sustainable development.

INTRODUCTION

The scramble for Africa in the 19th century prompted the convening of the 1884-1885 Berlin Conference on the geo-political balkanisation of Africa amongst the European imperial powers. Following that exercise Nigeria, alongside some other African countries, fell under the direct control of Great Britain. Approximately between 1861 and 1960 British imperial rule held sway in Nigeria. As at the time Britain gained theoretical control over large tracts of territory in Africa, the continent was almost completely devoid of mapping (Collier, 2006). The British administrators realised right from the onset that there was no way they could effectively administer the newly acquired colonies without appropriate maps. Consequently, throughout the one hundred years or so of their stranglehold on Nigeria, the colonial rulers at some time or the other initiated and executed various surveying and mapping projects in the country.

In the main, colonial mapping efforts in Nigeria were primarily aimed at meeting the parochial interests of the imperial powers rather the needs of the colonies. Hence, the mapping activities were conducted in an ad hoc manner as dictated by the objectives of the then British home government. Nonetheless, the cartographic endeavours of the colonial administrators in Nigeria left some indelible legacy. This paper, therefore, examines among other things, the pattern, products, as well as the pros and cons of colonial cartography in the country. The paper equally contains some healthy propositions on how to maximize the negative effects of colonial

cartography and also counteract its negative effects, in order to boost cartographic development in the country.

THE NATURE AND SCOPE OF COLONIAL CARTOGRAPHY

British colonial cartography in Nigeria had some distinguishable characteristics as well as scope. This section, therefore, addresses such issues as the underlying motives behind the mapping of Nigeria by the colonial administrators, the different periods of colonial cartography, the various cartographic activities undertaken and the cartographic products generated. It must be noted here *ab initio*, though, that colonial cartography in the country was neither so systematic nor comprehensive; it was somewhat ad hoc and highly selective, having been done to meet particular interests of the colonial imperialists.

Motives of Colonial Mapping

Certain motives propelled mapping in Nigeria during the colonial days. In the main, mapping of the territory was pursuant to the overall goal for embarking on imperial rule in the country namely, EXPLOITATION. To this end, the Colonial Survey Committee (CSC) was set up. Right from inception the CSC left no one in doubt that it was “an organisation prepared to go to great lengths to achieve its aim: mapping in the Imperial interest” (Collier, 2006). More so, as Austen (URL) has noted, “European cartography is a complement of other technologies of political power: literate bureaucratic agencies (these existed in the Sokoto Caliphate and other African Islamic states, but in limited form), the need for regular tax collection and even, at times, conscription of populations for military or public works service.”

The notable underlying motives behind colonial mapping of Nigeria could be summarized as follows:

- (i) Military expeditions in defence of the colonies.
- (ii) Administrative convenience.
- (iii) Revenue generation through taxation.
- (iv) Exploitation of natural resources (solid minerals, cash crops, and other raw materials) for onwards shipment to the British homeland.

Periods of colonial mapping

About four loosely defined periods of British colonial mapping in Nigeria have been suggested (see Balogun, 1989). The periods are:

- (i) The period of colonial expansion, political consolidation and mapping of political units (1861-1910). During this period, which marked the first fifty years of British rule in Nigeria, the Geographical Section, General Staff (GSGS) was preoccupied by the compilation of general maps of Nigeria showing locations of settlements and the domains of native rulers.
- (ii) The period of mineral exploration and revenue survey (1910-1926). This period was characterised by the mapping of areas considered to have economic potential. Massive topographical surveys as well as revenue survey were conducted for the purpose of tax derivation and mineral exploitation. Hence this period witnessed the production of many topographical and geological maps for mineral search, leases and exploitation. The maps produced at this period, however, lacked geodetic foundation.

- (iii) The period of systematic triangulation (1926-1939). A trigonometric section was established in the Nigeria Survey Department in 1924 to undertake the systematic triangulation of the country. The system of triangulation, however, did not commence until 1926. The exercise was primarily aimed at providing adequate geodetic controls for the production of topographical and other base maps of the country. Nonetheless, the topographical maps produced at this time were based on hurried triangulation and were fragmentary having been designed to cover areas considered to possess high economic potential.
- (iv) The period of aerial survey and topographical mapping (1946-1960). This period marked the commencement of the systematic topographical mapping of Nigeria using aerial surveys. This was made possible by a number of favourable factors such as the establishment of the Directorate of Colonial Surveys to carry out mapping in the colonies, the lessons of the two World Wars on the importance of maps, the appreciation of the advantages of the aerial survey technique, and the arrival of the first Royal Airforce aircraft to start aerial photography of the country in 1946. Shortly before independence the Directorate of Colonial Surveys was changed to Directorate of Overseas Survey in 1958 and charged with the mandate to still continue aerial photographing and topographical mapping of Nigeria in form of technical assistance.

Cartographic Products

The variety of cartographic activities undertaken by the colonial rulers at various times also yielded some tangible products. Some of the notable surveying and mapping activities and the maps resulting from them are highlighted below.

Triangulation

The systematic triangulation of the country effectively commenced in 1926. The initial objectives for undertaking the triangulation of the country included topographical surveys and mapping, survey of railways as well as fixation of railway points, military expeditions, and geological surveys and mapping.

Up to 1930 a primary order triangulation could not be achieved in the country owing to the insufficient accuracy and precision of the triangulation results. Consequently, there was a felt need to re-arrange the triangulation. Between 1931 and 1938 reconnaissance, beaconing and observations were vigorously pursued simultaneously. Triangulation of the country, however, suffered a setback during the period of the Second World War (1939 to 1945). Triangulation work commenced again shortly after the war, but with less gusto.

Topographical mapping

The production of topographical maps was made a priority project by the colonial administrators. This was understandably so because the maps served as basis for identifying areas with “economic potential”, for the purpose of taxation. At various times, topographical surveys were conducted and topographical maps at different scales were published on the basis of data acquired through the surveys. As can be seen in Table 1, however, apart from the 1:500,000 (Old series) maps, none of the other topographical mapping projects initiated by the colonial administrators achieved a complete coverage of the entire country. Besides, some of the topographical maps were only planimetric, they were not contoured.

Table 1: Topographical maps produced in Nigeria during the colonial era

Mapping Project	Year Started	No. of sheets covering	No. of sheets published	% coverage
1:125,000/ 1:100,000	1910/ 1938	329	270 (93 planimetric)	82.1
1:50,000	1948	1,372	1,122 (300 planimetric)	81.8
1:500,000 (Old series)	1952	16	16	100
1:250,000	1957	100	70 (24 planimetric)	70
1:500,000 (New series)	1960	33	10	30.3

Source: Extracted from Balogun (2003, p17)

Geological mapping

Geological survey and mapping in Nigeria received more than a passing attention in the colonial era. Such maps were badly needed for assigning mining rights and revenue generation. As shown in Table 2, different scales of geological and solid minerals map of Nigeria were produced. On the nature of colonial geological and solid minerals mapping, Uluocha and Odim (2005) have observed *inter alia*:

“A large number of Nigeria’s geological and solid minerals maps was produced during the colonial period, ... Nonetheless, colonial geological survey and mapping in Nigeria was highly selective. Attention then seemed to have been almost entirely concentrated on three areas namely (i) places with mineral occurrences investigated in detail, (ii) places with mineral occurrences partially investigated, and (iii) places with mineral occurrences found in traces. Consequently, the geological maps produced during the colonial era were either on a large or medium scale; each map sheet thus covering only a part of the country. Some of the maps, e.g. the Nigeria 1:100,000 and 1:250,000 geological maps, were produced in series, with each series running into several sheets covering different parts of the country. Attention was not really paid to the production of small-scale geological or mineral maps covering the entire country during the colonial period. The discriminatory geological mapping posture of the colonialists was rather indicative of the economic desire underlying their decision to embark on such mapping activities. The need to generate revenue detected which areas would be mapped. Hence it was mostly those areas known to have real or potential occurrences of some solid mineral deposits that were geologically mapped.”

Administrative boundary delineation and mapping

During the colonial era attempts were made to delineate and map administrative boundaries between communities. In fact, a large number of the boundary lines in the country today have a colonial origin. The processes that yielded such boundaries, however, were rather ill-conceived and fraught with many inadequacies. As a direct consequence, most of the boundaries fixed and mapped by the colonialists were nebulous and inexact. This was not totally unexpected, though, given the fact that the colonial administrators who themselves undertook the boundary delimitation exercise had limited knowledge of the culture and politics of the local people. The inadequate knowledge of the colonial administrators of the race and tribal relationships amongst various Nigerian communities meant that they arbitrarily created and mapped the boundaries and imposed

Table 2: Nigeria's Geological and Solid Minerals Maps produced during the Colonial Era

Map scale	Title / Edition date
1:12,500	Geological map of coalfield at Enugu (1924) Geological map of the Enugu area (1953)
1:62,500	Geological map of Bauchi Town and surrounding District (1926) Geological map of the Hoss-Gindi Akwati area, plateau tinfield (1945)
1:125,000	Geological map of the Northern tinfields of Bauchi Province: Northern section (1923) Geological map of the Northern tinfields of Bauchi Province: Southern and Central sections (1923) Geological map of the Nassarawa tinfield (1924) Geological map of the Monguna, Kaleri, Baron and Sura Districts of Bauchi Province and the Mama District of Nassarawa Province (1926) Geological map of the tinfields of Zaria and Kano Provinces (1927) Geological map of parts of Owerri and Onitsha Provinces (1928) Geological survey of Nigeria, sheet North B 31/E 2, Ilesha (1952)
1:250,000	Geological map of the tinfields of Nigeria (1927) Geological map of the Southern part of the Enugu coalfield (1952) Geological map of the Eastern Railway between Port Harcourt and Enugu (1952) Nigeria, 1:250,000 Geological Series, sheet 62 Lokoja (1957) Nigeria, 1:250,000 Geological Series, sheet 63 Ankpa (1957) Nigeria, 1:250,000 Geological Series, sheet 64 Markurdi (1957) Nigeria, 1:250,000 Geological Series, sheet 70 Benin City (1957) Nigeria, 1:250,000 Geological Series, sheet 71 Onitsha (1957) Nigeria, 1:250,000 Geological Series, sheet 72 Enugu (1957) Nigeria, 1:250,000 Geological Series, sheet 73 Ogoja (1957) Nigeria, 1:250,000 Geological Series, sheet 79 Umuahia (1957) Nigeria, 1:250,000 Geological Series, sheet 80 Oban (1957) Nigeria, 1:250,000 Geological Series, sheet 85 Calabar (1957)
1:500,000	Geological map of Sokoto Province (1948) Geological map of part of South-Eastern Nigeria (1959)

Source: Extracted from Uluocha and Odim (2005, pp19-21).

them on the people. Obi (1999) citing the work of Prescott (1971) notes that "Boundaries were ... traced by cartographers in bold lines on sketch maps to indicate the limit of new administrative jurisdiction before indigenous inhabitants were contacted and pacified (if necessary) to accept this delimitation."

The untidiness that generally characterized boundary delineation in the country during the colonial days could be exemplified by what transpired in 1894 during the demarcation of the boundary between the territory of the Royal Niger Company (later to be known in 1900 as the Protectorate of Northern Nigeria) and the Lagos Colony and Protectorate and the Oil Rivers Protectorate (which later merged in 1900 to form the Southern Nigeria Protectorate). As noted by Falola (2005):

“The first formal attempt to transfer on to the ground the vague boundary descriptions carried [out] by the imperial instruments setting up these administrations was made in 1894 between the Lagos government and the [Royal] Niger Company, with F.D. Lugard representing the Royal Niger Company and the Emir of Ilorin, while Captain Bower represented the Lagos government. By that date neither the Niger Company nor the Lagos Government knew much about this region which meant that the two boundary commissioners did a rough and ready demarcation which appeared to them to be in accord, more or less, with the southern limits of the power of the Emir of Ilorin. Of ethnological and other factors, the two [white] men apparently took little account”.

Township mapping

The development of cartography in Nigeria during the colonial period was also partly characterised by the production of regional and township maps from field survey data. To handle the compilation of township maps and plans the Cadastral Survey Section was set up in the Nigeria Survey Department. Before 1930 township maps were produced at varying scales. After 1930, however, two scales, 1:1,200 and 1:2,400, were mostly adopted for large towns and small towns respectively (Balogun, 2003). The introduction of aerial survey for mapping in Nigeria shortly after the Second World War (WWII) further altered the scales at which towns were mapped. For instance, various scales such as 1:1,056, 1:1,200, 1:2,400, 1:1,500, 1:3,000, 1:3,600, 1:4,800, 1:5,000, 1:5,400, 1:5,500 and 1:6,250 (for less urbanised towns) were used in producing township maps and plans after the WWII. Many urban centres in Nigeria like Enugu, Kaduna, Aba, Jos, Makurdi and Kafanchan were founded by the British colonial administration. Such settlements have well laid out internal physical structure – obviously the product of conscious planning. The planning, development and administration of the colonial towns were also done using appropriate maps. Thus, township mapping received more than a passing attention during the colonial era. In line with the general ad hoc mapping approach of the colonial powers, however, the mapping of colonial towns in the country was accorded more consideration over and above the mapping of pre-colonial or traditional towns.

Soil map

Some attempt was made by the colonial administrators to produce soil maps of the country. In 1951, following the conduct of a soil survey of the country, a soil map of Nigeria was published at a scale of 1:500,000. This map, though, was not quite comprehensive.

Atlas map

The colonialists equally tinkered with the idea of producing a national atlas of Nigeria. Hence, in the 1930s the then Nigeria Survey Department started work on an atlas map series of the country.

Gazetteer of Place Names

Another important cartographic legacy left behind by the colonial administration in Nigeria is the Gazetteer of Place Names published in 1949 and containing about 17,000 place names (Balogun, 1985). This first gazetteer served as the basis for subsequent place name gazetteers published in the country.

ORGANISATIONAL STRUCTURE

Throughout its duration, the British administration in Nigeria established various agencies at various times to accomplish various aspects of its business of surveying and mapping the country. When the British imperialism commenced the Geographical Section, General Staff (GSGS) was,

for strategic and military intelligence reasons, exclusively saddled with the responsibility of executing official mapping of the country.

In 1905 the Colonial Survey Committee (CSC), which was based in Great Britain, was set up to consider various issues related to surveying and mapping in British colonies and advise the secretary of State for the Colonies in matters affecting the subject and geological works. As noted by Collier (2006), however, "What is clear from the files of the Colonial Survey Committee, is that it was not set up just to act as advisors to the Colonial Office. From time to time, the minutes and correspondence of the Committee make it quite clear that the main role of the Committee is to ensure that colonial survey departments produced maps of value to the military authorities, in the Imperial interest [as opposed to the interest of the colonies]". In 1935 the function of the CSC was enlarged to cover meteorology, geophysics and astronomy; consequently, its name was changed to Colonial Survey and Geophysical Committee (CSGC).

In line with the British Imperial powers' decision that mapping of the colonies should be delegated to the colonies themselves, survey departments were established in various colonies in the country. The Northern Nigeria had a Survey Department. A Survey and Lands Department was set up in Lagos. The survey work of this Department had been limited to cadastral surveys on or around Lagos Island, theodolite traverses to create a control framework, the determination of the longitude and latitude of the observatory in Lagos and a boundary survey with Dahomey. In Southern Nigeria there was also a Survey Department, which was formed in 1901. Sequel to the merger of Lagos and Southern Nigeria the Survey Department of Southern Nigeria was created in 1906 (Collier, 2006).

Following the amalgamation of the Northern and Southern Protectorates in 1914, all existing disparate survey departments in the country were merged to form the Nigeria Survey Department (NSD). There was, however, a regional surveys department in each of the then three regions namely Eastern, Northern and Western. The responsibilities of the regional surveys departments included the extension of the national triangulation networks and conducting of cadastral surveys. The NSD was later reorganised and it came to be known as the Central Survey Headquarter (CSH). In 1955 the CSH had its name changed to the Federal Surveys Department in line with the new federal government structure adopted by Nigeria.

The Geological Survey of Nigeria was set up in 1919 as a division of the then Ministry of Mines and Power (Obi, 1995). It was charged with the onerous task of producing all the official geological maps of the country.

After World War II the Directorate of Colonial Surveys (DCS) was established (in 1946) to conduct topographical survey and mapping in all British colonies. The name of the DCS was later changed in 1958 to the Directorate of Overseas Surveys (DOS). The DOS, under the Mutual Technical Assistance Scheme, continued mapping in Nigeria after the country's political independence in 1960 (Balogun, 1985).

The Ordnance Survey (OS) of Great Britain played some role in the mapping of Nigeria during the colonial epoch. Its role, however, was largely indirect. Following the invitation of the government of Lagos and Colony in 1891, the OS undertook the survey and printing of land ownership plans of the territory. The OS also offered some technical advice on mapping to the Colonial Survey and Geophysical Committee. It equally printed maps for local survey departments.

EFFECTS OF COLONIAL CARTOGRAPHY

That colonization had both healthy and harmful effects on the development of cartography in Nigeria is indisputable. This section, therefore, presents a bird's-eye view of the apparent gains

and pains of colonial cartography in Nigeria. The link between colonial cartography and contemporary cartography in the country is given a special consideration.

The gains of colonial cartography

The British imperial rule introduced the culture of formal mapping in Nigeria. The base maps produced then constitute a large portion of the foundation on which mapping (and even national development) in Nigeria today is generally based. For instance, the 1:50,000 topographical maps produced between 1948 and 1960 still remain the most widely used maps in the country today. The cartographic endeavours of the colonial administration also helped to establish some sort of mapping consciousness and tradition in the country. People began to understand and appreciate more the role of maps in the development of society. Likewise, more maps of the country covering diverse subject matters were published than ever before.

To some extent, colonial mapping served as an instrument for engendering physical and socio-economic development in the country. The colonial maps helped to open up various hitherto obscure territories. Several of the settlements mapped during the colonial times are also among the most developed parts of the country today. The geological maps gave useful clues on areas with readily accessible and exploitable mineral resources. In areas where mining operations were initiated by the colonial government, some infrastructural facilities and social amenities such as roads, hospitals and dispensaries, schools, post and telecommunication facilities, etc. were provided for the people.

Another notable contribution of colonial cartography in Nigeria is the compilation and, hence, preservation, of local place names. No doubt, long before the advent of colonial rule in the country, geographical place names existed. Such names, however, were not documented in written form, since the local people were more or less non-literate. During the colonial era the place names were copiously used in the production of topographical, administrative, geological, township and some other general maps. Some of the place names used on colonial maps are still being used today. As a matter of fact, the Federal Surveys Department since 1965 has compiled about three Gazetteers of Place Names; most of the entries in these documents were derived from the colonial maps as well as the first Gazetteer of Place Names produced in 1949. Apart from compiling some of the then extant place names, the colonial administrators equally devised names for some newly established settlements. Interestingly, many of the place names still in use in the country today including "NIGERIA" the name of the country itself, were originated by the British colonial administrators.

Colonial rule in Nigeria could be credited with ushering in the process of formal cartographic education and manpower development in Nigeria. In 1908 the Survey School (now located in Oyo Town) was founded to offer basic training programmes in surveying and map making. For a greater part of the colonial period, however, Nigerian cartographers were mostly informally trained in the Directorate of Overseas Surveys (DOS) and the Ordinance Survey. It was not until 1936 that an organised training of Cartographic Technicians at the Survey Office, Lagos, commenced with six candidates (Onyeka, 1995, p10). Apart from cartographic manpower development, cartography in Nigeria equally derived some technological benefits from the mapping programmes of the colonial administration. Some relatively more advanced mapping equipment and techniques were introduced. This novel development somewhat helped to institutionalize and professionalize map-making in the country.

The Pains of Colonial Cartography

The manner in which the business of mapping was conducted by the colonial administrators in Nigeria (as in some other African countries also), created and left behind some problems in the

country. This was largely due to some notable shortcomings inherent in the strategy adopted in the planning and execution of surveying and mapping projects. Within the African context, the pains of ill-conceived and poorly executed mapping programmes are still being felt in different parts of the continent. It has been argued, for instance, that “colonial ‘mapping’ ultimately created national identities among the multiple ethnic groups which found themselves within colonial boundaries (or had been more loosely incorporated into pre-colonial kingdoms and empires)... Colonial maps did impose some serious disadvantages upon Africa, although perhaps less due to the specific boundaries they established than to the way they imposed outwardly oriented development patterns upon the continent... The ongoing crises in such states as Angola, the Congo, Liberia, Sierra Leone and Somalia suggest that colonial maps have not laid out a stable basis for nationhood in Africa” (Austen, URL).

Surveying and mapping activities during the colonial era were tailored towards meeting the perceived needs of the imperial powers rather than the needs of the colonies. The interest of the imperialists was not really to develop the mapping profession in Nigeria *per se*, but to use mapping as a veritable means of actualizing their ulterior motive to exploit the colonies. Hence, when, for instance, Ernest Percival Cotton, the then liberal colonial Director of Surveys in the Survey Department of Southern Nigeria saw the training of native surveyors as one of his major tasks, this became the source of a serious conflict between him and the CSC, who considered Cotton’s action as a move contrary to the intents of the British Imperial power. Since Cotton did not obviously perform in the way expected by the CSC or the Colonial Office, he was dismissed in 1909 and replaced by Guggisberg, a Royal Engineer surveyor, who had previously been the Director of Surveys in the Gold Coast (Collier, 2006).

Colonial mapping of Nigeria was largely done on an ad hoc basis rather than adopting a systematic approach. Perhaps this was owing to Britain’s lack of enough resources to map the colonies as well as their selective strategy to concentrate mapping effort mostly on those regions perceived to be more “economically viable”. The somewhat arbitrary and patchy approach to mapping adopted by the colonial administration had left many parts of the country unmapped.

While the attempt of the colonialists to compile the place names of the country is quite commendable, it is important, however, to pin-point one serious flaw inherent in that effort. In the compilation process several of the place-names were corrupted. As noted earlier, the indigenous people were virtually non-literate; hence they did not have the written form of their place-names as at the time the early European explorers or colonial administrators arrived their territory. But the onus was theirs to pronounce the place names to the white foreigners, whose duty in turn it was to pen down the names. The foreign compilers encoded the sound of each name as they perceived it. Consequently, several of the local geographical place-names on the colonial maps were and, unfortunately, are still being, wrongly spelt. The names were simply anglicised! For instance, the name “Zungeru” is a corrupted form of the word “Dunguru” (a musical instrument); similarly “Awka” is the corrupted version of “Oka”.... There is an obvious need to decolonize some Nigerian place-names. Unlike the original local names, the anglicised versions of the names make little or no linguistic or literal meaning to the indigenous people.

Colonial mapping in Nigeria concentrated on township mapping at the expense of rural areas. Up until now, this imbalance has created a notable disparity between urban and rural mapping in the country; the rural areas still remain largely unmapped.

Many boundary lines cartographically established by the colonial administration were arbitrarily or vaguely defined and fixed. For instance, neither the boundary between the Northern and Southern Protectorates nor the one between the Western Region and the Eastern Region was the result of a deliberate, conscientious and detailed process of culture-mapping of Nigeria by the colonial government (Falola, 2005, p458). In delimiting various sections of the country by the imperialists, race and ethnic propinquity were jettisoned in preference to administrative convenience. The

colonial masters simply created boundaries that suited their administrative systems, with most of the boundaries cutting across ethnic groups, culture, and families (Obi, 1999). Hence the origin of most boundary problems in Nigeria today could be traced to the ill-defined, inaccurate and inadequate boundary delimitations by the colonial administrators.

The cartographic boundary demarcation blunders committed by the imperialists could have quite telling negative impacts. For instance, Kent (2004) notes that, "Many of the colonial boundaries divided people of the same ethnic group, and brought together others who had no racial, linguistic, or cultural ties. It frequently proved difficult to create a national identity and a civic consciousness based on loyalty to the state or nation." Similarly, French (2004) has observed that:

"From the earliest days of African independence, this continent's leaders have repeatedly had to wrestle with the legacy of the arbitrarily drawn borders established and frozen in place by Europe's colonial powers....

"The impact of these borders was felt to varying degrees from one country to another throughout Africa. ...

"Even more troublesome are cases like Nigeria, where European boundaries forced starkly different, rival cultures, each with long-standing political traditions of their own, to cohabit within the confines of a single state. When Nigeria won its independence in 1960, these rivalries remained.

"Regional antagonisms have bedeviled Nigeria from the earliest days of independence from Britain, and in the late 1960s led to one of the continent's most destructive civil wars."

The structure of mapping in Nigeria during the period of colonization did not so much encourage the development of local cartographic manpower, culture and equipment. Almost throughout the entire time of colonial administration in the country, most maps of Nigeria were compiled in the country but were designed for cartographic production in Great Britain by the Geographical Section of the General Staff (War Office), W. A. K. Johnson Limited of Edinburgh, the Ordnance surveys and the Directorate of Colonial (later Overseas) Surveys at various times (Adalemo and Balogun, 1989).

It is doubtful if the colonial administration in the country had any official national policy aimed at consciously, systematically and holistically developing cartography and mapping in Nigeria. No available records clearly indicate or even suggest the existence of such a policy. This is not surprising, though, given the fact that, generally speaking, the imperialists did not just come to develop the country but rather to take advantage of it. This seemed to be the general posture of the British government in all the British colonies. For instance, with particular reference to South Africa, which was under British colonial rule, Collier (2006) cites a 1906 report of the Colonial Survey Committee which notes *inter alia*, "the Colonial Survey Committee is not concerned with the surveys of the South African Colonies, except in so far as Imperial interests are involved". Maps were seen by the British colonial administrators as inevitable and potent tools for accomplishing effective control of their colonies. If the colonialists had not found mapping a key factor to the attainment of their ultimate goal to exploit the resources of Nigeria, they would not have accorded as much attention as they did to mapping and allied matters in the country.

Influence of Colonial Cartography on Contemporary Cartography

Obviously there is a connection between colonial mapping and post-colonial mapping in Nigeria and elsewhere. For instance, commenting generally on past and present trend in mapping on the African continent, Austen (URL) notes that, for the present and perhaps for the immediate foreseeable "global" future, African cartography may be telling the same story as it did a half-

century ago: that the modern "mapping" of this region is still linked to its asymmetrical relationships with outsiders.

Post-colonial mapping in Nigeria has been much predicated on the mapping legacy left behind by the colonial administrators. Hence, the failure of the imperial powers to adopt a uniform approach to mapping in the colonies has equally meant that official mapping in Nigeria even today proceeds in a piecemeal manner. Official mapping projects are mostly concentrated on those areas considered to be "important", from economic, political and administrative perspectives. Hence, urban centres are mapped at the near total neglect of rural areas. Similarly, places adjudged to have "high" economic potential receive more mapping attention than other places.

During the colonial period map making in Nigeria was an exercise which often necessarily involved a team of professionals comprising surveyors, cartographers and, after WW II, photogrammetrists. A look at the trend in training local professionals in these fields reveals a highly skewed pattern which mostly favoured the surveyors. The reason for this observed trend, though, is not far-fetched. The land survey and, after WW II, aerial survey, of the country were of course done entirely in Nigeria while most of the cartographic and photogrammetric work were done in Great Britain. As a consequence, there was a felt need for trained local surveyors who were more familiar with the local terrain and who would also do the initial fieldwork to take physical measurements for geometric base data acquisition. In other words, there was more local need for surveyors whose activities were carried out within the country than cartographers and photogrammetrists, whose jobs were mostly done in Britain.

The highly lopsided colonial pattern of training mapping professionals, which was in favour of surveyors at the expense of cartographers and photogrammetrists, still persists in the country till date; in fact the situation is even worsening. As an instance, the Nigerian Government, through the National Board for Technical Education (NBTE), is presently making moves to abrogate cartography and photogrammetry programmes offered at the Kaduna Polytechnic, the only institution in the country that trains lower and middle levels cartographic and photogrammetric manpower. This is not only unfortunate but also quite ironical in view of the fact that, currently Nigeria is struggling to grapple with the dearth of qualified cartographers and photogrammetrists. If the increasing shortage of cartographic manpower presently experienced in Nigeria is not urgently reversed, the country's socio-economic development process will be put in serious jeopardy.

SOME LESSONS OF COLONIAL CARTOGRAPHY

Looking at the trend of events in relation to mapping in Nigeria during the colonial period, certain lessons readily unfolds. One of such lessons is that maps and mapping is the key to effective administration and development of any territory. The need, therefore, for a country to mainstream mapping into her national development goals and programmes cannot be overemphasised. However, for a nation or indeed any other territory to establish a virile, enduring and flourishing mapping tradition, a systematic, holistic and consistent approach is required. Mapping, by its nature, is a metier that often demands the involvement of many professionals: surveyors, cartographers, photogrammetrists, geographers, remote sensing experts, GIS experts, and so on. A nation that is serious to achieve effective and meaningful mapping of its territory must as a matter of necessity, accord the training and development of manpower in all the allied fields a top priority attention. No particular field(s) of mapping should be developed at the expense of some others. Similarly, to attain greatness a nation must be comprehensively mapped. The natural, economic, social, cultural, political and other facets of the nation's existence must be methodically mapped. More so, mapping for sustainable development should be a continuous endeavour and not just a one-off exercise.

Mapping of any territory on an ad hoc basis has the propensity of inducing lopsidedness in the development of that territory. Areas that are better mapped experience more rapid, orderly and advanced development than areas that are poorly mapped. Nations should, therefore, adopt an integrated approach in formulating and executing their national mapping programmes.

Several of the boundaries created in different parts of Nigeria during the colonial period were arbitrarily done since they were intended to be mere 'working boundaries', for administrative convenience. Unfortunately, however, most of such vaguely defined boundaries still subsist today and have become sources of incessant internecine conflicts. Delineation, demarcation and mapping of administrative or geo-political boundaries of regions especially places with multiethnic compositions such as Nigeria, should be done on the basis of the ethnic and geo-cultural structure rather than for administrative convenience. This will help to stave off or minimize sporadic blood-letting inter-boundary skirmishes often occasioned by ill-defined borderlines.

CONCLUSION

The surveying and mapping activities of the colonial administration in Nigeria obviously had some benefits as well as detriments to the development of Nigerian cartography in particular and the economy in general. Nigeria's contact with British cartography during the colonial era marked the opening of new vistas in the annals of cartographic development in the country. Without doubt, colonial cartography in Nigeria did bring some economic, technological and educational profits to the country. On the other hand, however, cartography became a ready tool in the hands of the imperialists for exploiting the country to the disadvantage of the local people. Moreover, the monstrous border problems created by colonial cartography, which ignored ethnic and tribal relationships, have remained an albatross to the development of the country. Nevertheless, building upon the positive side while simultaneously neutralizing the negative consequences, of colonial cartography in Nigeria, will greatly facilitate the repositioning of contemporary cartography in the country, for national development.

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BIOGRAPHY

Dr Nnabugwu Oscar Uluocha is a Senior Lecturer in the Department of Geography, University of Lagos, Lagos, Nigeria. Currently he is the Sub-Dean of the Faculty of the Social Sciences of the same University. He holds a PhD degree in Cartography and GIS. For over ten years he has been researching on and teaching courses in cartography, GIS, remote sensing and environmental management at both the undergraduate and postgraduate levels. He is also a cartographic consultant. He has authored and edited several articles and books, most of which border on applied cartography and GIS. A 2003 Travel Award winner of the International Cartographic Association (ICA), Dr Uluocha is deeply committed to the promotion of the development of cartography, particularly in Nigeria. He is the immediate past Secretary-General of the Nigerian Cartographic Association (NCA); he is currently the 1st National Vice-President of the same Association.