

# **PROMOTING FUNCTIONAL LITERACY IN INDIGENOUS KNOWLEDGE FOR BIODIVERSITY AND FOOD SECURITY: IMPLICATIONS FOR POVERTY ERADICATION**

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## **Abstract**

*A sound functional literacy is required to be able to eradicate poverty and attain self-reliance, conserve and preserve biodiversity, and ensure food security. It is my belief that functional literacy could be employed in education of traditional rural dwellers to unfold ideas, facts, values and knowledge embedded in them about biodiversity to ensure food security and eradicate poverty. This paper examines Functional literacy, methods and its sustenance, indigenous knowledge in biodiversity and food security, food security strategies, and implications for poverty eradication. Recommendations and suggestions were highlighted in the paper and if strictly adhered to would not only produce literate citizens and promote indigenous knowledge but help attain self-reliance, preserve our biodiversity and reduce poverty.*

Ability to read and write or knowledge ability is as good as being literate and is part of education. Intrinsically education is a viable instrument and a means of impacting knowledge for the purpose of achieving enviable self-esteem and self-actualization. In view of Okoro (2014), every society have a system of training and/ or educating her citizens for the sole aim of living a good and acceptable life in their proximate environment and the larger society. In the same view, Obanya (2004) noted that human beings are expected to have their aptitude awakened and motivated to acquire life sustaining skills and more importantly to live a life of continuous learning. Living a life of continuous learning is not farfetched from our environment. For ages now education is the backbone for many approaches to development, be it social, cultural, religious, political and economic. It determines the rate and how a nation is developing as is the case in the developing nations. In the struggle to raise literacy rate in Nigeria, education has been given the priority attention by government and teachers in imparting knowledge to learners and by so doing help in poverty reduction.

Traditional rural dwellers are endowed with knowledge that is indigenous which they utilize in a more meaningful way to exist. They use the knowledge in

biodiversity and interpret it in their own language. The varieties among plants and animal species, high crop yield and the superiority of individual crop over another are well known to them. Most of what the traditional rural dwellers know about biodiversity and food security resides within themselves. Unfortunately, the knowledge being indigenous is not readily available and accessible. This hindrance arises from the state of illiteracy among the rural dwellers, who cannot communicate or interact in neither the jargon nor the national languages. Obviously, it is among the factors that blocks the indigenous knowledge from being saleable to the outside world. As Njoku and Njoku (2014), stressed that an individual without effective means of communication in the society does not fully exist in the society. Proper communicative interaction of the rural dwellers in their daily chores helps them share their indigenous knowledge on biodiversity with the outsiders thus contributing to food security for millions of Nigerians. According to Babtunde (2006), interactive communication is vital as it helps in expressing both materials and non-material needs of man. While preserving culture, the indigenous knowledge, ideas, facts, values etc will assist in biodiversity to produce food and prevent food crisis as well as eradicating poverty.

### **Functional Literacy**

Functional literacy is one of the approaches education could use to better the lives of rural dwellers because it is an integral part of the development process whose many goals include poverty reduction. According to Spore (2000), functional literacy is not a question of bringing literacy to people through the route of classical education but rather it is of empowering the most marginalized to improve their own living condition through the right to knowledge. There is a clear indication that for generations in rural areas in Nigeria where access to education has been limited or even non-existence, the benefits of literacy are not part of the fabric of development. This explains why illiteracy is high in largely agricultural and rural areas. In various parts of Nigeria, internally displaced persons and the poorest among the poor of the rural areas, literacy is cripplingly lower. Efforts have been made by past Nigeria government to raise literacy through UPE and UBE and to upgrade the living standard of the beneficiaries. Though, those approaches were well intended but they were not rooted in everyday realities and could be the reason for the collapse of UPE. Functional literacy is all about everyday life. It is learning to read and write enough to do everyday things. Functional literacy should not been seen as a replacement for formal education but simply an extension of the formal approach in a more focused way.

### **Method and Sustenance of Functional Literacy**

Functional literacy aims at both children and adults because children cannot grow in isolation but need adults to show them the way by handing over to them the indigenous knowledge, language, culture, value and the way to do things in their surroundings. So the entire community is the target of functional literacy.

Methods involves selecting workers from the target community itself in order to best respond to the expressed needs of the beneficiaries. Workers who are highly understandable in variety of situations and target groups too are selected to be able to attend efficiently to the beneficiaries and allow literacy to function. Further, great variety of educational methods are applied as in teaching-learning situation to deal with the various educational problems involved. In fact, above methods require a series of steps to follow and win the confidence of the target group and persuade them about the value of a better life through being literate. By so doing the beneficiaries develop themselves by their own learning programmes, by making it functional and letting it evolve gradually, linking it continually to the realities of their daily lives. All effort is geared towards one becoming literate in a person's mother tongue by mastering its spelling, learning its basic vocabulary to construct sentences. This will help a great deal in the extent to which an individual can identify with the mother, pidgin/jargon languages before branching out into learning the national language.

Sustaining functional literacy is possible through the following:

- Establishment of a favorable literate environment which includes all factors necessary for good learning environment.
- Provision of technical assistance in teaching methods includes making available all teaching aids/materials to progress learning.
- Organizing conference with such "theme" as it relates to literacy, for example "promoting communities where literacy thrives" would help in creating awareness on the benefits of education.
- Use of interactive radio; building upon functional literacy needs broadcasting special programme in non-formal education to isolated communities.
- Providing bilingual publications; such publications as newspaper, traffic signs, adverts on bill boards etc would help consolidate the benefit of functional literacy.

### **Indigenous Knowledge in Biodiversity for Food Security**

Limited knowledge exists on how biodiversity are used at local level for food and how it contributes to the sustenance of the household. The ways communities value food resources and how such values change with extreme environmental and economic evolution are vital to biodiversity. However, it is worth considering how commercialization of various products in rural economies have affected exploitation and conservation of biodiversity. The ample information available on these issues are with the local people which they pass on from generation to generation through oral tradition. This valuable source of information therefore originates from indigenous knowledge (IK) which is okay itself. Therefore, information originating from local people about their way of life, resources and their entire environment defines indigenous knowledge. The sources of IK resource include socio-economic activities, farming practices, rural development, food preparation, production, storage,

preservation and consumption. Studies on these provide information on IK. Unfortunately, report on such studies are scattered and not readily accessible. Promotion of functional literacy in IK helps progress its daily usage and accessibility. The great knowledge of our diverse culture is very important to biodiversity. Traditionally, we have known how all the processes involved in getting food on the table as it relates to collecting, hunting, fishing, farming and caring for wild and domestic plants and animals. At least there is bounty knowledge in our beliefs, culture, values, ethics and native language associated with plants and animals that supply our food and how they affect our health. Today, Nigeria is losing her languages, partly because majority of young people occupy cities and fast-trapped by western culture. The implications being that the indigenous knowledge on preservation and conservation of biodiversity resources for food is lost. Thus, some of our local food are now rare and too expensive due to shortage in supply. Again, many people no longer know how to produce, store or prepare local foods due to loss of contact with the elders that will hand over the knowledge to them. Further, they have even lost the taste for local food (i.e. extinct) and will never dream of knowing its origin.

Understandably, low level of nutritional awareness of most Nigerians is very high. Much of processed food Nigerians depend on are costly, with low nutritional value of high fats, sugar, salt and low in high quality protein, vitamins, minerals, fibre and water. But unfortunately depending on them will result to rapidly increasing level of such diseases as diabetes, heart disease, stroke, obesity, and cancer, eventually death follows.

Sincerely, part of the irreplaceable losses are that many of our nutritious foods of plant and animal origin are endangered; forest destroyed and disappearing, streams and rivers silting and aquatic lives origin common in the past are rare. Even our farm lands are eroding and many of our traditional food are dwindling. It is of concern that the current generation hardly know how to farm, prepare and preserve few of our local foods or name and eat many of our traditional foods. Actually, they do not know what they are doing but wondering in ignorance and shortsightedness which are the major causes of loss of biodiversity. Their concern should be targeted towards preservation and conservation of biodiversity for food security and poverty reduction.

### **Biodiversity and Food Security**

Biodiversity is the most vital foundation for food security particularly in resource poor developing countries. It depends on the protection of the natural ecosystem and services as well as IK and materials needed to produce, prepare/process foods. In this case, our forest, beliefs, agricultural system concerning our environment as it relates to farming, fishing, hunting, food preservation, cooking are very much crucial to the sustenance of food. Food security depends on 3 sources: wild harvest, agricultural production and trades. Years back, Nigeria has been depending intensively on trade to source for food, thus, flooding her markets with foreign foods. Agriculture

was abandoned and sourcing from the wild was completely forgotten. Depending heavily on trade source with other nations emptied our national foreign reserve and that threw her into the mess of the current recession as it has never happened. Recalling that agriculture is the economic base of every nation for development, Nigeria is now singing agriculture at every corner of the nation because she has realized her mistakes and want to go back to agriculture. Through genetic engineering hundreds of varieties of plants and animals could be made available from the wild harvest and be domesticated to produce meat, fruits, leafy vegetables and other health gains. According to Randy (2005) people of Fijji Islands eat over two hundred different finfish and over seventy different types of shellfish, crustacean and marine invertebrates. One may ask, how many species of wild harvest and aquatic lives do we know and can boast of making them available in our market, talk less of generating income from them? Most of our staple foods; root crops, cereals, vegetables, tree crops and animals, locally grown and raised could be grafted or breed with the wild harvest to engineer many cultivars of high breed for the good of mankind. It should not be forgotten that these local foods, traditionally provide us with the food nutrients needed for good health. They have low salt, sugar and saturated fats and are within reach of rural dwellers. When fully tapped, local staple foods through genetic engineering will provide income, food and services too. Genetic diversity in biodiversity adds insurance to our food system. Also, it protects our food plants and animals against diseases and natural disasters.

### **Food Security Strategies**

Food security is becoming a structural issue globally and needs to be tackled in several ways. Millions of people in developing nations have been under malnutrition for the past twenty five years with a significant population in Africa (Web and Van, 1994). Many are dependent on emergency food aid yearly and aid is falling sharply. Among those experiencing direct food insecurity are millions of refugees and thousands of displaced persons in the world. Nigeria is not exempted from this phenomena especially in the north east of the nation.

Understandably, world food production has risen faster than before due to inputs in technology, genetic culture and fertilizer. Unfortunately, Nigeria population is fast increasing without corresponding increase in food production. Thus reducing the population of under-nourished people mean that food production has to grow and this will be based on a combination of increases in cropped area, cropping intensities and crop varieties and yield. However, much of potential arable land is currently occupied by forest, human settlement, desertification, drought, land tenure system, flooding and political crisis. The potential for increased yields lies in a complex mixture of factors such as better plant varieties through biodiversity, better use and control of water and use of plant nutrients. Increase in soil fertility means increase in plant nutrient which then results in high yield. However, soil fertility is decreasing drastically in many parts

of Nigeria due to erosion, drought, desertification and flood. Flood in Nigeria has become recurrent decimal to food crises that many farming communities has not recovered. Therefore, positive actions need to be applied seriously for food sustenance.

Food security strategies lie with new environmentally sound technologies such as integrated plant nutrition, system, varieties and pest control management to offer great possibilities for improved yield. These systems of biodiversity and management technologies require more research and dissemination such that the work of the agricultural research community must be made much more accessible. Agreeing with the above view Okafor (1993) indicated that it will be total access to the following:

- To current policies for food security
- To natural resource (land, water, etc)
- To education
- To credit facilities
- To seed supplies
- To technology and inputs

In addition to this view on food security strategies, Spore (1998) emphasized that the issues of distribution, involvement of all concerned players, institutional renewal and the impact of an uncertain macro-economic climate are involved for food sustenance.

### **Implications of Function Literacy for Poverty Eradication**

Traditional rural dwellers are mainly farmers with great deal of indigenous knowledge, arising from their utilization of things and agricultural crops for food. They are aware of the extent of variation as well as the traits displayed by genetically superior individual crops or intra-specific taxa. The knowledge of crop to crop varieties and their consumption uses are vital indigenous information on biodiversity for food security and should not be allowed to die-off but be available to benefit mankind. Its implications are as follows:

- The information that traditional rural dwellers possess about crops and animals on their production, distribution and uses across the ecosystem they manage, the classification and identification of plant diversity and relationship between plants, people and animals are useful and needed in research work. Functional literacy will help them release these information if they are communicating functionally in their daily activities.
- The diversity and variations of plants and animals provide the basis for selection of superior species but factors for selection depends on the availability of information and distribution of data on species. It is of interest because, having functional literacy help them share their knowledge on what they know about biodiversity, all geared towards making food available.
- There are great potentials for the commercial exploitation of nutritional and medical uses of biodiversity thereby justifying their large scale development and conservation. Functional literacy will go a long way in enhancing local participation

especially if the objectives of the projects are geared to the needs and priorities of the local people who themselves have a great deal of indigenous knowledge of their socio economic setting.

- Functional literacy is necessary to promote the conservation and sustainable utilization of indigenous species in rural communities.
- There are prospects of employment opportunities through the development of nursery procedures and other things among participating farmers and their family by being able to use the indigenous knowledge on day to day activities.
- Functional literacy is required to stimulate and sustain biodiversity interest on food security among local people and beyond.

### **Conclusion**

This paper has been able to highlight and discuss the vital roles of functional literacy in unfolding the indigenous knowledge to be utilized in biodiversity and food security. Following the discussion above, the paper is of the opinion that if the recommendations are adhered to, education can unfold indigenous knowledge and help eradicate poverty.

### **Recommendation/Suggestion**

1. Training and information sharing
2. Organizing and financing awareness campaigns through workshops involving communities/leaders
3. Organizing enlightenment campaigns to generate awareness on economic and ecological importance of food plants and animals.
4. The enation of by-laws for protection and conservation of the flora from bush burning and indiscriminate clearing.
5. Support of conservation initiatives of local communities.
6. The facilitation of training of requisite personnel for taxonomic ecological and ethno botanical inventories and studies of forest and woodland, in order to assess and demonstrate their consideration and socio-economic values.
7. The formation of village conservation committees
8. The provision of support to local and national herbaria for documenting of the national flora.

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