

**APPRECIATING BORDERLANDS IN THE ROLE OF BASIC AND  
APPLIED SCIENCES IN RESOURCE ACQUISITION AND  
MANAGEMENT IN NIGERIA:  
ARTS AND SOCIAL SCIENCES IN FOCUS**

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**Abstract**

*Science and Technology plays significant roles in improving the ability of man to conquer nature and adapt to the constantly changing environment. In particular, its application in the industrial sector results to unprecedented economic growth and material development world over. However, despite the reference of Basic and Applied Sciences in resource acquisition in the industrial sector of the economy; the Basic and Applied Sciences is not capable of providing the needed entrepreneurial skills among the citizens; these are within the realm of the Arts and Social Sciences. In addition however, a part from the needed Basic and applied Sciences for economic development, there is need for promotion of lofty values such as love, fraternity, fairness, justice, and humanitarianism. Although profit is worth pursuing, it should be done in a manner that it would not result to untold hardship among the average citizens. Nigeria is highly endowed with abundant human and natural resources. But, because of the inability of the citizens to effectively manage these resources, the country has remained backward and unable to take its rightful position in the comity of nations. For Nigeria to overcome its challenges and effectively harness its resources, Arts and Social Sciences must be promoted alongside with Basic and Applied Sciences. Otherwise, resources; both natural given and invented would be endangered if Basic and Applied Sciences alone is prioritized. The neglect of the Arts*

*and Social Sciences will further worsen the inability of the citizens, particularly as those in position of authority would end up making policies that are inimical to the management of the country's huge human and material resources. This was what exactly the former Head of State, General Yakubu Gowon revealed in the early 1970s. Unfortunately, several years after, the problem is still not being properly addressed.*

## **Introduction**

The paper is inspired by the theme that informed the theme of the First National Conference organized by Faculty of Sciences, Sokoto State University in 2014, 'The Role of Basic and Applied Sciences in Resource Acquisition and Management'. It is not only apt, but timely, considering various development of related challenges facing Nigeria. Notwithstanding the policy inconsistencies that pose fundamental leadership challenges to our nation, Nigeria is today all out to join the 20 largest world economies and secure for herself a befitting position in the comity of nations hopefully by the year 2020. To actualize this dream, all hands must be on deck. In particular, the industrial and economic sectors of the economy need to be re-positioned in line with global best practices in the sector, wherein lies the relevance of Science and Technology or Basic and Applied sciences.

However, this paper seeks to identify some borderlands in the pursuit of Science and Technology for managing resources, thereby driving Nigeria to the promise land. It is important to note that Science and Technology are central in the acquisition of resources (human and

material), but in managing those resources, it requires technical know-how given the complexities of the human society.

The subject of resources acquisition itself is very wide. One could possess the know-how to invent machines and build industries, but if the knowledge is not accompanied by entrepreneurial skills, such could be misdirected to hinder smooth acquisition of resources.

However, both the technicians and business classes need adequate injection of some values in addition to their specialized knowledge and skills. Some of these values include; fairness, philanthropy, humanitarianism, love and respect for the dignity of humans. Profit in business enterprise should be encouraged, but only if it does not lead to untold hardship and deprivation of average citizens. Otherwise, it may be regarded as selfish accumulation of resources at the expense of the general wellbeing of the society and the overall development of the nation.

Be that as it may, the paper seeks to argue that there are certain limitations in the roles that Basic and Applied Sciences could play in acquiring and managing resources. Basic and Applied Sciences

are central in the accumulation of resources, but managing these resources can only be successful with sound management skills which could only be adequately promoted through the management sciences, which is within the realm of the Arts and Social Sciences. In fact, without adequate management skills, even the God-given resources would be plundered and mismanaged. This is unfortunately one of the major problems undermining the development of Nigeria.

### **Conceptual Framework**

Scientists appear yet to agree on the points of differences and commonalities between Basic and Applied Sciences. Thus, conceptual issues are to be explored.

Basic Science is considered as any one of the sciences (as Anatomy, Physiology, Bacteriology, Pathology, or Biochemistry) fundamental to the study of Medicine. Sometimes disciplines within Basic Sciences are also called Pure Sciences. Basic Science developed information to predict and perhaps explain – thus, somehow understand phenomena in the natural world. However, disciplines such as Medical Microbiology and Clinical Virology are classified among Applied Sciences that apply Biology toward Medical knowledge and inventions. (Wikipedia, the free Encyclopaedia, retrieved on 3/17/2014:1).

Applied Science means applying scientific knowledge from areas such as Physics, Chemistry and Biology, among others to practical problems. Different fields of Engineering including some Vocational/Technical courses are within the Applied Sciences. Therefore, Basic and Applied Sciences could simply be reduced to, or be termed Science and Technology.

Arts as field of study refers to non-scientific disciplines such as History, Literature, Languages, Religion, Philosophy, among others.

Social Sciences are disciplines concerned with welfare of the society and the relationships between individuals on the one hand and sections of the society on the other hand (Oxford English Dictionary, 2003). They include Economics, Geography, Sociology, Political Science, Business Studies/Management, Management Sciences, Public Administration, Psychology, Law, Anthropology, etc. However, disciplines such as Environmental Studies, History, Linguistics, Communication Studies, etc are sometime classified within the Social Sciences. Any subject or discipline that scientifically studies man in relation to the society is among the social sciences.

Arts and social sciences are generally described as the Humanities. They include subjects, professions, or more specifically fields of study that have to do with the understanding of behaviour,

environment and culture of the human race. Alieba, (2004:139).

Management comprises of planning, organizing, staffing, directing, and controlling in order to achieve the goal of an organization. It equally involves coordinating both human and material resources to accomplish the goals of a particular organisation. Balogun, et al, (1974:6) and Banez-Mejia et al (2008:19-21)

### **Glimpses at Basic and Applied Sciences and Resource Acquisition and Management in Nigeria**

Basic and Applied sciences, commonly referred to as Science and Technology made tremendous contributions to man's ability to conquer and adapt to his environment. Since the development of scientific inquiry and findings and its subsequent translation into practical endeavors, there has been considerable progress and advancement of humanity. In the industrial sector, production has rapidly increased leading to economic growth. The health, environmental, security, transportation, agricultural sectors and other fields of human endeavors generally benefited from scientific breakthroughs. In fact, scientific and technological development are widely argued to have reduced the world to a global village.

However, despite the miracles performed by the Basic and Applied Sciences towards the up-liftment of man and, in particular, increased accumulation of

resources in different parts of the world, Nigeria is yet to reach the Promised Land. Lack of creativity and functional approach to scientific inquiry in Nigeria subjected our scholars in the field of Science to serious bewilderment and unintelligent mimicry of the centre (the so-called developed countries). Up to now, Nigeria cannot boast any serious technological invention. Most of Nigeria's scientists have no confidence in themselves and therefore have to rely solely on foreign ideas, foreign theories, foreign researches, foreign inventions and foreign products. This explains in part, why our technicians and engineers spent nearly half a century assembling Peugeot automobile, but are unable to produce a Nigerian made car, not even a good spare part. Why? Of course, the answer is irresponsible leadership the country has suffered from since independence. Nigerian Education system is not properly funded and universities do not have world standard laboratories and research institutions. Besides, the intellectual dishonesty which characterizes so much of our academia contributes to the uncreative and unproductive scientists and technicians the country is bedevilled with in the 21<sup>st</sup> century.

Unfortunately, most of the few promising ones among Nigerian engineers and scientists have run away to overseas in search of greener pasture. Today, Nigeria has thousands of qualified medical doctors, engineers and professors in different fields in overseas, particularly in Europe and Americas. In

fact, even Ghana and South Africa are enjoying the services of thousands of professionals from Nigeria. Therefore, instead of Nigeria benefiting from most of its promising talents, irresponsible leadership and low level of patriotism deprived the country of the benefit of its lofty human resources capable of transforming the country.

### **Appreciating Borderlands in the Role of Basic and Applied Sciences in Resource Acquisition and Management**

Although science and technology are important tools in resource acquisition and management, it is important they are not over trumpeted as their limitation also need to be appreciated in acquiring and managing resources in order to avoid a misdirect that could hamper the development of Nigeria.

#### **Resource Acquisition**

Resource acquisition is key to the role of science and technology in the industrial sector of the economy. It was scientific and technological breakthroughs that led to the epic industrial revolution in Europe and eventual economic growth and transformation of their societies. In agriculture, textiles, petrochemicals, auto mobiles, small and medium scale industries, power sector and virtually every field of economic endeavour, science and technology played significant role. However, science and technology alone, without entrepreneurial skills and ability, without

sound and critical minds and above all, without will and sense of commitment and handwork cannot ensure effective acquisition of resources. Science is generally about critical inquiry, experimentation and application of scientific facts to solve practical life problems. Many scientists in Nigeria, because of poverty of entrepreneurial skills could not effectively utilize their skills to make effective use of the available resources in the country. For instance, trained Applied Chemists and Chemical Engineers would have to depend on foreign supplies of detergent powder and other chemicals to produce soap, but could not use and manipulate the available plants and substances into the production of soap. There are quite several ways science and technical skills could be manipulated for effective use of available in-house resources to boost the economy, but due to lack of such inventive and entrepreneurial ability, these resources continue to lie dormant, and not effectively utilised for the promotion of Nigeria's economy. Therefore, inventive and entrepreneurial skills are as indispensable as the application of Science and Technology in resource acquisition.

#### **Resource Management**

Management is usually an area out of the scope of the Basic and Applied Sciences. Of course there are areas where Science and Technology plays useful roles. But in sincere sense of the term, management

is a discipline and an independent field of endeavor. Effective management requires adequate instructions and trainings in the art and craft of management. Therefore, if Nigeria is to rely on trained engineers and scientists to manage the country's resources, definitely the country will fall into serious troubles and mis-management of resources. For instance, science and technology can provide, borrow, or fix Ajaokuta Iron and Steel Company, but has failed to manage it. Moreover, with the aid of technological instruments, many million barrels of crude oil can be lifted, but it could not be safeguarded and made useful, without prudent management. There are many examples of areas where science and technology could help acquire resources. But for these resources to be effectively managed, it requires highly trained and qualified managers, not engineers, medical doctors, or even professors in say mathematics, physics or chemistry.

### **Arts and Social Sciences and the Challenges of Resource Acquisition and Management in Nigeria**

Resource acquisition and management in Nigeria is faced with daunting challenges that have held the country to ransom and frustrated its efforts towards achieving economic growth and overall development. Some of the commonly recited challenges are:

- Lack of sound, inventive and functional education system

- Poor enabling environment for practical application of scientific findings
- Irresponsible, corrupt, selfish and unpatriotic leadership

Nepotism, ethno-religious jingoism, unhealthy struggles to control and milk the country's resources among its ethno-religious and regional groups, have often led to occasional breakdown of social order, in the form of ethno-religious crisis in the country. Low level of patriotism among citizens has led to brain-drain from without and mismanagement from within. There are quite many challenges and problems that resulted to un-healthy acquisition and accumulation of resources and mismanagement of the available resources in Nigeria. To address these challenges, Arts and Social Sciences need to be repositioned and allowed to play its role towards the overall development of Nigeria.

Science and Technology should be promoted in order to expand the industrial, agricultural, and other sectors of the economy to ensure increased accumulation of resources. However, when these resources are acquired, highly trained social and economic managers to effectively manage the resources are needed. Herein lies the unique role of Arts and Social Sciences. Nigeria is highly endowed with abundant human and material resources. Gowon sometimes in the 1970's confessed that the problem of Nigeria is not resources

(money), but how to manage resources. This brings to fore the problem of leadership in Nigeria which has widely been accepted as the number one problem plaguing the country. The problem of policy inconsistencies, and lack of will from the leadership to initiate useful and sincere policies capable of moving the country forward account for most of the leadership related challenges affecting not only resource acquisition and management, but the overall development of the Nation.

Corruption itself is a leadership associated problem. Today corruption is very visible in the nation's social environment, so much that even on the street, public officers accept gratification and the citizenry no longer see it as a crime. There are many frightening cases of corruption in the nation's body polity, so that the country has over the years maintained a frontline position among the corrupt nations in the world. As long as the problem of corruption is not addressed, no matter the volume of resources are acquired, they will be siphoned and mismanaged at the expense of the overall development of the nation. It requires little strength to prove that the problem of corruption among Nigerian citizens cannot be addressed through the teaching of any Basic and Applied science courses. It requires civic, religious, social (history), nationalist, and patriotic instructions and feelings among the citizens to cure ills such as; corruption, nepotism, injustice, inhumanity, greed, selfishness and ethno-religious jingoism.

It is equally important to note that the problem of corruption and lawlessness are responsible for the un-healthy struggle over power and resources among the political elite in Nigeria which is arguably responsible for most of the ethno-religious crises in the country. The slogans of resource control, regional autonomy, marginalization, rotational presidency, zoning, and other related vocabularies that pervades our social and print media are useful to our political elite who are trying to either ignite tribal, racial, religious, regional and other related sentiments in order to either access public offices, or perpetuate themselves in power in order to plunder the country's resources in the name of taking their share of national cake. Unless our hearts as citizens are cured, through effective and sound teaching of the humanities, these problems will not only hamper the proper acquisition and management of resources, but continue to maim the lives of innocent citizens and threaten the survival of the country as a nation, with the end result that they will stall socio-economic development.

### **Conclusion**

The theme 'The Role of Basic and Applied Sciences in Resource acquisition and management in Nigeria', is well intended, and aptly portrays the ambitiously formulated a slogan denoting the alpha and omega status, which Basic and Applied Sciences appeared to have assumed in academic circle. Of course Science and Technology is not only important, but

necessary for the industrial, economic and socio-political development of Nigeria. However, Science and Technology alone are grossly inadequate to address the aforementioned and several other developmental challenges facing Nigeria. One of the very alarming problems confronting Nigeria is that having been fascinated by the industrial and political accomplishment of the Western world, which have undoubtedly been greatly assisted by their breakthroughs in Science and Technical education, the country is ambitiously promoting the Sciences at the expense of every other discipline. The nation should be warned that it was not only through the efforts of Newton, Galileo and their likes that the Western world and the America attained their accomplishments. In the midst of aforementioned scientists, great and patriotic minds like George Washington, Jefferson, Lincoln, Wilson, King George IV, Queen Elizabeth,

Chamberlin, Disraeli; Hegel, Dewey, Adam Smith, Piaget, among others were needed. Science and Technology are needed for the expansion of infrastructure, industries, healthcare services etc. But sound instruction in the humanities is needed by all (the leaders, the so-called scientists, and the rest of the citizens). Of course, one needs a vocation for survival and fulfillment, but for that vocation and resources so acquired to be useful to the society, the nation, and the humanity, one needs to be adequately injected with lofty values such as understanding, tolerance, peaceful co-existence, love, fraternity, fairness, equity, justice, philanthropy/humanitarianism, nationalist feelings and patriotism. Of course, these values would not be learnt either in Mathematics, Physics, or Biology, but lies in the domain of humanities through which the country can accomplish its goals.

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