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Analysis of the Prospects of Using Maps for Planning and Development by Members of the Public and Public Organizations in Akwa Ibom State, Nigeria

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Abstract:

The aim of this study was to examine the prospects of using maps by members of the public and public organizations to guide their day to day activities in Akwa Ibom State of Nigeria. Purposive sampling technique was used to identify public organizations in the sampled population. Based on personal interviews of chief executives, directors, permanent secretaries of the public organizations, the study/paper identifies the lack of a map reading culture as being responsible for the deplorable state of mapping in contemporary Akwa Ibom State and indeed Nigeria. To achieve sustainable development therefore, the paper recommends that efforts should be directed at making the public and public organizations more map minded by giving impetus to geography education at the secondary and tertiary levels.

Keywords: Cartography, maps, geography education, demand and supply, sustainable development.

1. Introduction

A map is a flat piece of paper on which is printed a representation of part of the earth's surface at a reduced scaled. There are many types of maps, namely: topographical map, climatic map, cadastral map, landaus map, vegetation map, soil map, tourist map, road map to mention just a few (Robinson et al. 1995, Kraak and Ormeling 2002, Slocum 2003). According to Adalemo (1982), depending on the purpose at hand, maps are available for that purpose. The need for maps is manifold. Maps are required to enable individuals and organizations to function for defense purposes, communication, education, land revenue purposes and for the development of the country both in its natural resources and for all other purposes. Robinson (1995) asserts that a map of a small region depicting landforms, drainage, vegetation, settlement patterns, roads geology or a host of other detailed distributions, communicates the relationships necessary to plan and carry out many types of development projects. Building of road a house, a flood control system or almost any other construction requires prior mapping. Furthermore, less detailed maps of larger areas showing flood plain hazards, soil erosion, land use, population character, climates, income etc are indispensable to understanding the problems and potentialities of an area. According to Adalemo (1982) maps are needed to enable us familiarizes ourselves with the terrain on which development takes place. They are a very varsatile information storage device and consequently a fundamental research tool. By comparing maps of an area for different time periods we can observe without great difficulties the charges that have taken place as well as plan for further charges in a positive manner.

It is obvious from the foregoing that the map is an indispensable tool for planning and development. Many advanced counties of the world have made great strides in national planning and development because of their early commitment to mapping (Robinson et al. 1995, Slocum 2003, Kraak and Ormeling 2002). Balogun (1997) argues that the large investment of developed countries in mapping is enough for us to suspect even if we did not know before, that map could be an elixir for a nation. We all do things better when we have maps around. Urban and regional planning, planning of marketing strategies, industrial location, movement of goods and people, military expedition and oil exploration to mention a few. Without maps, we are like the proverbial stranger who has eyes but cannot see. The person he is looking for is in front of him and yet he is still looking for where to find him. He is already in the street he is asking someone to show him. In spite of the foregoing, we live in a country where governments mapping agencies like the federal and state survey departments have failed to make sufficient investment in mapping, where most of the available maps are out dated, unknown and unavailable to prospective users and where the demand for maps is generally low. In a nutshell, map is a means of communication but unlike other means of communication like newspapers, magazines, radio, television etc. it is not freely available. The question is why? Over the years, many researchers alluded to inadequate funding and cartographic personnel as the major constraint to mapping in developing countries (Adalemo 1982, Balogun 1982, Henseler 1982, Fanta 1992, Robinson et al. 1995, Slocum 2003, Kraak and Ormeling 2002).

Consequently, in Nigeria, successive governments came up with programmes aimed at tackling this twin problem. In-service courses in survey and mapping were organized for workers in the civil service, several industrialized countries and their specialized national

agencies as well as international organization provided oversea fellowships to many individuals from developing countries including Nigeria to study cartography, Budgetary allocation to survey departments increased, the School of Survey - Oyo, Kaduna Polytechnic and the Regional Centre for training in Aerospace surveys (RECTAS) were established to train manpower in the fields of survey and mapping. Furthermore, manpower Development in cartography has continued to feature as a sub-theme in conferences that have been organized by the Nigerian Cartographic Association since its inception in 1978.

In spite of all these, maps that could have enhanced the socio-economic development of the State/country are lacking, most of the existing base maps are out of date and there is no map revision-policy. Maps are made to be used otherwise there is no point in making them (Robinson et al., 1995, Campbel 2001, Slocum 2003, Slocum et al., 2005). As Atkinson (1982) puts it, no map is of value unless its existence is known and what is probably more important, it is freely available for use by members of the public. Keates (1999) asserts that mapping is an expensive business. Unless a relatively large market can be assured for a commercial publication, there is little possibility of the venture being undertaken.

The aim of this study is to examine the prospects of using maps by members of the public and public organizations to guide their day to day activities in Akwa Ibom State of Nigeria. This is because, if more individuals and organizations in the area and indeed Nigerian use maps, the demand for map will increase and mapping will become a lucrative business and many private map-publishing houses will spring up, more Cartographers will be employed and trained and equipment that can make mapping faster, easier and less expensive will be acquired by mapping organizations and more people will become interested in becoming Cartographers. All these will make more maps freely available to members of the public who will in turn become better educated and informed about the socio-economic potentials of the area among other things.

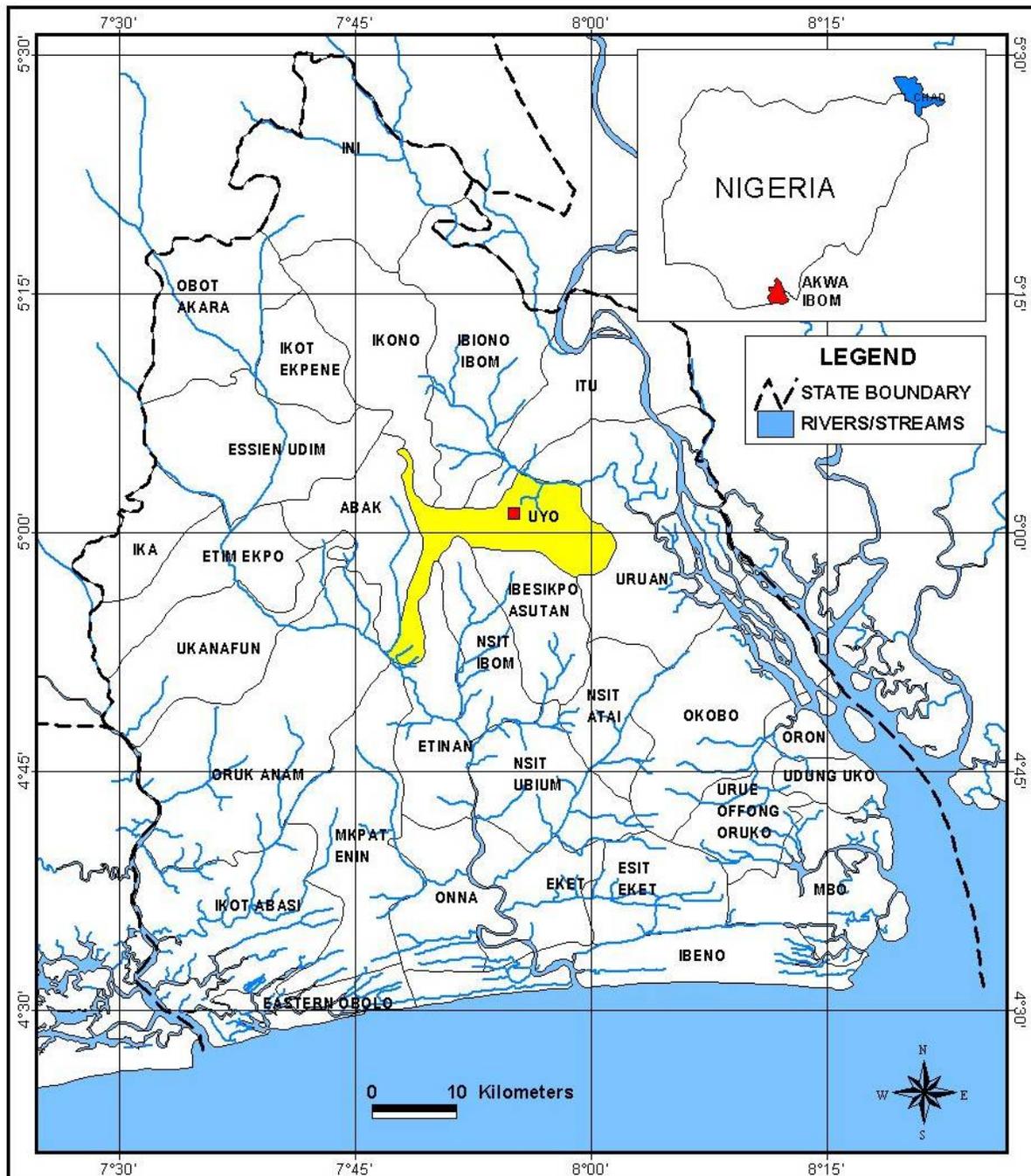
2. Theoretical Consideration

The price of a particular commodity, prices of other brands of the commodity, income and taste influence the quantity of a commodity demanded. In the case of almost all commodities, the quantity demanded increases as the price of the commodity falls - income, taste and all other prices remaining constant. Maps in Nigeria are relatively expensive because they are not usually printed in the largest possible quantity apparently because Nigerians do not have great taste for maps as is the case with Newspapers, Magazines, calendars etc. In the case of supply, the quantity of any commodity that an individual firm produces and offers for sale varies directly with the commodity's price -rising when price rises and falling when price falls. This hypothesis has a strong commonsense appeal since the higher the price of the commodity the greater the profits that can be earned and then the greater the incentive to produce the commodity. Economists in Nigeria value the benefit of mapping in financial terms and because mapping is not susceptible to such analysis, they frequently consider that investment in mapping cannot be justified. The foregoing underlines the need for the availability and use of maps if we are to achieve sustainable social and economic development (Lipsey 1982, Mankiw and Taylor 2011, Ehrbar 2008, Henderson 2008, Goodwin et al. 2009).

3. Materials and Methods

3.1. Location of the Study Area

Akwa Ibom State is situated in South Eastern Nigeria. It lies between latitude $4^{\circ}30''$ and $5^{\circ}30''$ N and longitudes $7^{\circ}30''$ and $8^{\circ}30''$ E (Figure1).



Source: Akwa Ibom State Surveys, 1997.
Figure 1: Location of Akwa Ibom State, Nigeria

3.2. Data Collection

The author carried out personal interviews to determine the state of maps and mapping in the study area as well as whether those at the helm of affairs of public organizations in the area are map minded. Directors, permanent secretaries and other key officials of public organizations in Uyo capital city were interviewed in their offices. Purposive sampling, also known as judgmental, selective or subjective sampling was adopted. This is a Non-probability sampling technique where the units that are investigated are based on the judgment of the researcher. In all, twenty six individuals holding very important positions in eleven [11] organizations that should use maps were interviewed.

Public organizations located in Uyo-the state capital were targeted because it is the base of operation of policy/decision makers in most of the organizations in the state. If they make demands for maps and provide for it in their budgets, such maps will be produced/available for use. The list of organizations and details of some of the maps they need to use is given in table 1.

S/N	Public Organizations	Some of the Maps they Should Use
1	Ministry of Health	Map showing locations of all health facilities in the state, population distribution, incidence of diseases etc
2	Ministry of Education	Map showing locations of all Educational institutions in the state
3	Ministry of Environment	Landuse/land cover maps, maps showing relief and drainage, hydrology, climate, vegetation, industries, seaports/jetties, fishing ports etc
4	Ministry of Agriculture	Soil maps, Landuse/land cover maps, soil suitability and land capability maps, maps showing relief and drainage, hydrology, climate, vegetation, seaports/jetties, fishing ports etc
5	Ministry of Economic Development	Socio-economic atlas/maps
6	Ministry of Housing and Town planning	Landuse maps, cadastral maps, township/guide maps, Utility maps
7	Ministry of Tourism and Industries	Map showing locations of all Industries and tourist facilities in the state
8	Ministry of Works	Road maps, landuse and vegetation map, soil maps etc
9	Ministry of Petroleum and mineral Resources	Geological maps, landuse/land cover maps etc
10	Federal road safety commission	Road maps, Guide maps etc.
11	Uyo Capital city Development Authority	Landuse/land cover maps, guide maps, cadastral map

Table 1: Public Organizations sampled and some of the maps they need to work with

4. Results and Discussion

4.1. Mapping in Akwa Ibom State

Maps are indispensable to development and planning and must be available for use before any development can start (Adalemo 1982, Robinson et al., 1995, Jones 1997, Dent 1999, Campbel 2001, Slocum et al., 2005). In view of this, an inventory of existing maps of Akwa Ibom State was carried out to determine the true state of affairs. The result of the survey is presented in table 2.

S/N	Maps	Date Published	Scale	Publisher
1	Administrative map of Akwa Ibom State	1997	1:250,000	Akwa Ibom State Surveys
1b	Administrative map of Local Government Areas	Compilations not yet published	1:50,000	Akwa Ibom State Surveys
*2	Vegetation & Landuse map of Nigeria	1995	1:250,000	Federal Ministry of Forestry
**3	Hydrological map of Cross River Basin	1982	1:250,000	Cross River Basin Development Authority
**4	Slope map of Cross River Basin	1982	1:250,000	Cross River Basin Development Authority
**5	Soil map of Cross River Basin	1982	1:250,000	Cross River Basin Development Authority
**6	Hydrogeological map of Cross River Basin	1982	1:250,000	Cross River Basin Development Authority
**7	Vegetation & Landuse map of Cross River Basin	1982	1:250,000	Cross River Basin Development Authority
***8	Qua Iboe River Basin Land Capability, soils and Development Potentials	1982	1:250,000	Cross River Basin Development Authority
***9	Qua Iboe River Basin Land Capability Suitability map	1982	1:250,000	Cross River Basin Development Authority
***10	Qua Iboe River Basin soil map	1982	1:250,000	Cross River Basin Development Authority
***11	Qua Iboe River Basin Land Development Potentials	1982	1:250,000	Cross River Basin Development Authority
***12	Qua Iboe River Basin Vegetation and Land Use map	1982	1:250,000	Cross River Basin Development Authority
***13	Qua Iboe River Basin Land Classification for Irrigation	1982	1:250,000	Cross River Basin Development Authority

Table 2: Existing Sources of Spatial Data/Maps of Akwa Ibom State

N.B. Available in sheets; **the entire Akwa Ibom State is part of the basin; ***these maps cover more than 96% of Akwa Ibom State.

Source: Fieldwork/inventory by Author January, 2015

Akwa Ibom State was created in September 1987. Since its creation, quite a number of development activities have been undertaken in the area. Data in table 1 revealed the fact that new maps of the area have not been produced since its creation. This confirms the assertion by Balogun, (1997) that, Nigerians are wonderful magicians; they plan, move about, carry out military activities, market products, distribute mails, combat crimes and even teach geography of the world without maps.

4.2. The Survey

Mapping is an expensive operation. According to Keates (1999) unless a relatively large market can be assured for a commercial publication, there is little possibility of the venture being undertaken. This implies that the attitude of members of the public and public organizations towards map use affect to a large extent, the rate and status of mapping in an area. A pilot study on the public and map reading in Akwa Ibom State carried out recently reveals the following facts:-

More than 70% of administrative heads of public organizations visited confessed to not using maps and not being aware of the value of relevant maps. Furthermore, a critical examination of the sampled population revealed that 87% of the respondents are degree holders that did not offer geography at the secondary school level. Also, none of the organizations visited could boast of having any of the maps listed against it in table 1. Since the ability to read map is not innate in human beings but a skill acquired through formal education, the revelation raises some fundamental questions about geography education.

4.3. The Status of Geography and Its Implications

By the dawn of the 20th Century, geography had evolved into a discipline as an earth science with its own identity and course content. By this time most institutions of learning in several countries of the world had included geography in the curriculum as a separate subject. In Nigeria, it was taught as a separate subject at all levels of the educational system until the 1980s when the 6,3,3,4 system of education was introduced and it was consequently sub-summed under another subject - social studies at the primary and junior secondary levels. Presently it is only at the senior secondary and tertiary levels that it exists as a discipline.

The implications of the foregoing include the following:

1. There is a reduction in the course content at the primary and junior secondary levels. For example, a look at the social studies curriculum and textbooks reveals the fact that impetus is no longer given to Regional Geography. In the days Regional Geography was taught at these levels, maps of the different areas studied were usually displayed or drawn by the teacher on the black board and students were expected to draw and colour the maps in their notebooks as part of the note that was given by the teacher. This is no longer the case today.
2. Since map reading and interpretation is taught at senior secondary three, those who cannot go beyond the junior secondary levels and those who do not register for geography in the school certificate examination are denied the opportunity of learning how to read and interpret maps.
3. Many students run away from geography at the senior secondary level because of the erroneous belief (among students) that the subject is "wide". Meaning that there is too much to teach and learn within a short period of time.

Within the 3 year senior secondary period, students are expected to cover regional geography (Nigeria and Africa or America), physical and human geography, map reading and interpretation. Before the introduction of the 6,3,3,4 system of education, these same subject area were spread out and covered within the five year period. Furthermore, the deplorable situation is compounded by the fact that the West African Examination Council (WAEC) classifies geography under the elective subject category. According to the West African Examinations Council (WAEC) and National Examinations Council (NECO) regulations and in line with the national policy on education for the award of the Senior School Certificate, students must enter and sit for a minimum of eight and maximum of nine subjects. However, all students must register for the following compulsory core subjects:

1. English Language
2. Mathematics
3. One major Nigerian language (Yoruba, Hausa, Igbo)
4. One Science class (Biology, Chemistry, or Physics)
5. One of the following: Literature-In-English, Geography or Physics
6. One of the following subjects: Agricultural Science, Food & Nutrition, Home Management, Technical Drawing, Building Construction, Visual Art, Music.

→ Electives

In addition to the above, every student must register for a minimum of two and maximum of three elective subjects:

Art Christian Religious Knowledge (CRK) Literature-In-English Government, History or Economics	Science/Technical Biology Chemistry Physics Economics or Further Mathematics
Social Science Economics Geography Government Book Keeping/Commerce	Commercial Economics Book Keeping

The above regulation makes it impossible for many students to register for geography. Apart from the science students who are likely to choose geography from the group that it belongs, art students who form the bulk of school leavers in Nigeria today, are less likely to choose geography. This is so because of the presence in the same group, of subjects like Government, History, English, Literature, Bible Knowledge, Islamic, Religion which to them are not "wide".

The foregoing explains why most individuals and organizations in Nigeria today are not map minded. They cannot read and interpret or use maps because they did not offer geography up to the school certificate level.

5. Recommendations

In view of the foregoing, the prospect/possibility of developing the culture of using maps among members of the public and public organizations in Akwa Ibom State and in deed Nigeria is very slim unless the following recommendations are implemented:

1. Restoration of geography as a discipline at the primary and secondary levels of our educational system or the introduction of map reading and interpretation into social studies curriculum at these levels.
2. Introduction of map reading and interpretation as one of the general courses to be offered at the tertiary level of our educational system. Perhaps one should recommend the policy on geography education adopted by the former Soviet Union. According to Adalemo (1982), following the realization of the importance of geography, the communist party central committee of the former USSR passed a resolution in 1931 which made the knowledge of geography compulsory for entry into higher educational and technical colleges/Institutions. This was followed by another resolution on the teaching of geography in primary and secondary schools. This also made provision for the doubling of the number of hours hitherto devoted to the teaching of geography, the preparation of new textbooks and the training of geography teachers in the Universities and teacher training colleges. If these policy measures are adopted in Nigerian, it will have tremendous effect on the development of the economy as was the case in Soviet Union.

6. Conclusion

The need for maps is manifold. It is impossible to list all the requirements for which maps are essential. However, all such attempts at determining where our villages or those of our friends are located and the route linking them, ascertaining the number and extent of individual land holding, identifying the locations of streets/roads/socio-economic activity centres and neighbourhoods in our cities, gathering information about far away or inaccessible places, choosing/determining suitable sites for numerous infrastructure/facilities and gathering the great multiplicity of information now found necessary for the development of the earth and of its people, require maps are mapping. This underscores the need for more Nigerian to become map minded by acquiring the skills to read and use maps.

The fundamental constraint to mapping in Akwa Ibom State and indeed Nigeria is the lack of the culture of using maps by both members of the public and public organizations. It is hoped that government, individuals and organizations will wake up to the realization of the critical importance of maps and mapping as a means for fostering development, extending our range of vision and speaking across the barriers of language. This problem needs to be addressed urgently not only because it will make the public better educated and informed about the environment thereby enhancing sustainable socio-economic development but because it will also make mapping a lucrative business thereby promoting the growth and development of professionalism in Cartography.

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