

Hydrographic As A Tool To Improve Job Opportunities For Young Professionals In The Society, Nigeria.

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Key words: Capacity building , Innovation

SUMMARY

This paper entails briefly the introduction of hydrographic society in west Africa, also how hydrographic can improve the capacity rate of employment in Nigeria, which can be classified into

Competency

Participation and

Benefits

These factors are intended to be complementary to the strategies of other factors with similar objectives in particular the three phases of development of hydrographic capability in Nigeria (phase one, two and three) which are the collection and circulation of nautical information, necessary to maintain existing charts and publications, creation of a surveying capability to conduct coastal projects ;off shore projects and produce charts and publications .Thus, Sustainability becomes an indication whether the positive impacts of the development are likely to continue after external assistance has come to an end and EIA as a key support tool for sustainable development in hydrographic. Lastly recommendations and conclusion.

INTRODUCTION OF HYDROGRAPHIC SOCIETY IN WEST AFRICA,

The evolution of modern hydrography in West Africa could arguably be traced to the navigational safety requirements of colonial expeditions seeking trading seaports along the coastline. On the attainment of independence, an obvious maritime infrastructure inherited by most former colonies included some level of hydrographic capacity. This was in the form of land survey equipment, survey launches and mid level work force. In most West African Ports, relics and structures of the colonial Hydrographic Departments are a familiar sight.

The discovery of hydrocarbons in the early 1960s along portions of the West African coastline precipitated the need for technological advances in hydrographic positioning and depth measuring devices. Consequently, the emphasis in national hydrographic capacity shifted from nautical charting to oil and gas exploration. Whilst the demands of the worldwide offshore industry brought dramatic advances in hydrographic technology, its application for traditional charting surveys continues to demand a high degree of professional understanding and engagement. Today, the Multi-beam Echo Sounder (MBES) and Global Positioning System (GPS) have become the surveyor's tool of trade for depth and position, as opposed to the Lead Lines or Single Beam Echo Sounder (SBES) and the Sextant of the 1960s. However, employing the MBES and GPS in hydrography presents issues, which are constantly under appraisal by various user groups through research, papers, seminars, workshops and conferences. What makes these issues more challenging and equally interesting is the disparity in results obtainable between geographical locations. This probably underscores the plight of the hydrographic surveyor globally, particularly in areas of extreme environmental conditions, like the tropical West African Region. The geographical extremities of West Africa lie between 5° & 25° north, and 18° west to 24° east. The region represents about one fifth of the entire African continent, which translates to a total land area of 7,324,000km. The Sub Region comprises the states of Benin, Burkina Faso, Chad, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Cape Verde, Liberia, Mauritania, Mali, Niger, Nigeria, Senegal, Sao Tome and Principe, Sierra Leone and Togo , as

shown in figure 1 below.

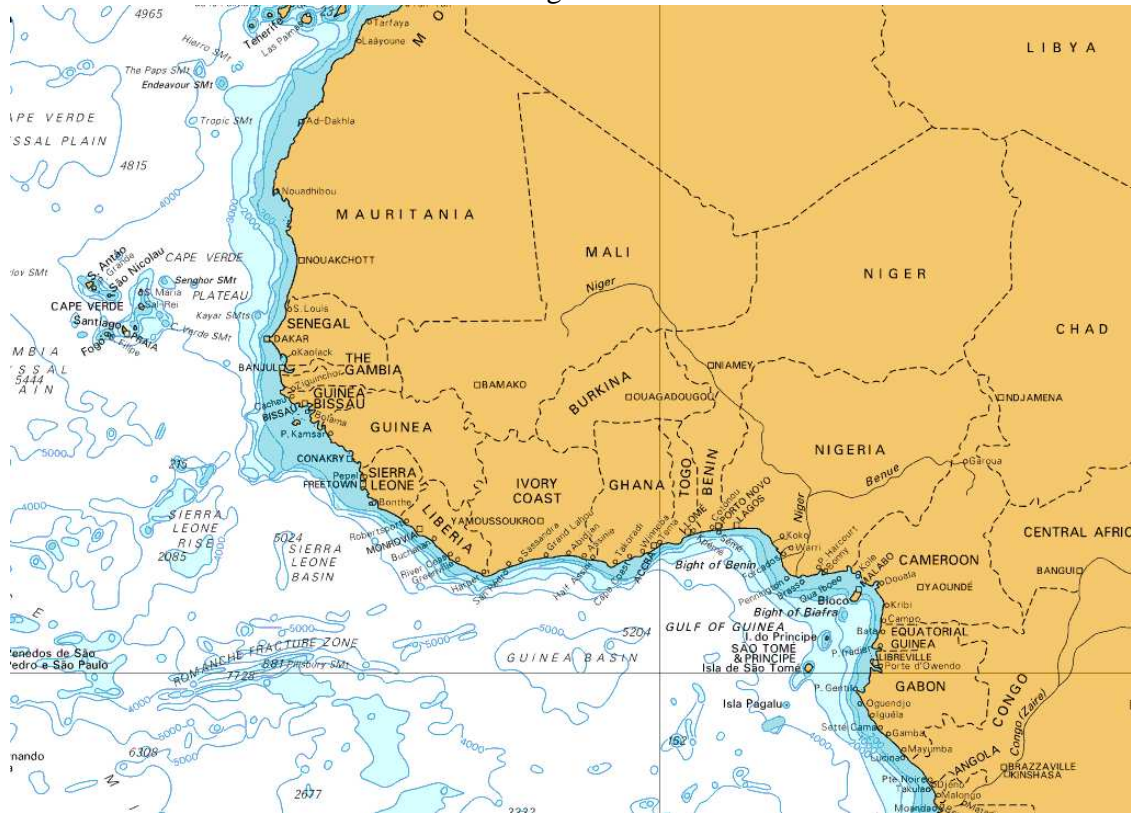


Figure.1 Map Showing West African Nations on the East Atlantic Coast

Source: UKHO²

Table 1 : Assessment of National Hydrographic Capability

Country	IHO Member	EAtHC ²	NHC ³ Proposed	Phase 1 Capacity	Phase 2 Capacity	Phase 3 Capacity
Cap Verde	No	Assoc M	Yes	Partial	No	No
Mauritania ⁴	Pending	Assoc M	No	No	No	No
Senegal	No	Assoc M	Yes	Partial	Yes	Partial
Gambia	No	No	Yes	Partial	No	No
Guinea-Bissau	No	No	No	No	No	No
Guinea	No	Assoc M	Yes	Partial	Partial	No
Sierra Leone	No	No	No	No	No	No
Ghana	No	Assoc M	Yes	Partial	Partial	No
Togo	No	No	Yes	Partial	No	No
Benin	No	Assoc M	Yes	In process	Yes	No
Nigeria	Yes	MS	Yes	Partial	Partial	Partial
Cameroon	No	Assoc M	Yes	Partial	Partial	Partial
Equatorial Guinea	No	No	Yes	No	No	No
Gabon	No	No	Yes	Partial	Partial	No
Republic of Congo	No	No	Yes	Partial	Partial	No
D.R.C	No	No	Yes	No	No	No

² Eastern Atlantic Hydrographic Commission

³ National Hydrographic Commission

COMPETENCY

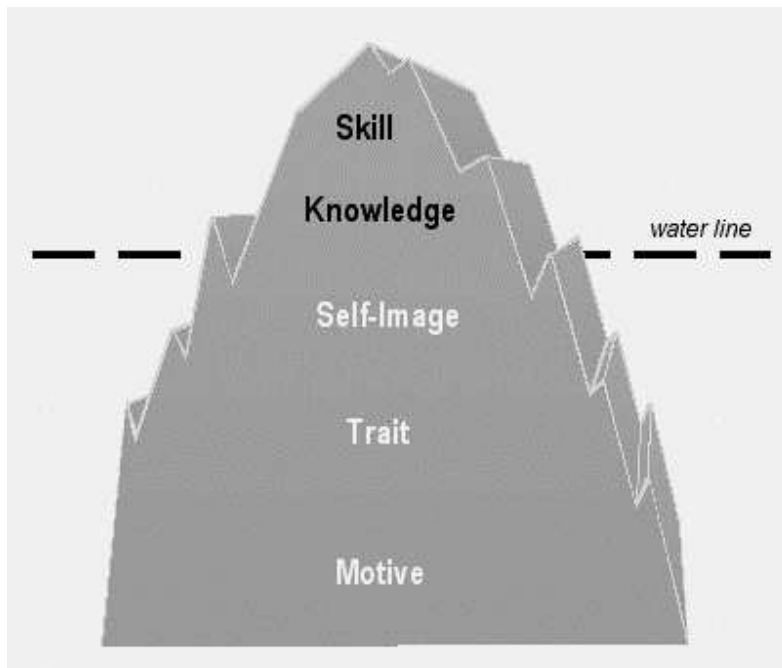
Competencies refer to skills or knowledge that lead to superior performance. These are formed through an individual/organization's knowledge, skills and abilities and provide a framework for distinguishing between poor performances through to exceptional performance. Competencies can apply at organizational, individual, team, and occupational and functional levels. Competencies are individual abilities or characteristics that are key to effectiveness in work.

Competencies are the characteristics of a manager that lead to the demonstration of skills and abilities, which result in effective performance within an organizational area.

Once the job requirements have been clarified (and competencies provide a framework for doing this), then competency interviewing helps interviewers look for evidence of those requirements in each candidate. For people already in jobs, competencies provide a way to help identify opportunities for growth within their jobs.

Competencies are not "fixed"—they can usually be developed with effort and support (though some are harder to develop than others). Employees and their managers together can identify which competencies would be most helpful to work on to improve the employee's effectiveness. They can then integrate that into a learning plan that may include on-the-job experience, classroom training, or other developmental activities

Table 1. Assessment of National Hydrographic Capability Source: EAtHC⁶



Skill: - A person's ability to do something well. For example, he is great at operating the echo sounder instrument.

Knowledge: - Information that a person uses in a particular area. For example, this might

differentiate the outstanding technician who speaks many languages from his or her average counterpart in a company where he/she works, with an international clientele.

Self-image: - A person's view of him or herself, identity, personality and worth. For example, seeing oneself as a leader, or as a developer of people.

Trait: - A typical aspect of a person's behavior. For example, being a good listener.

Motive: - What drives someone's behavior in a particular area (an underlying need for achievement, affiliation or power).

The best way to understand performance is to observe what people actually do to be successful rather than relying on assumptions pertaining to trait and intelligence.

best way to measure and predict performance is to assess whether people have key competencies.

Can be learned and developed.

They should be made visible/accessible

They should be linked to meaningful life outcomes that describe how people should perform in the real world

PARTICIPATION

We can say it is a complex and challenging approach to improving the lives of all people, but particularly the poor and disadvantaged.

We can also say that viewing participation as an intervention to achieve this goal, has produced disappointing results and suggests that viewing participation as a product, raises expectations that experience shows cannot be met which can influence the development of service strategies for people without jobs. It is important to critically examine these experiences and distil the important points. However, it is more important to keep an open mind and be flexible. This includes examining our own assumptions about what works, and developing attitudes and behaviors that support intended beneficiaries, in their search to create employment.

This chapter presents arguments as to why participation is important for improving hydrography situations, particularly for the purpose of job employment and how participation can be a key factor. It begins by noting that the contribution of participation to hydrography is a development and how this can affect the Nigeria in reducing the unemployment rate in Nigeria.

The World Bank's reasons for community participation are:

1. Unemployed graduate have a great amount of experience and insight into what works, what does not work and why.
2. Involving unemployed graduate in planning projects can increase their commitment to the project.
3. Involving unemployed graduate can help them to develop technical and managerial skills and thereby increase their opportunities for employment.
4. Involving unemployed graduate helps to increase the resources available for the programmed.
5. Involving unemployed graduate is a way to bring about 'social learning' for both planners and beneficiaries. 'Social learning' means the development of partnerships between professionals and

Fresh graduate , in which, each group learns from the other (World Bank, 1966).

At the end of any /every project ,more people become stilled and therefore and there marketable or can become self employed, people become empowered.

PHASES OF DEVELOPMENT OF HYDROGRAPHIC SURVEY CAPABILITY

PHASE ONE

Collection and circulation of nautical information, necessary to maintain existing charts and publications up to date.

National Maritime Safety Committee Create/improve current infrastructure to collect and circulate information ,Strengthen links with charting authority to enable updating of charts and publications and Minimal training needed.

PHASE TWO

Creation of a surveying capability to conduct:

Coastal projects offshore projects ...

Establish capacity to enable surveys of ports and their approaches, Maintain adequate aids to navigation, Build capacity to enable surveys in support of coastal and offshore areas Requires funding for training & equipment or contract survey work.

PHASE THREE

Produce charts and publications independently,

Is Phase 3 needed? (Requires high investment for production, distribution and updating)•Alternatively, bi-lateral agreements can provide easier solutions and rewards.

Other findings that have proved inimical to the growth of hydrography in the sub region include inadequate funding, lack of training opportunities and inadequate trained work force. The issue of training remains vital to sustainability in capacity building. Cuts in governmental funding for hydrography have become globally familiar. Hence, the consequent decline of FIG/IHO hydrographic training opportunities, which are mostly available in European and North American institutions, would require a strategy to address the Nigeria hydrography society.

Despite the established benefits of hydrographic survey and nautical charting, it still seems to be a great hurdle in the West African Sub-Region. Although hydrographic charts are primarily used for navigation, their applications in Environmental Impact Assessment (EIA), underwater cables and pipeline routing, nautical archaeology, Offshore Wind farms, mapping fishery habitats, shoreline protection and many other applications are well known another beneficial feature of establishing a national hydrographic capability is the availability of a hydrographic and oceanographic data base, useable for developmental projects. Tidal, geodetic, spatial, oceanographic and meteorological data all form part of a hydrographic database. Considering that a complete tidal cycle takes 19 years of observation to establish, a Coastal Zone Management (CZM) decision needing tidal data would be incomplete without this resource collected over time. Despite the wide use of the GPS technology in West Africa, most states have not established a determined mathematical mapping model (Spheroid) with transformation parameters to the World Geodetic System 1984 (WGS 84).

The provisions of the United Nations Convention for the Law of the Sea (UNCLOS) Article 76, provides for coastal Nations to submit their case for extension of their continental shelf beyond 200nm by 2009. Despite a number of maritime boundary

delimitation disputes in the West African Sub Region, most nations have commendably commenced preparations that would satisfy a claim submission. However, due to the scarcity of technical expertise on issues involved, foreign expertise in the form of consultants and contractors had to be sought. While acknowledging the pragmatic effort of the national organizations involved, the possibility of evolving a strategy to develop Hydrographic survey capability at the same time, could have been explored. Still within the Provisions of the Convention, nations would be required to maintain sovereignty over their claim. Considering that seabed topography is dynamic, it remains to be seen how resources within the claim area would be sustainably managed without national surveying capability. External assistance may have to be sought; again, the question of sustainability in development is being posed.

SUSTAINABLE DEVELOPMENT

The term “sustainable development” is defined as “...development that meets the needs of the present without compromising the ability of future generations to meet their needs.”

Sustainable development aims to provide a long-term vision for the society. Activities to meet present needs may still have short-term horizons, but they must in addition always include a long term perspective and:

- Aims to improve the quality of life of both current and future generations, while safeguarding the earth’s capacity to support life in all its diversity;
is based on democracy, the rule of law and respect for fundamental rights including freedom, equal opportunities and cultural diversity;
- promotes high levels of employment in an economy whose strength is based on education, innovation, social and territorial cohesion and the protection of Human health and the environment.

THE THREE DIMENSIONS OF SUSTAINABLE DEVELOPMENT

The many elements of sustainable development are often organized into three

Dimensions or pillars: environmental, economic and social.

There are different approaches to how they relate to each other, whether they are pillars on the same level or three rather different but closely linked dimensions of sustainable development.

For the purposes of this policy:

- The environment is the necessary basis for sustainable development
- The economy is the tool to achieve sustainable development
- The good life for the entire social dimension) is the target of sustainable development

Environment - the basis

The natural environment - the ecosystem - is under strain from human activity. Fulfilling present needs while reducing the impact of human activity is a challenge requiring new ideas.

It is a fundamental part of this challenge to secure the living and physical Environment, including natural resources, processes and balances. Some simple, yet Fundamental, aims have to be formulated, such as:

.Limiting global warming

- Halting loss of biodiversity
- Controlling and limiting emission of persistent chemical pollutants
- Returning to natural nutrient cycles

The need to limit global warming clearly illustrates how the environment is the basis for any sustainable development. The only logical way to control global warming is to reduce the emissions of fossil carbon significantly over a relative short time. If the climate really comes out of its current balance, it may not be possible anymore to create the good life of the social dimension with all economic and other tools available.

Economy - the tool

Traditionally economic development has been seen as the target and the environment as the tool through the use of resources. Economic prosperity is a very important element of sustainable development; it allows combating poverty, to finance remediation of old burdens, to make changes in our development, etc. However, not all-economic growth implies improvement for sustainable development. Only economic growth at reduced environmental impact can be defended as being part of sustainable development. In other words, economic growth and environmental impact must be decoupled through improved eco-efficiency.

Economic policy and market mechanisms must be applied in support of sustainable development, and not against it. Without denying the importance of tools such as legislation, public awareness etc. the economy is a very powerful tool for sustainable development. Used in the right way, it provides efficient incentives to make choices for sustainable development.

These incentives need to be on all levels of society, they must work in favor of sustainable development by:

- making sustainable investments both in the public and private sectors profitable,
- channeling research into knowledge and solutions for sustainable development, as well as influencing consumption decision on all levels.

Making the economy into such an efficient tool implies that all the costs for any activity must be taken into account when economic and business decisions are made. This includes in particular long-term environmental costs as well as social costs. These true costs must be reflected directly in market prices. This can be Achieved through fiscal measures and through the establishment of markets where environmental goods and

services are traded at real cost. Carbon trading under the Kyoto agreement is an example of an attempt to create such a market.

The Polluter Pays Principle, which is reflected in the Rules and Procedures of the EEA Grants is fundamental part of both establishing mechanisms reflecting a project's true costs as well as securing the financing of these costs. Project promoters must take the Polluter Pays Principle into account whenever relevant.

Social - the target

The very essence of the sustainable development idea is to shift the focus from the present needs to also include the future generations as well. A sufficiently good life for all humans, within present and future generations, therefore the target of sustainable development.

The social dimension is also important because sustainable development can only be achieved by people who feel that they have a fair share of wealth, safety and influence. The underlying assumption is not individual gain, but the provision for, and involvement in equitable growth for all in the society.

Therefore, the social dimension of sustainable development includes support of the civil society, its involvement in solving various types of issues and its participation in decision processes on different levels. The social dimension also includes the fight against poverty through employment, support to sustainable livelihoods, antidiscrimination work, and social security for all.

Environmental Impact Assessment

EIA is 'a process having the ultimate objective of providing decision-makers with an indication of the likely consequences of their actions' (Wathern 1988). Prior to 1970, project and policy appraisals were based largely on technical and cost-benefit analyses. In January 1970, the US Environmental Policy Act (NEPA) introduced the first requirement and procedure for EIA. Some 30 years later, EIA is undertaken in more than 100 countries (Sadler & Weaver 1999) – some key international benchmarks are summarized in

Box 1. During this period, there has not only been widespread adoption of EIA, but also a number of adaptations. Notable adaptations include a shift from the focus on biophysical aspects, to the inclusion of social and economic issues; the inclusion of implementation aspects (e.g. environmental management plans); attempts to address sustainability issues such as biodiversity loss and cumulative effects; and application to higher levels of decision-making such as plans, policies and programmes.

Although detailed steps in the EIA process vary from country to country, there are a number of generic steps which are followed internationally (Figure 1). An explanation of key terms used in the EIA process follows (for more details see

UNEP 2002 or CSIR 2003):

NEPA introduces requirement and procedure for EIA in 1970
• Australia, Canada and New Zealand follow US lead in 1973
• EIA process is established in developing countries in mid- to late 1980s
• European Commission Directive on EIA in Member States (1985, amended 1997)
• World Bank Operational Directive on Environmental Assessment (1989)
• UNECE (Espoo) Convention on EIA in a Transboundary Context (1991)
• Principle 17 of Rio Declaration of Environment and Development (1992)
endorses use of EIA as a national instrument
Source: Sadler & Weaver 1999.

Interfacing EIA and the project life cycle

Project life cycle	EIA life cycle
Pre-feasibility	Screening
Site selection	Scoping
Feasibility	Impact assessment
Feasibility	report EIA report
Board decision	Authority approval
Detailed design	Environmental management plan
Construction	Audit
Operation	Monitor and audit
Closure	EIA for closure

Table

For EIA to fulfill its real potential, in NIGERIA ,Nigerians needs capacity-building for administrators, practitioners and the public; monitoring of compliance with EIA recommendations; sharing of 'best practice' across the region; linking EIA with the full project life cycle; harmonization of legislation within the region; and strengthening the links between EIA, SEA, regional planning and other high-level decision-making processes.

There is also a need to dispel the impression that EIA is an Obstructive process that keeps people in poverty rather than one that ensures future generations will enjoy resource security and a good quality of life. It is also important that the use of higher

level or 'strategic' forms of EIA (e.g. SEA) and Sustainable development strategies be encouraged. These tools
Provide a logical framework into which local, project-based worked are done.

PROBLEMS NIGERIANS HYDROGRAPHY SECTOR IS FACING

Issues typically addressed by EIAs can find context that the significance of hydrography in the general development of nations cannot be over emphasized.

That despite this significance and the fact that its practice has been on for over a century, the level of hydrography awareness is very low in Nigeria .

That there are no institutions in Africa offering Category A (Professional) category B (Technologists) training in hydrography. Even those engaged in technical training are very few.

That there are no strong institutional and legal frameworks that will enhance or facilitate the development of hydrographic practice in Africa.

That the few Hydrographers we have in Africa are mostly in the Oil Industry and the Navy.

The need for hydrographic sector in Nigeria

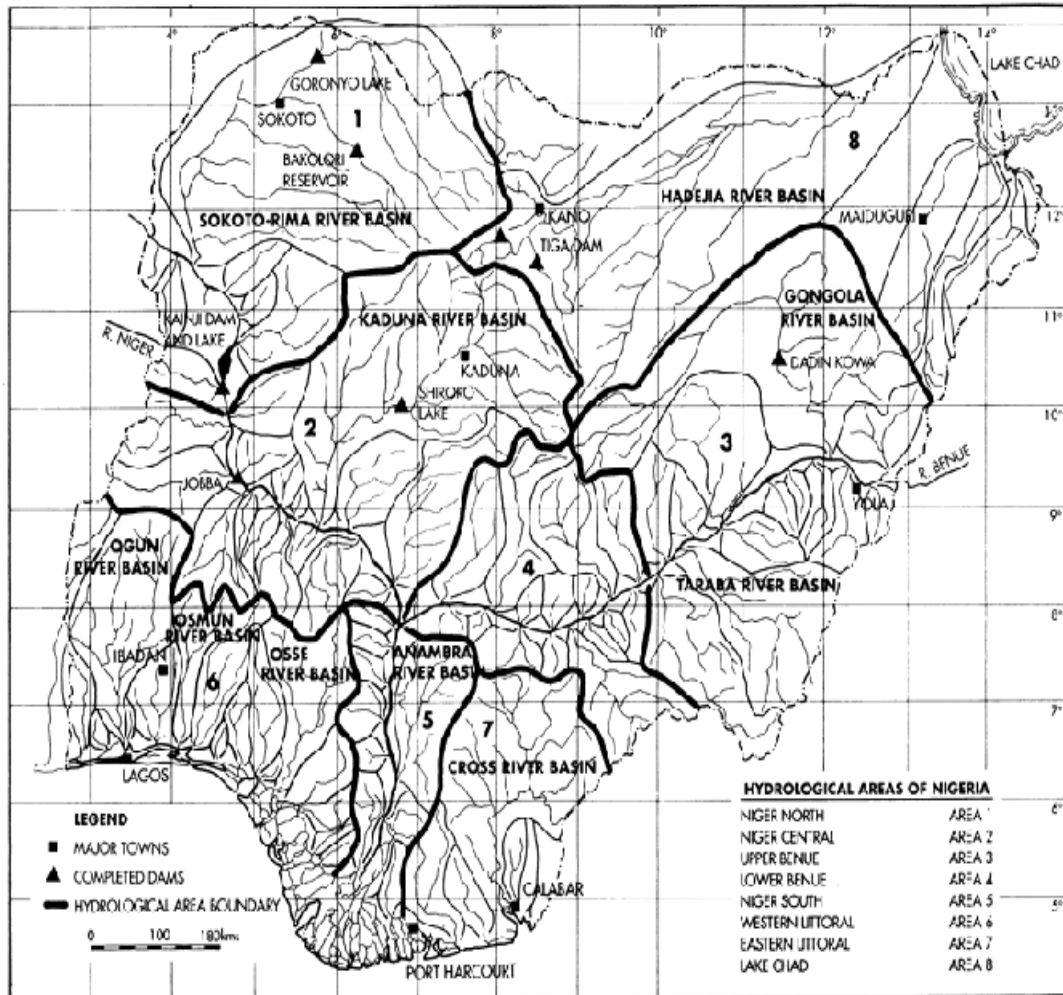
In Nigeria, the 1999 constitution vested the charting authority for Nigeria on the Nigerian Navy (NN). The NN Hydrographic Office (NNHO) performs this duty on behalf of the NN. In fairness, considerable efforts of NN the truth is still far fetched that nothing has be done so far.

Considering that Nigeria has rivers and hydrographic has being a profession to a few , it is of great interest to note that if hydrography becomes a major sector for the republic on Nigeria the rate of lack of employment will reduce by 5% if not more because this will bring about the employment of fresh graduate in surveying, geology engineers and other professions .

RIVERS

The names of the *major* rivers that flow through Nigeria are the river Niger (which is where Nigeria gets its name), and the river Benue. The 'end' region where the Niger River meets the ocean is commonly referred to as 'Delta'. Of course, there are other rivers, including Anambra, Cross River, Gongola, Hadejia, Ka, Kaduna, Katsin-Ala, Kamadugu, Ogun, Osun, Owena, Osse, Sokoto, Yedseram, Yobe, and Zamfara.

THIS MAP SHOWS A VERY SIMPLE ILLUSTRATION OF THEIR ROUTE.



This is to say that if each river is monitored by a team of the survey technology , one can imagine how many would cover the rivers in Nigeria that way creating more job opportunities for the young professionals. Thence this will bring about more employments and reducing the rate also At the end of any /every project, more people become skilled and therefore marketable or can become self employed, people become empowered.

RECOMMENDATIONS

Set aside 5% of their national income derived from the maritime sector for the development of Hydrographic Surveying in Africa.

Strengthened existing institutional and legal framework to facilitate the development of hydrography in Africa using such organizations as ECOWAS, AU and similar regional bodies

establish training institutions in Hydrography capable of training category A (Professionals) and category B (Technologists) Hydrographers in Africa

Collaborate on issues of hydrography so as to synergize and fastrack the development of hydrographic practice.

Called on IHO and the various concerned African countries should be encouraged to step-up their partnership for the development of Hydrography in their various domain.

Called on all hydrographer in Africa to be proactive and work assiduously for the development of hydrography.

7 Called on all Government Survey Directorates to establish Hydrographic Offices in their organizations.

Called on all professional institutions in surveying in Africa to create more awareness on hydrography

CONCLUSION

Finally this paper introduces several areas for future work, aiming at improving the system and integrating it, to enable the country be able to create good framework and the need for the country to empower the survey profession and Nigeria navy to synergize and fastrack the development of hydrography practice in Nigeria. Having identified the deficiency ,the Nigeria Navy NN, and the survey regulatory body the office of the Surveyor general of the federation (OSGOF) should discuss the issues facing us today, on how the hydrographic practice can be enhanced, because this places the surveying profession in a pivotal position, not just technically to undertake data collection for planning ,but also on a strategic policy level, contributing to decision making and asset management .

The coastal integration will need to rely upon best and appropriately available data with increasing opportunities to have a say in the way the marine environment is manage and to give proper consideration to land planning because data infrastructure extend much further than collection. The overall objective of the Project is:

To provide seafarers and fishermen in Nigeria and from neighboring countries with an essential tool crucial for safety of navigation, this would in turn improve operational and training efficiency.

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BIOGRAPHY NOTES

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