

Research and Development Initiatives in Nigeria: Challenges and Prospects

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Abstract

Scientific research implies careful examination of an object or situation for the purpose of effecting societal development and improvement. It is a way of acquiring functional, dependable and useful information and data about the particular object of research as well as the analysis of the data collected in order to arrive at a valid conclusion. The prime function of research therefore is to discover answers to meaningful questions aimed at remedying societal challenges. Data in the study were collected in the six Geo Political Zones in Nigeria where a total of 720 questionnaires were administered in 6 Universities and 6 research institutes. Respondents in the study consisted of students, lecturers, research fellows, administrators and parents. 84.3 percent of the respondent holds that a nation's level of development is determined by the functionality of its research structure. The study also revealed that 78.3 percent of the respondents responded that a nation's level of progress is a function of its research administrative efficiency. A nation that aimed at scientific and technological break through must evolve a clear cut philosophy of national development, which include a well defined, strengthened and independent institution operating outside of the usual political interference/manipulations. This paper is of the view that Nigerian government and its people must do what they have been doing before now in research and development differently in order to expect the desired goal and benefits associated with research and development.

1. Introduction

Progressive change which is alteration in the social structure in society is majorly made manifest by the peoples' ability in creativity/innovative ideas galvanized by a defined process/procedure in place. These capacities and wills are channeled through research which is formal work undertaken systematically to increase the stock of knowledge, including knowledge of humanity, culture and society, and the use of this stock of knowledge to devise new applications (OECD 2002). Evidences are abound in nations of the world hosting research centres established with the view of evolving needed initiatives/ strategies that will help mitigate development challenges as well as maximize environmental potentials. While appreciative landmark/ breakthroughs have been accomplished in a number of nations in this regard, many others are still striving to find feet in devising means through which their potentials could be well harnessed. Empirical evidences supports the fact that what makes the difference in the level of development among these sets of nations is the degree of commitment/funding by government/corporate organizations towards research activities, attitudes/how informed are its people in appreciating and encouraging local inventions as well as the amount of synergy between research centres and government/corporate organizations.

Research and development impacts transcend all spheres of human endeavor –social, economic, political, educational, science and technology - clearly serving as determinants to the pace of growth and development of the entire society. Advancement in research gave rise to the growth in science and technology which in turn lead to industrialization, – creation of job opportunities, increase income, increase production of goods and services, creation of

wealth, improved quality of life, improved transportation/communication system, networking regions of the world, clustering of people and integrating nations socially, economically and politically.

Research implies careful examination of an object or situation for the purpose of effecting development and improvement. It is a way of acquiring dependable and useful information and data about the particular object of research as well as the analysis of the data collected in order to arrive at a valid conclusion. The prime function of research therefore is to discover answers to meaningful questions aimed at remedying societal challenges.

Walters as cited in (Oyesola 2010) views research as the application of the scientific method to attain or prove new and exciting theories. It is search, invention, discovery and establishment of new knowledge, facts, principles, theories and methods. It is also acknowledged as a systematic, and objective search for knowledge, to establish theories and prove the truth of ideas, hypotheses and assumptions. It is a search which requires care and diligence for new facts. It is experimentation to find knowledge, to take existing knowledge and explore ways of applying it to the many problems of life (see Oyesola 2010).

Research and experimental development (R&D) play an important role in innovation, which, in recent years, has taken centre stage as one of the main drivers of economic growth and poverty alleviation, policy-makers in turn, can help spread the benefits of innovation through policies that encourage growth in the areas of science, technology and innovation (UNESCO 2010). Nigerian political leaders, policy makers/implementers, sectors/institutional administrators unfortunately are yet to fully key into this global trend that revolutionizes crude production, poor yield, insufficiency, poverty, unfulfillment, stagnation, underdevelopment and the likes into high proficiency/productivity, poverty eradication, fulfillment and development as observed in some other parts of the world through research and development. A better description of Nigeria's experience is to say that its functionaries adopted the framework of establishing institutions (research institutions and universities) and failing to adapt the true tenets upon which such institutes evolved in their source of origin. These tenets include establishment, proper/courteous management led by sound/seasoned administrators appointed in unbiased manner, proper funding, desired research outcomes, appreciation and acceptance/utilization of end products by its people.

To inform effective innovation policies, up-to-date internationally comparable science, technology and innovation (STI) indicators are needed. Of the full set of STI indicators, R&D statistics, the methodology proposed by Organisation for Economic Co-operation and Development (OECD) Frascati Manual (FM) is used extensively in developing countries – despite the fact that it was originally written for R&D survey in OECD countries (UNESCO 2010). The use of this methodology is expected in a developing nation like Nigeria in order for it to effectively measure its STI pace of progress.

This paper examines the possible constraints hindering the research and development sector in Nigeria and proffer possible ways in which such constraints could be assuaged.

2. Research and Development Challenges/Prospects in Nigeria

Mentoring, quality funding, functional leadership capacity, people's attitudes towards innovative ideals, and competences of political leaders drives development initiatives, while ill-will bureaucrats and people's attitudes skewed towards more of consumption than production propels stagnation/underdevelopment. Nations peopled with progressive thoughts and development initiatives find ways in identifying possible hindrances to attaining desired development in order to proffer possible solutions to the observed constraints which is the true essence of research.

The challenges besetting the research industry in Nigeria will be incomplete if the leadership and administrative/funding pattern are not mentioned considering how these factors have also constrained its quest to accomplishing sets goals as well as meeting national development needs.

Stakeholders are of the view that one of the major problems militating against scientific research in general and educational research in particular is the complete absence of a clear cut philosophy of national development, a philosophy which should spell out the direction in which Nigeria wants to channel its development efforts, a philosophy that should not change no matter how frequently political power changes hands. With the frequent changes of political power in Nigeria and the attendant instability, inconsistency and incoherence in governmental policies and programmes, the practitioner in the education industry, including the researcher, is left confused. Before the researcher concludes an evaluative study of a particular programme or policy, it is either discarded or replaced with a different, sometimes completely divergent policy or programme.

Political instability has also taken its toll on the educational and research institutes in Nigeria. The academic calendar is frequently disrupted: there are strikes, lockouts, closures and general social upheavals - and all these can influence the orientation, timing, process and quality of any research activity in the field of education. And yet, the

politician or policy maker out there is waiting, with his characteristic suspicion of, and impatience with the education researcher. A consistent, coherent and comprehensive philosophy of national development is essential for concerted research effort (Jimoh 1998).

Increase productivity, enhanced socio-economic wellbeing, enhanced income, infrastructural development, employment opportunities, enhanced quality of local produce for both local and foreign markets and the likes remains the hallmark of a well thought out research initiatives and development agenda by prosperous nation with high capacity, visionary/corrupt free leadership.

Expected outcomes of a functional research and development initiatives includes equipping the people with the needed capacity with which they need to carryout their economic activities with appreciable degree of proficiency leading to the attainment of maximum output. These capacities encompasses enhancing the people with the skills and competences needed to effectively harness and utilize the potentials found in ones environment. Nigeria's case today is evidence of the fact that it is a nation highly populated with whole lot of potentials but with inadequate competences needed to translate these potentials into socio-economic transformations of the nation. One factor in the exceptional growth rate in this industry of research and development in recent years is Israel's percentage of engineers, the worlds highest, with 135 engineers per 10,000 persons, as compared to 85 per 10,000 persons in the United States. Another factor has been the many thousands of skilled engineers and technicians who have immigrated from the former Soviet Union since 1989. More over, advanced technologies that were originally developed and utilized for military purposes are now being used for developing commercial products for civilian use. With the downsizing of Israels defense industry – as a "peace dividend" – thousands of skilled personnel have left the defense industry since 1988. Many of them were absorbed into the civilian market place, while others formed start-up companies which later became successful high-tech firms (Cohen 2002). They sought for more professionals in addition to the available skilled manpower deployed to harnessing their potentials and making their produce compete favourably in the international market with increase in the GDP level.

The proper environment for research is not yet available in Nigeria. A conducive environment is needed for growth and utilization of research. For this to happen, many things have to be considered. These include adequate infrastructure, trained manpower, institutional capacity, and adequate financial support. It also involves motivating the entire population to adopt a science culture as a pattern of life. These and other matters call for the urgent attention of practitioners and policy makers in Nigeria (Jimoh 1998). Another critical factor hindering the desired break through in science and technology beside the issue of improper placement of persons in headship positions is the non utilization of the services of well trained personnels as majority of Nigerian scientist are either out of the country in search of greener pasture, roaming the street/idle or work in organizations where their scientific competences are not useful.

Educational research, and indeed research of all kinds, is almost as old as man on earth. All that has changed over the years is the approach or method(s) employed in particular research activities. The need to carry out investigations and evolve new theories is one of the mostfundamental functions of the corps of the intelligentsia of a particular society. Similarly, the place of such research activities in the developmental efforts of any society has also been recognized. This is why special attention has been paid to research and documentation by countries that have been eager to develop technologically. For instance, according to Nkwi (1992, p. 35), following the Meiji Restoration in 1968, the Emperor of Japan was required to take five oaths, one of which stated that "knowledge will be sought and acquired from any source with all the means at our disposal, for the greatness and security of Japan". Today, Japan is a great and powerful industrial nation (Jimoh 1998).

A review of Nigeria's economic development between 2000 to date revealed that overall macroeconomic policies and development strategies have failed to provide an enabling environment that could alter the structure of production and consumption activities in order to diversify the economic base. The country has continued to be a mono-cultural economy, depending on oil, indicating that the export base is yet to be diversified. Widening saving - investment gap, high rates of inflation, chronic balance of payment problems and underutilization of resources have continued to be the order of the day. Poverty and inequality is wide spread with about 71 million Nigerians living below \$1 a day and the gini coefficient of 0.49. Socio statistics such as infant, (under 5) and maternal mortality rate as well as unemployment rate are higher than the averages for developing countries (Fakiyesi and Ajakaiye, 2009). In the light of Nigeria's current economic problems, and particularly its poverty situation and unimpressive rates of economic growth, Dauda (2010); Odia and Omofonmwan (2007;2010) takes the position that educational/ research development should be given utmost attention in a bid to enhance sustainable economic growth and development. Since a healthy, well-educated, innovative people make an economy more productive, it is apparent that capacity building through investment in human capital, particularly education can enhance economic growth, alleviate poverty and protect the Nigerian economy from further distortions.

Accordingly, there is however, a need to critically examine the relationship between investment in education and economic growth in Nigeria, with a view to deriving implications for policy direction (Dauda 2010).

Lawal and Oluwatoyin (2011) noted that development is critical and essential to the sustenance and growth of any nation. They added that a country is classified as developed when it is able to provide qualitative life for her citizenry. And concluded that Nigeria in the last fifty years has been battling with the problem of development in spite of huge human, material and national resources in her possession. Human resource has been identified as one of the most important catalyst in the nations development. In fact it is the major propeller for development. In Nigeria, this important and critical resource has not been fully developed, managed and utilized in such a manner that would engender development. The authors identified factors responsible for human resource development to include; political instability, political corruption, poor investment in education, lack of infrastructural facilities, poverty and low technology. They recommended; improved investment in education, implementable policies on human resource development, involvement of the private organization on human resource development, ensuring political stability and credibility as ways of tackling the problem of human development in Nigeria.

3. Relevant Concepts

The theory found suitable for this paper is the new growth theory. The new growth theory as postulated by Paul Romer, holds that economic growth is generated from within a system as a direct result of internal processes. More specifically, the theory notes that the enhancement of a nation's human capital will lead to economic growth by means of the development of new forms of technology and efficient and effective means of production. The new postulations contrasts with the views of neoclassical economics, which holds that technological progression and other external factors, are the main sources of economic growth. Advocates of endogenous growth theory have argue that the productivity and economies of today's industrialized countries compared to the same countries in pre-industrialized eras are evidence that growth was created and sustained from within the country and not through trade.

Romer, further explained that the new growth theory shows that economic growth doesn't arise just from adding more capital, but from new and better ideas expressed as technological progress. Along the way, it transforms economics from a "dismal science" that describes a world of scarcity and diminishing returns into a discipline that reveals a path toward constant improvement and unlimited potential. Ideas, in Romer's formulation, really do have consequences. Drawing from Marxists view, one extremely important insight is that the process of technological discovery is supported by a unique set of institutions. Those are most productive when they are tightly coupled with the institutions of the market. The Soviet Union had very strong service in some fields, but it wasn't coupled with strong institutions in the market. The upshot was that the benefits of discovery were very limited for people living there. The wonder of the United States is that they created institutions of science and institutions of the market. They are very different, but together they have generated fantastic benefits.

Paul Romer opined that, nurturing scientific talent is the key to the nation's technological superiority and continued wealth creation. Support for higher education is the lever by which the government can move the entire economy.

The problem is this: Evidence shows that undergraduate institutions are a critical bottleneck in the training of scientists and engineers, and graduate schools produce people trained only for jobs in academic institutions. "Some in academic circles maintain that scientists selflessly pursue the greater good, that money - or the lack of it - has no bearing on the career a promising student chooses or the effort that a professor devotes to teaching such students," Romer. "But the fact is, incentives do matter for what happens on university campus.

"Students could vote with their feet by selecting disciplines in the universities that offer them the best training for the careers that most of them will follow, working outside of academia", he explains. He added that universities that develop innovative new training programs would be rewarded with an influx of students and tuition fees.

"These grants are intended to increase innovation in business sector, but unless universities train more scientists and engineers, they will go to waste. "Ultimately, it does no good to subsidize business sector demand for highly skilled workers if the university system cannot respond with an increased supply". He however, emphasizes the need for government to subsidize training of innovators as same is capable of changing lives, change organizations and change the world. This theory best explains the need for research and development as it relates to the quest of national development drawing from Nigeria's experience.

4. Methods

The focus of the study is the impact of challenges and prospects of research and development initiatives with specific reference on Nigeria. Stakeholders in the educational/research institutions – students, lecturers/research fellows, administrators and parents in the six Geopolitical Zones in Nigeria constitute the population of this study. The Zones are: South West, South South, South East, North Central, North West and North East. Nigeria is located between latitude 0.4⁰ and 1.3⁰ N of the Equator and between longitude 03⁰ North and 15⁰ East of the Greenwich meridian. Its land mass is 923, 768 square kilometers (356,376 square miles) and a population of 167 million people National Population Commission October, 2011 estimate.

Two institutions (one university and one research institute) were sample from each Geo-political Zone. The institutions sampled, where questionnaires were administered are university of Benin and Nigerian Institute for Oil Palm Research (NIFOR), Edo State in South South Zone, University of Ibadan Oyo State and Nigeria Academy of Science, Akoka Yaba, Lagos in South West Zone, University of Nigeria Nsukka, Enugu State and National Root Crops Research Institute (NRCR) Umudike, Abia State in South East Zone, University of Jos and National Veterinary Research Institute (NVRI), Vom, Jos, Plateau State in North Central Zone, Amadu Bello University and National Research Institute for Chemical Technology (NARICT) Zaria, Kaduna State in North West Zone and University of Maiduguri, and Lake Chad Research Institute (LCRI) Maiduguri, Borno State in North East Zone.

In each of the institutions, 60 respondents were selected in the 12 institutions using purposive sampling technique. 120 questionnaires were administered in each zone, making a total of 720 respondents that were selected from all the Zones.

Questionnaire instrument was used to elicit the desired data for the study. The questionnaire format is made up of 5 points items Likert scale. The instrument is made up of two parts, section A contains the demographic information/biodata of the respondents while section B contains questions designed to elicit desired responses from the respondents. The instrument was validated by two senior associates who are experts in the field, in addition, interview section was held with some stakeholders in the education industry. Also, four indepth interviews were conducted with 1. two administrators – one in a university and one in a research institute – one senior faculty senator member in a university and one senior research fellow in research institute. The statistical tool used for the analysis of data obtained in this study is simple percentage.

5. Findings

Research Question One: is a nation’s level of development a function of its research initiative structure?

Table 1: Research initiative structure and National Development

| NO | SA | A | DA | SD | UD | % SA & A | % SD & D | % UD |
|-------|------|------|-----|-----|-----|----------|----------|------|
| 4 | 108 | 324 | 144 | 72 | 72 | 60 | 30 | 10 |
| 5 | 180 | 504 | 36 | - | - | 95 | 5 | - |
| 6 | 216 | 360 | 36 | 36 | 72 | 80 | 10 | 10 |
| 8 | 360 | 288 | 36 | - | - | 90 | 5 | - |
| 9 | 396 | 180 | 76 | - | - | 80 | 10 | - |
| 10 | 432 | 253 | - | 36 | - | 95 | 5 | - |
| 17 | 360 | 288 | 36 | 36 | - | 90 | 10 | - |
| Total | 2052 | 2196 | 360 | 180 | 144 | 84.3 | 10.7 | 2.8 |

Source: Author’s Field Survey 2011.

84.3 percent of the respondents responded that a nation’s level of development is a function of its research initiative structure. 10.7 percent of the respondents disagreed while 2.8 percent of the respondents were undecided.

Research Question Two: Is a nation’s degree of progress a function of its research administrative efficiency?.

Table 2: Research administrative efficiency and a nation's degree of progress

| NO | SA | A | DA | SD | UD | % SA & A | % SD & D | % UD |
|-------|-----|-----|-----|----|-----|----------|----------|------|
| 11 | 216 | 360 | 72 | - | - | 80 | 10 | - |
| 12 | 324 | 288 | 36 | - | 72 | 85 | 5 | 10 |
| 15 | 360 | 144 | 108 | 36 | 72 | 70 | 20 | 10 |
| Total | 900 | 792 | 216 | 36 | 144 | 78.3 | 11.6 | 6.6 |

Source: Author's Field Survey 2011.

78.3 percent of the respondents responded that a nation's degree of progress is a function of its research administrative efficiency 11.6 percent of the respondents disagreed while 6.6 percent of the respondents were undecided.

Research Question Three: Does pattern/quality of research funding determine a nation's level of development?

Table 3: Research funding and a nation's pace of development.

| NO | SA | A | DA | SD | UD | % SA & A | % SD & D | % UD |
|-------|-----|-----|-----|-----|----|----------|----------|------|
| 1 | 288 | 396 | 36 | - | - | 95 | 5 | - |
| 2 | 288 | 360 | 36 | 36 | - | 90 | 10 | - |
| 3 | 144 | 144 | 324 | 72 | - | 40 | 55 | - |
| Total | 720 | 900 | 396 | 108 | - | 75 | 23.3 | - |

Source: Author's Field Survey 2011.

75 percent of the respondents support the view that a nation's pace of development is determined by its level of research funding while 23.3 percent of the respondent disagreed.

Research Question Four: Does a nation's level of investment on research and development determines its pace of advancement in science and technology?.

Table 4: Investment on research and development and national development.

| NO | SA | A | DA | SD | UD | % SA & A | % SD & D | % UD |
|-------|------|-----|-----|----|-----|----------|----------|------|
| 7 | 396 | 288 | 36 | - | - | 95 | 5 | - |
| 13 | 468 | 216 | 36 | - | - | 95 | 5 | - |
| 14 | 360 | 252 | 36 | 36 | 36 | 85 | 10 | 5 |
| 16 | 468 | 144 | 36 | - | 72 | 85 | 5 | 10 |
| Total | 1692 | 900 | 144 | 36 | 108 | 90 | 6.25 | 3.75 |

Source: Author's Field Survey 2011.

90 percent of the respondents accepted that a nation's scientific and technological advancement is determined by its level of investment on research and development. 6.25 percent of the respondents disagreed while 3.75 percent of the respondents were undecided.

6. Discussion

In some developing countries, large public enterprises in different sectors that intensively develop research activities dominate R&D expenditure. In some cases, these enterprises may create "independent" R&D institutes where research efforts are undertaken in an autonomous way with significant R&D budgets. They have their own financial resources, receive funding directly from supporting agencies and may enter into their own contractual arrangements. This sub-sector includes state utilities both at the national and secondary level that are registered as enterprises. They are 'corporatized' with a single shareholder and also operate independent research centres or R&D departments as cost centres that may receive funding agency support (UNESCO 2010).

The growing evidence on the role and importance of research and education in the development process has made social sector investment an important component of national strategies for sustained growth and development. In Nigeria, in terms of budget estimates, the ratio of public expenditure on social and community services to total public expenditure averaged 2.2 percent between 1977 and 2007. Out of this amount, about 6.5 percent has been directed to education during the same period. Nevertheless, a major trend in education in Nigeria is that investment on the sector has not been encouraging. Public expenditure on education as a percentage of the gross national product was 1.5 (1960); 1.7 (1985-87) and 0.7 (1995) percent. This compares very unfavourably with other developing countries such as Jamaica 4.9 (1985-87), 7.5 (1995-97) and Malawi 3.5 (1985-87), 5.4 (1995-97) percent (UNDP, 2003: 313). In recent times, the percentage of the annual federal government budget to education in Nigeria for the periods 2005-2007 was 6.3%, 7.8%, 8.7% in 2005, 2006, and 2007 respectively instead of 26.0 percent as recommended by the United Nations Educational Scientific and Cultural Organisation (UNESCO). Evidently, there is still a significant shortfall in educational investment necessary for the realization of sustainable growth and development in the country (Dauda 2010).

Nations in the world that have attained a reasonable degree of development and those who aspires to attain similar height are nations that have identified and embraced the tenets of qualitative education, research and development as well as making their services accessible to its people. Brademas (1989) in his recommendations for the future of liberal arts education, observed that education has new mission which includes: preserving peace and security, revitalizing the economy, expanding individual opportunity, enhancing the quality of life and restoring respect for ethical behavior. Orbach (2001) observe that university serves as a broker between government and private interests. The university has the opportunity to serve the public and common good by provoking public debates with unbiased research.

This study is aimed at finding out the impact of the challenges and prospects of research and development initiatives with emphasis on Nigeria. The study reveal that 84.3 percent of the respondents stated that a nation's level of development is a function of its research initiatives and development structure 10.7 percent of the respondents disagreed while 2.8 percent of the respondents where undecided. this structural challenges relates to the pattern of relationship (hostile), political ethnic and religious influence, poor synergy between tertiary institutions and secondary education, government's policies and actions, the missing link between research outcomes and the industries (see the views of Odia and Omofonmwan, 2007).

The study also revealed that 78.3 percent of the respondents responded that a nation's degree of progress is a function of its research administrative efficiency. 11.6 percent of the respondents disagreed while 6.6 percent of the respondents were undecided. This findings implies that a whole lot of predicaments confronting Nigeria's tertiary/research institutions are orchestrated by challenges emanating from administrative deficiencies. These includes issues of both moral and economic corruption. Walshok (1995) observed that administrative challenges in the research universities studied, led to underutilized sources of renewable economic development. She advocated the need for the administrators to commit vigorously to an expanded role that better utilizes the knowledge, expertise, and resources at their disposal for the betterment of the community at large.

Response to the assertion, whether a nation's pace of development is determined by its level of research funding, 75 percent of the respondents alluded to it while 23.3 percent of the respondents disagreed. The views of Okunamiri, Okoli and Okunamiri (2008) are in alliance with these findings having reviewed the implications of poor funding of Nigeria's tertiary education which they observed as inadequate.

The study further revealed that 90 percent of the respondents accepted that, a nation's scientific and technological advancement is determined by its level of investment on research and development. 6.25 percent of the respondents disagreed while 3.75 percent of the respondents were undecided. This findings confirms the observations of the Director General of Nigerian Institute of Medical Research (NIMB), Prof. Innocent Ujah according to Obinna and Onuorah (2011) that one factor responsible for non availability of accurate data in the country was due to lack of interest and funding for research. He hinted that medical research is one major tool to fighting diseases as well as making better policies for

general development of a country. Ujah who noted that in most countries of the world 90 percent of the resources are channeled to research stating that his one year as DG of a research institute has shown that Nigeria is yet to appreciate research. His words, "we have the capacity to conduct research but there is no interest and we lack funding and funding is a major barrier to successful research because it is a very expensive venture".

All the respondents interviewed accepted the fact that what makes the difference between Nigeria's research and educational institutions and those in the developed nations is that, while the ones here rely majorly on subventions from government, the later relies majorly on royalties from their inventions with patent right. And while the institutes/units are headed on the basis of creativity/prudence and task orientated set of persons, the attainment of such headship positions in Nigeria is majorly determined by political/lobbying prowess of those who occupy them.

They contended that the right step which government must take is to evolve an industrial friendly policy, implemented faithfully in order to encourage and empower existing and would be researchers and industrialists. The respondents equally advocated for the need to put in place an innovation support fund by government to strengthen the will and capability of innovators, noting that it will also help remove the fears experienced by experimenters of losing their resources should their invention fails. Stakeholders hold that as a way forward, system integration strategy must evolve whereby the universities, polytechnics, research institutions network on ideas, innovations/inventions. They all agreed that performance and productivity do not come by accident but through dedication, hardwork, and committed stakeholders.

Cyert and Mowery (1989) present aspects of technological change that are essential to economic progress. They opined that workers need to be more adaptable, research needs to be more focused, and managers need to be more open-minded.

A study conducted by Western Interstate Commission for Higher Education (WICHE) project (1992), observed that accountability was seen as the best way for higher education to demonstrate responsiveness to its public, but a functional role was also expected from governing boards in this area. The report further stated that virtually all the respondents saw the need for commitment to collaboration; most frequently mentioned were partnerships that link higher education with elementary and secondary education. In Nigeria however, stakeholders sees the poor synergy between tertiary institutions and secondary education as a missing link hampering the goal of national development.

It is the conviction of stakeholders that further investment by the government, corporate organizations and individuals in higher education and research activities/enforcement of functional administrative principles will increase accessibility to educational opportunities, basic research and production of new ideas/knowledge, expand the traditional role of providing opportunities for job training and retraining for workers in the labour market, leading to national human capital development and national development.

7. Conclusion

The Nigerian research and educational system has overtime been exposed to large scale corruption, and several inefficiencies including faulty headship selection process. As part of the advocacy geared towards efficiency in the system is the need to give more autonomy in financial management in public educational and research institutions. For instance, through autonomy, higher institutions of learning could improve their financial situation by improving the efficiency and effectiveness of resource generation, use and cutting costs.

Besides, public educational/research institutions should be encouraged to develop resource mobilization strategies, in order to generate revenue by themselves. For this purpose, educational foundations can be set up in order to mobilize financial support from private donations (Dauda 2010).

A philosophy of national development must be evolved and everything must be done to give appropriate legal backing to bodies concerned with research and research-related activities.

Policy-making bodies should be set up to guide research activities. Appropriate government agencies should also ensure that research activities are backed up by adequate infrastructure, adequate personnel and adequate funding. Over-reliance on foreign aid would only reduce the relevance of research activities to the Nigerian situation. In order to sustain scientific and technological impetus, and not with standing the general depression, sub-Saharan nations must inject huge amounts of funds into initiating and expanding training and research facilities (Jimoh 1998).

The seemingly absence of conducive environment needed for qualitative and productive research and scholarship endeavor in the country have over time propelled the incidence of brain drain by legions of scholars and researchers to other parts of the world. The home system deserves rejuvenation and enhancement in order to be able to groom more

scholars and encourage brain gain. A system where unproductive researchers/academia who lack innovation/creativity in every sense of it dominate the scene cannot move the system any step forward.

Future generation researchers/academia in Nigeria look forward to seeing the present trend of poor infrastructure and lack of up to date learning/research facilities replaced with cutting edge/ sophisticated equipments to be able to compete favourably with their peers elsewhere in the world. These aspirations are what the government and relevant stakeholders must respond to if the future development goals of the nation must be attained.

This paper is of the view that beside assuaging those obvious inadequacies such as poor funding, decaying infrastructures/facilities, authorities concerned must create the needed ambience conducive for qualitative research/scholarship, provision of subsidies for higher degree training of researchers, protection of purposive/creative researchers, adoption and utilization of findings, and funding the mass production of invented products by researchers in establishing a compelling synergy between the research institutions, the industries and market as a way of creating a sense of fulfillment among researchers as well as raising the productivity profile of the nation.

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