

Indigenous Technology Mechanism for the Eradication of Absolute Poverty in the Rural Areas of the Niger Delta Region of Nigeria

¹Engr. Nwosa J.U.L. and ²Dr. (Mrs.) Nwosa L.N

¹Technology Acquisition and Research Coordination Department,
National Office for Technology Acquisition and Promotion (NOTAP) Abuja, Nigeria.

²Department of Educational Psychology, Guidance and Counselling,
University of Port Harcourt, Rivers State, Nigeria

Corresponding Author: Engr. Nwosa J.U.L

Abstract

Many countries of the world have attained giant economic strides utilizing their indigenous technologies as ignition keys and foundations from which further knowledge evolved. African countries, like Nigeria, have very robust indigenous technologies which have not been maximally exploited for economic growth both for the individuals and the nation. This is a study of Indigenous Technology (IT) mechanism operative in the Nigerian ethnic nationalities, aimed at investigating the effectiveness of these existing IT mechanisms in the eradication of absolute poverty in the Niger Delta Region of Nigeria. It was a qualitative study involving interviews with 78 knowledge workers and 81 Indigenous Knowledge (IK) practitioners. A researcher instrument – Indigenous Technology for Eradication of Poverty Questionnaire – was used to collect data. Deductive Approach was used to analyze data. Findings showed that the IT mechanisms are ineffective in the eradication of poverty in the Niger Delta Region of Nigeria. Findings also showed that sacredness and protection occasioned by tradition makes it difficult to manage IT on the Intellectual Property (IP) platform for entrepreneurial benefits. Based on these findings, it was recommended that IT must be identified by the appropriate government agencies, and a national policy put in place to protect and promote them so as to cushion the burden of loss experienced by the traditional custodians. This should include the use of the IP platform to maintain a balance between the protection and preservation of Indigenous technologies and the free exchange of knowledge.

Keywords: indigenous technology, poverty, intellectual property rights, niger delta, knowledge workers, indigenous knowledge practitioners

INTRODUCTION

In Nigeria, the Niger Delta area is considered the richest in natural oil and gas production. And naturally, oil and gas translates to economic wealth. However, in the opinion of Jack-Akhigbe (2013), the Niger Delta region of Nigeria presents a typical case of the juxtaposition of enormous wealth and acute underdevelopment. The states herein have their own peculiar perennial problems and terrain, which had been highlighted before oil and gas exploration in Nigeria. According to Earth Rights Institute, freshwater swamp forests alone in the Niger Delta cover some 11,700km² or about half of the delta, lowland equatorial monsoon 7,400km², brackish water 5,400km², sand barrier lands 11,400km² all totaling 25,640km². Plants and animals in these terrains are under threat due heavily to the persistent ecological degradation occasioned by over fifty-five years of oil exploration. From the Berlin Conference in 1885, the Willink Report of 1958, and the World Conference on Environment and Development in 1978, it is clearly stated that neglect and extensive environmental damage

cause poverty. In the light of the above, Oviasuyi and Uwadiae (2010) affirm there is massive poverty in the Niger-Delta in spite of accounting for a huge part of the nation's revenues through oil and gas.

Despite oil and gas or the presence of poverty, man has really come a long way before now. Over the centuries, he has struggled to conquer the challenges of survival. Long before Maslow's Hierarchy of Needs was propounded, day to day needs and sometimes never-before-experienced situations arose and man had to find his path through, emerging with workable solutions. In such primary sectors as health, seeds and produce management, animal husbandry and security, man fared well. Explorative efforts birthed the acquisition and harvest of indigenous skills and know-hows. These skills were not necessarily first grade but were effective as far as combating man's survival challenges. Today, Indigenous Technologies (IT) has travelled through centuries, handed down from generation to generation, with most of it undergoing enormous refinement yet

maintaining the same objective of combating challenges. Every nation possesses their unique inherent IT and therefore possesses the ability to rid themselves of absolute poverty in all ramifications once such knowledge could be exploited and managed maximally.

Globally, nations have attained giant heights through the application of IT, managed on the Intellectual Property (IP) Rights platform, for solutions to social and economic challenges. Some schools of thought may have categorized the indigenous methodologies as crude and unrefined but they are basically the foundation for technological inventions and innovations. For instance, Bell pepper was once indigenous in the 1500-1600's when it was discovered by European colonizers of North America. More recently, technological intervention has given Bell pepper an explosive commercial status with China, Mexico, Indonesia and United States on the frontline as producers. Peppers in the Bell family contain capsaicin (a lipophilic chemical that can produce a strong burning sensation). An aerosol extract of capsaicin also known as pepper spray is used by law enforcement as a nonlethal means of incapacitating a person or by individuals for personal defense.

In Nigeria and some other parts of Africa, yam (a starchy tuber) is boiled, roasted or pounded (with maximum labour, using the traditional mortar and pestle), then served with accompaniments like palm oil, vegetable sauce or soup. Over time, man's innovative mind went to work and developed machines which can (a) dry, process, grind and package yam powder in bags for easy access on the shelves of superstores, (b) pound boiled yam into extremely smooth paste ready for consumption. Wood was common in the days of our forefathers basically for making fire but not anymore as the Temperate Forest Foundation claim that over 5000 items are today being processed and carved into not just furniture and furniture related items but paper towels, baby wipes, gum, tea bags, postage stamps, buttons, egg cartons, toothpicks, vacuum bags, insecticides etc. Indeed thousands of businesses are indigenous-knowledge based. Indigenous Technology is a lucrative idea invested on by nations as well as individuals. One therefore wonders how much of this is taken advantage of in Nigeria for growth and development. Besides oil and gas, can Nigeria draw from its indigenous well the IT wealth? Can the Niger Delta look beyond her challenging terrain and abused landscape and invest time and attention in her indigenous heritage in order to sustain her economy as a people?

Statement of the Problem

There are obvious lapses in the link between rich IT in the Niger Delta Region of Nigeria and the expected entrepreneurial benefits therein. Youths in this region are constantly caught up in restlessness over the state of their land as a result of the persistent oil exploration. There are ceaseless agitations over what compensations to be made by the explorers and government and further agitations when these compensations are not adequately utilized to salvage the common plight of the indigenes. Despite whatever largesse dispersed to the people, the lands are continually damaged and the people, who are predominantly farmers and fishers, remain agitated. This situation calls for a look in a different direction – the wealth that is inherent in IT, to help curb absolute poverty and sustain a stable lifestyle.

Aim of the Study

The aim of this study was to address the following Research Question:

Is the existing IT mechanism effective in the eradication of absolute poverty in the Niger Delta Region of Nigeria?

Significance of Study

There is need for a clear cut path to development especially for countries which are perceived to be lagging behind on the global economic race. It is hoped that the outcome of this study will help emphasize the relevance and potentials of IT both in striving and flourishing economies. Economic planners, knowledge institutions, industrialists and relevant agencies in Nigeria can explore and evolve innovative systems to counter the negative façade of a robustly rich knowledge pool for the purpose of building a nation which can sustain her national economic growth. Results of this study will be significant to the youths and the unemployed in the Niger Delta Region of Nigeria who are often hung up on the occasional stipends handed down by oil and gas companies to cushion the effect of consistent drilling.

REVIEW OF LITERATURE

Though IT has roughly evolved to date, it can still be traced back to the first findings of anthropologists, but over the years academic researchers have continued to explore the possibility of using such knowledge as a basis for growth and development of economies (Ajibade, 2008). In Nigeria, researches have been carried out on the subject by scholars like L.T. Ajibade, J.S. Oguntuyinbo, A. Faniran, O. Areola, M.A.A. Osunade, Oguntunji T and others. One among many remarkable researches in Nigeria by P. O. Ogunyale, from Oyo state, was the pharmaceutical composition for the treatment of Sick cell disease. The composition

consisted of local indigenous products such as *uziza pepper* (Piper Guineenses), *camwood* (Pterocarpus Osun), *cloves* (Eugenia Caryophyllata) and *sorghum* (Sorghum Bicolor). It was found effective in the management of Sickle cell disease. Subsequently, a patent (U.S Pat.No. 5800819) was taken out in 1998 to protect the knowledge.

The position that IK is static and somehow frozen in time has been a general representation (Adams, Potkanski and Sutton, 1994; Bebbington, 1993; Kalland, 2000 in Briggs, 2005). Briggs asserts however that such representation is not helpful because they create an image of an unchanging, conservative culture. There is hardly any culture that is unchanging in the face of various branches of surrounding influences and external markets. The weakness of any culture confronted with other cultures lies in its fear of losing itself. The African civilization therefore absorbs steadily and slowly at the risk of gaining or making a loss.

In the light of Vilakazi's (2002) submission that healthy and genuine development policies in Africa must be founded upon the principle and pattern of African civilization, Ajibade posited that African intellectuals should engage in fieldwork on their own people, and on themselves. Ajibade concludes that this should be based first and foremost, on the utilization of the resources provided by African civilization. This however, does not rule out but leaves in the picture other people's ideas/culture for adoption. In so doing, the 'static' and 'frozen' mode hitherto referred to and the imagination that development can only emerge from the application of western knowledge and that IT has little to offer is gradually eliminated (Briggs, 2005).

In line with this thought, Tarawalie (2008) reported the evaluation of factors contributing to the success or failure of The United Nations Food and Agricultural Organization (FAO)'s People's Participation Programme (PPP) in setting up sustainable networks of people-controlled rural organisations in seven African countries. It was reported that the key factor in the countries of greater 'success' was that the PPP connected with long-standing indigenous organisations and indigenous approaches to income-generating activities. These income-generating activities result in economic growth and according to Dahlquist's (2013) investigation, economic growth decreases the level of extreme poverty.

However, research carried out by Okikere (2014) on the state of the Niger Delta as an oil-producing cluster projected that economic growth of the Niger Delta states with their associated oil is below the expected status.

This again points to Jack-Akhigbe's position that the Niger Delta presents a case of the juxtaposition of enormous wealth and acute underdevelopment, presenting a disturbing challenge.

METHOD

This is a descriptive research designed to determine the effectiveness of the IT mechanism in the ethnic nationalities of the Niger Delta. It was conducted in three Niger Delta states - Rivers, Bayelsa and Edo states - comprising of the Ogoni, Edo, Esan, Ikwerre, kalabari, Afemai and Igbo ethnic nationalities.

Six (6) research institutes were drawn from the three states using the purposive sampling technique. Six (6) focus groups comprising of 78 knowledge workers formed the sample from the research institutes and 81 Indigenous Knowledge (IK) practitioners were drawn from three (3) communities selected from the respective states. These gave a total of 159 participants for the interviews and interactive sessions.

Knowledge worker: a person, especially in a research institute, who synthesizes information/data to arrive at conclusions which he may or may not necessarily apply himself to achieve the objective of creating a product/service out of his conclusions.

Knowledge Practitioner: a person who applies available knowledge for the provision of goods and services irrespective of whether the applied knowledge is originally his or not.

Table 1: Composition of sample using the purposive sampling technique

STATES	INSTITUTIONS	INTERVIEWEES	
		Knowledge Workers	IK practitioners
RIVERS	ARAC, Aluu	14	
	COE, Omoku	13	
	OKWUZI		
	Community		27
EDO	RUBBER	14	
	RESEARCH, Benin	12	
	NIFOR, Benin		28
	EKIADOLOR Community		
BAYELSA	NACETEM,	13	
	Yenegoa	12	
	NABDA, Odi		26
	OTUOKE Community		
TOTAL		78	81

The Indigenous Technology for Eradication of Poverty Questionnaire (ITEP) was used to collect data within a timeframe of six months. The knowledge workers, full

time officials of the government owned research institutes, were interviewed by the researcher, at their convenient time, in sessions lasting between 1hr to 1hr.30min. Interactive sessions with the indigenous knowledge practitioners such as the farmers, fishermen, bone setters, traditional midwives, tools fabricators and various other artisans, were carried out between 1hr.30min to 2hrs. All the interviews were recorded to the knowledge of the participants. The recordings were subsequently transcribed into computer files.

DATA ANALYSIS

Deductive approach was used to analyze collected data. All of the interview transcripts were read by the researcher and coded in the style of a Grounded Theory Approach to data analysis (RWJF - Qualitative Research Guidelines Project). After identifying the framework, data was coded accordingly and four recurrent themes were generated. They are effectiveness of IT mechanism, sacredness of IT, handpicking hindrances and new found faith. There were dimensions derived from the themes, some reflective of the research aim, others contributory to the causative factors relating to the research problem. Percentage scores were used to represent responses of the respondents.

FINDINGS

According to 59% of the respondents, the IT mechanism is limited or ineffective in the eradication of absolute poverty in the Niger Delta. Forty-one percent (41%) of the respondents disagree.

All respondents (100%) agreed that traditionally, knowledge is protected. Ninety-four percent (94%) said the sacredness attached to the process makes it difficult to manage on the IP management platform while 6% argued that 'sacredness cannot be separated from IT. Every respondent (100%) agreed that the traditional handpicking method is a hindrance to the knowledge transfer mechanism.

New faith is also a factor. A good percentage of the respondents (79%) explained that a targeted individual may find new religion and refuse to carry on the tradition while 21% argued that these particular individuals should not be blamed for choosing new faith over age-long family traditions.

DISCUSSION

This study sought to find answers to the research question: Is the existing IT mechanism effective in the eradication of absolute poverty in the Niger Delta Region of Nigeria?

The effectiveness of the IT mechanism has been seen as a matter of perspective. Though a majority (59%) thinks the process is ineffective, 41% opined that IT mechanisms are seen as ineffective because knowledge workers are looking at the concept comparatively, aligning it with western knowledge which is often clearer and documented. They argued that it should be seen from the point of view of the recipient of the knowledge and his or her ability to cope, or not, with the nature of the mechanisms. "We are postulating what ought to be. We should consider that the receiver at his own level does not consider the information or the method inadequate or ineffective. They tend to cope very well with the pace, the method and everything." This school of thought further argued that some of these presumed "ineffective" methods are scientific in nature, like plucking certain leaves in the morning, with the aim of getting the best of nutrients in the leaves before sunlight. At their experimental level, they have determined the efficacy of such leaves at different times of the day. They insist that IT is valuable and effective and will boost economies if the practitioners come abreast with global technologies and measure up to them.

Measuring up then includes bringing the ideas to the IP platform, where every detail for the promotion of idea is disclosed and then protected. However, IK practitioners do not subscribe to this process because they consider certain knowledge sacred, thus refuse to expose them. For instance, certain herbs are harvested in silence while others are plucked mouthing inaudible incantations. This associated sacredness is said to be part and parcel of a cure, healing or solution to a predicament. Certain streams cannot be visited at certain seasons because of presence of spirits while the female gender is not allowed in certain arena for same reason. These are often boundaries for non-practitioners and most of these boundaries are instituted by the indigenous people without adequate explanation for them. The sacredness is often supported by myths and predictions of repercussions from the gods. Although sacredness is believed by some to form part of the effectiveness of IT mechanism, knowledge that is not completely detailed cannot easily be exploited for entrepreneurship and growth. According to knowledge workers this position of constant conservation by the IK practitioners is so because they are unaware of the benefits of managing IT contemporarily.

The careful and deliberate selection of a specific individual to groom in and pass the knowledge to (the handpicking method) is considered a weak point in the transfer link. Respondents claim some people die with invaluable information because the right person is not

available to impact the knowledge. Knowledge revolves round a family or clan and does not go across board and this limits the wealth of the society at large. In like manner, the limited effectiveness of IT mechanism is attributable to the fact that knowledge is often within a limited geographical area since the tradition is in the way of spreading it. In the past and even presently people travel long distances to seek simple indigenous solutions to their health or wealth challenges.

Religious affiliation has over time pulled the youths away from circles with huge IT presence because of its unique and unclear content. As a result, IT declines from generation to generation, losing the benefits therein for the family and the community. This is despite the fact that IT is not always 'crude' or 'dirty' "in the face of various branches of surrounding influences and external markets", as asserted by Briggs (2005). Some respondents rightly pointed out that some cuisines that have attained international recognition and franchise are purely indigenous-based. The over 4,000 year old noodles made from foxtail millet in northwest China is widely eaten today without prejudice. It becomes realistic that people with religious concerns can choose to be selective not ignorant.

RECOMMENDATIONS

In order to ensure a viable and profitable innovation system with Indigenous Technology as foundation, it is important to establish conditions that will enhance the conversion of basic indigenous skills to wealth. In view of this, the following recommendations are submitted:

Awareness: In the rural areas of the Niger Delta, awareness needs to be created about the entrepreneurial potentials of the indigenous technologies in contrast to treating ailments for very meager sums of money for survival. Custodians of indigenous technologies must understand that knowledge is globally protected and therefore IK can also be protected on the IP platform. Emphasis should thus be on rethinking their existing forms of transfer, identifying possible weak points and blending/exchanging methodologies where applicable, towards rapid increases in productivity, capitalisation and sustainability.

Improved Indigenous Approaches: Indigenous approaches to development should be improved upon by information practitioners to create a sense of ownership for the custodians of Indigenous technologies which should have a longer lasting impact on relations between the local population and the local administration, giving the former a means of monitoring the actions of the latter.

Policies: Indigenous technologies must be identified by the appropriate government agencies, and a national policy put in place to protect and promote Indigenous Technology so as to cushion the burden of loss experienced by the traditional custodians. This must include the use of the IP platform to maintain a balance between the protection and preservation of Indigenous technologies and the free exchange of knowledge.

CONCLUSION

Despite the prospects of the Indigenous Technology, its character and nature plus the position of the custodians on protection is often a hindrance to themselves, the communities in the Niger Delta and the Nigerian nation at large. This is because some of these traditional know-hows could be transformed into multinational money spinning enterprises. This can happen if and when every stakeholder plays their simple and precise roles. Only then can the people begin to come out of the poverty quagmire of their peculiar location and move forward to an economy that can sustain individuals as well as the nation.

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