

Indigenous Languages as Tools for Effective Communication of Science and Technology for Food Production in Nigeria

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Abstract—It is possible to assert that one of the reasons behind Nigeria's inability to break even in agricultural production is the sociolinguistic complexity of the nation. But then, some advanced nations that equally have many languages are faring better in food production. In Nigeria, taboos and wrong beliefs by farmers towards agriculture as obtained in the past are still extant. Majority of farmers find it difficult to adopt modern agro-based technologies except the few who are into large-scale farming. Based on this background, the study holds that the indigenous languages which ought to have been fully harnessed as models for effective transmission of improved agro-technologies to alter the obsolete methods and promote virile agricultural enterprise have been treated with a wave of hand. This paper therefore provides rationale and framework for latent use of our indigenous languages for integrating relevant innovations in science and technology into agriculture for sustainable development.

Index Terms—sociolinguistic complexity, wrong beliefs, indigenous languages, integration and agricultural production

I. INTRODUCTION

This concerns the background knowledge of language as a vehicle of communication within any society especially in a multi-lingual society especially in a multi-lingual set up like Nigeria.

Agriculture remains the basis of life for most citizens in Nigeria. However, growth in the agricultural sector has been slow since the discovery of oil in the 70s. This has no doubt resulted in deficits in domestic food supply and persistently high increasing food import bill. It therefore seems clear from the foregoing that Nigeria's economic underdevelopment problem in agriculture may not be close to being alleviated without improved literacy, and literacy in this context, means paying more attention to indigenous languages as effective means of eradicating poverty in the country. (Bamgbose, 1991, p. 39) opines that:

...Literacy enables the peasant farmer to gain knowledge in the use of fertilizers, use of credit marketing and price trends and other techniques; it helps the industrial worker to convert from old to new plants, and from being unskilled to skilled, and thus, to improve production.

Taken from the above therefore, it can be argued that at its most elementary level, the use of indigenous languages for our farmers can ensure a flow of information on fertilizers, pesticides, high yield variety of crops, appropriate planting seasons, irrigation and preservation as well as marketing outlets. In the view of (Okonkwo 1983, p. 39), indigenous languages play a very important role in the process of formal and informal education, that is, in the process of enculturation. This would be made easier by employing the local languages in agricultural education and extension services which transform new agro-technologies to the rural farmers with a view to increasing their yields, income and enhancing their standard of living. Perhaps this is why (Gekkie, 1995, p. 34) opines that the important point in agricultural education is to show rural people how the ability to read and write can help them tackle day-to-day concerns. And how to foster this is through the use of languages which the rural people understand, practice and evolve in their everyday lives. There is no denying the fact that when farmers are talked to in their languages, it becomes easier for both the facilitator and the farmers themselves.

II. METHODOLOGY

This study identifies agriculture to constitute a major determinant of Nigeria's national development. This is to stress that among the non-oil products, agriculture remains the focal issue in pursuance of our growth and development. However, this sector has been found not to be fully exploited in recent years. To therefore harness this sector, indigenous languages have been identified as the major agents of simplifying the drive towards growth and development. The data are organised into specific instances of adopting the indigenous languages use as the cultural, environmental, social and political contexts. The content analytic method is the technique used to achieve the purpose of this study.

III. RESULT AND ANALYSIS

(Floyd, 1980, p. 55) suggests that the task of training and educating farmers to improve their methods of crop and livestock production cannot be treated in isolation from tasks of educating Nigerians of all ages no matter their intended or actual economic pursuits. From the foregoing, the main point that stands out today is that majority of those in agricultural production are illiterates who can only use their indigenous languages. This category of farmers, because they are limited in agro-technological innovations and skills and can only produce food for their immediate families with no recourse to export promotion, efforts which has gotten an international effect, since it has not made Nigerian agricultural sector to position effectively in the global market. And in order to meet the current developmental trend of growth in technology, the country's goods for export must meet competitive standards i.e, there should be a provision of conducive and stable export policy environment.

To this end therefore, the potentials of agriculture and other agro-allied investments can be fully explored and harnessed if the benefits of science and technology could be appropriately utilized in the Nigerian languages, just as it is done in advanced countries of the world like Japan, China, Germany and so on. According to (Morgeka, 1995, p.30), the intention of the language education in agricultural economy is to achieve meaningful transmission of ideas, alter wrong beliefs and taboos while assimilation of positive values and norms can be favourably promoted among the locals. It can then be a matter of fact that national development and growth in agro economy, even if narrowly conceived in terms of socio-economic goals, has relevance for language particularly in terms of such agents of development and literacy, orientation and communication. Thus, the importance of our indigenous languages cannot be glossed over with reference to linguistic communication in promoting development in agriculture and food security. There is no doubting the fact that one of the causes of insecurity today is poverty. If the vast majority of the rural farming population, who produce food at subsistent level, were to be reached with technological know-how in agriculture, the mother tongue must be used. (Gekkie, 1995, p.9) opines that for the Nigerian languages to be an effective vehicle of modern education, they must also be capable of expressing the ideas and concepts of modern science.

It is obvious that advanced countries of the world, especially those that have had experience of colonialism as ours, have wilfully disengaged from their cultural backgrounds (though cultural and diplomatic affinity unaltered) in terms of technological terminologies. The point then is that language unification can be seen as an inevitable foundation for any successful development planning in a multilingual society as ours. It is therefore the responsibility of the government to create and nurture an enabling environment for our indigenous languages to be harnessed for massive resurgence if basic life in the service of ordinary man.

Importance of Indigenous Languages in Food Production

Linguistic communication is a necessary condition for the existence of a human group. It enables man to achieve a form of social organisation. (Gbenedio, 1994, p.24) has identified a dual relationship between language and science:

While science has influenced linguistics as well as the literary genres in diverse ways, language provides the tools for scientific investigation, report and dissemination of scientific information. Hence, without science, language cannot be studied as it is today.

Little wonder then why developed countries such as China, Japan and Germany have to use their indigenous languages for almost all their technological terminologies. From this perspective therefore, the relevance of Nigerian languages – Yoruba, Igbo, Hausa and a host of others – must take priority in the resolution of illiteracy since diffusion of new technology, knowledge and skills are very vital to adequate agricultural production in any country. The emphasis given to the use of African languages in pursuance of growth and development in agriculture, according to (Bangbose, 1991, p.45) cannot be ignored because, in his view, any attempt to do that and concentrate on the use of foreign languages, is not only to defeat the main aim of mass participation in the sector but also to limit the advantages accruing from foreign industry and investment to a privileged urban elite.

From the foregoing, it does mean that if the nation must improve on the agricultural production she currently embarks on, the foreign ideas, concepts and technology which would undoubtedly be imported in a foreign language must be transmitted to the farmers in the language that they understand. We should come to terms with the fact that the economic miracle achieved by countries as Japan, China and Germany is not based on a widespread dissemination of English or French, rather, it is the result of the indigenization of such technology in the local languages of the stated countries, coupled with the translation of the processes into terms that the ordinary farmers can grasp anytime any day. Therefore, what those countries mentioned have adopted should be practiced here in Nigeria. It is then that the nation can move towards advancement in agro-technology.

IV. DISCUSSIONS AND CONCLUSIONS

Communication is a social function which occurs whenever persons attribute significance to message related behaviour. And what facilitates communication is language. Tackling hunger and food insecurity in the country remains major development priorities, made worse by climate change, price volatility in globalized food markets and over consumption in wealthy nations. To this end, existing agriculture and food systems are central to sustaining poor people's livelihoods which are technically capable of producing adequate food for all, but sad enough, campaigning on

this sector is vastly felt on paper but not translated to reality due to the main fact that rural people are not adequately involved towards agricultural innovations in the provision of food security.

To make the agricultural sector of the economy attractive, both Federal and State governments have a role to play by letting the government's programmes reach the grassroots. And how this can be made possible is by encouraging the use of indigenous languages for proper dissemination of information on those programmes to local farmers. Successive governments, in efforts to improve the agricultural sector, have introduced various programmes but due to the educational policy that has not factored in the indigenous language towards its implementation, the programmes have remained dormant, with little impact in the sector.

Operation Feed the Nation (OFN), a scheme introduced in the 70s, was aimed at involving both educated and illiterates to focus on farming but the scheme failed to meet its aims due to continued reliance on importation of agricultural products from advanced nations without serious efforts to revitalise the sector through proper sensitization of the people on the success of the programme. Good as the programmed was, it ended in failure because the government only used the media to enlighten the elites who had little or no interest in agriculture, excluding those farmers who produce the food products. Most of these campaigns were centred in the urban centres with English language as the main channel used to propagate the need to increase yields and other agricultural innovations.

Another institute established to ensure revitalisation of the sector is Agricultural and Rural Management Training (ARMTI), a big institute for that matter, has not been able to achieve remarkable success since its inception many decades ago because the farmers who should have been reached through their languages towards the essence of the programme have been side-lined. Little wonder that the former President, Olusegun Obasanjo (The Guardian, 2013, p.6) remarks that the agricultural sector recorded seven per cent annual growth between 2003 and 2007. At a point after 1979, when almost all the gains seemed to have been destroyed through indiscriminate importation and dumping, I was sceptical if we could ever make it in the area of agriculture. According to him, the progress his government made between 2003 and 2007 when Nigeria grew its agricultural production by an average of 7 per cent yearly enhanced his optimism and enthusiasm. He continues in his remarks that then (during his tenure), cocoa production increased from 150,000 metric tonnes to 400,000 while cassava moved from 30 million metric tonnes to 50 million. Obasanjo therefore opines that Nigeria was on the path of self-sufficiency again in vegetable oil, maize and sorghum and even rice.

The above observation speaks volumes of how decadent the state of agriculture has reached, in spite of many efforts made by previous governments to reinvigorate the sector. It is then plausible to ask why Nigeria should not adopt the system obtainable in most advanced countries like Japan and China where all policies and programmes are transmitted into the languages of the local farmers that make them to participate fully with pride and enthusiasm. Rather than doing this, it is only the elite that is given training, leaving out the bulk of farmers who have farming as their major undertaking.

Directorate of Food and Research Institute (DFRI) was one of these programmes which only fizzled out as it came because the offices of the institute were located only in the urban areas, making it far removed from those farmers that were supposed to see it function. The latest of these agencies, Agricultural Transformation Agenda (ATA), has equally not seen the light of the day since those that are actually benefitting from the agenda are the elite who do not even know the road to any farm. The government has made these agencies alien to the local farmers. For instance, no local farmer knows what ARMTI, DFRI or ATA mean in their language yet they are the actual people who engage in agriculture.

In counties where agriculture is taken seriously, the local farmers would be addressed in their indigenous languages on the supposed programmes because they know the farmers are those who work on the land but not the elite who stay in the office. Thus we can see the essence of language towards the growth of the agricultural sector. If the nation were to really achieve growth and development in this sector, a proactive measure is to be mounted towards infusing all our stated well-meaning agricultural institutes with the local languages and allow most of the foreign ideas and concepts to be at the reach of farmers so that success can be rapidly attained.

Crucially, Nigeria, being a multilingual country with more than 450 different languages must find ways of attaining growth, at all costs, in agriculture and one of these ways is to harness the indigenous languages to full capacity level. At this juncture, government must accord priority attention to the provision of critical infrastructure coupled with the involvement of agricultural banks to vigorously put the local farmers on the front burners of their policies, effort which could only be made successful in encouraging the use of indigenous languages to disseminate whatever information in place towards the growth and mainstay of the sector.

Successive governments have declared the revitalisation of the agricultural sector be given the highest priority. And to make this possible, the local farmers should be reached through their languages. To this end, communication in the linguistic sense of verbal and non-verbal exchange is very crucial to the rapid growth of agriculture in the country. (Omondi 1979, p.10) has found that there is an importance in the use of gestures in dissemination. This would mean that in the absence of the mutual intelligibility between the extension worker and the farmer, the extra linguistic features such as gestures can be applied. (Emenanjo, 1996, p.50) suggests that a large number of sub-professional personnel like field instructors and extension workers who are willing to take up this task should be people who are closer to the farmers and know their fauna and flora, people who understand the norms and folklores of these farmers. In this light, the teachers and the extension workers have therefore assumed a multidimensional role of being the instructors, the facilitators, the motivators and above all, the communicators.

From the foregoing, it is imperative that extension services in all major agricultural areas should be available and all methods of dissemination of information be done in the mother tongue of the farmers.

The dissemination of information to the farmers through the local languages is confronted with some problems. (Opubor, 1973, p.15) draws attention to the fact that media content in Nigeria is oriented towards the elite, that on radio and television, news bulletins in English language is three times as long as the equivalent in any other language and that media coverage in minority languages is virtually non-existent. This fact is truly demonstrated in the agricultural programmes serialised on television and radio for farmers. For instance, the network programme "Food Basket", a government pet programme which ought to be disseminated in the local languages is aired in the English language. Thus, the dominance of English over the local ones is still felt in news broadcasts, documentaries on agricultural news and so on. (Bamgbose, 1991, p.45) attests to this when he says:

Virtually all the radio stations in Nigeria are government owns and most of these programmes that would inform the local farmers on the best ways to increase yields and other innovations are not done in the language they understand.

Luckily however, some private individuals have been granted ownership of radio and televisions but ironically, these individuals are more interested in the profits they would make from advertisement than disseminating information in local languages which would boost agricultural production. Based on this development, it becomes difficult for farmers to access news since they are excluded from benefitting what is currently run in these media units. The crux of the matter is that those who actually access the news are the elite that are not interested in the content of the news because they do white collar jobs.

Even if it is agreed that the aforementioned media would be used, the inappropriateness of their adoption poses another structural and logistic problem in view of the regional groupings of our society. A scheme proposed for Nigeria by (Nwoye, 1978, p.193), based on six zones illustrates that all the states in the geographic North including Benue, Kwara and Kogi States should be grouped under Hausa; Anambra, Imo and other Igbo speaking states, under Igbo. Lagos, Ogun, Ondo, Oyo and other Yoruba speaking areas in the South West under Yoruba; Cross River, under Ekiti; Rivers under Ijaw, Bendel, (now Edo) under Edo. From these groupings, it is pertinent to argue that while the largely monolingual states would have no difficulty in imbibing the proposed languages, there would obviously be problems in the multilingual states, that is, it would spark off both psychological and political problems. For instance, how can Kwara, Borno, Benue, Kogi and Plateau States accept Hausa as their lingua franca or state language? How about Edo State, with its attendant multilingual settings? What these point to is that a compromise has to be made in some cases, by which case, more than one regional or state language may be adopted as a transitional measure.

Another feasible problem is the training of extension workers. How many of them are trained in these local languages? They are few in number who can possibly translate foreign terminologies into indigenous ones. Most of them even become aggressive when a local farmer proves inquisitive on account of the farmer's level of incompetence at imbibing the instructions.

There is no gainsaying the fact that the nation has not fared well on the journey to achieving food security. In fact, we are daily confronted with the problems of hunger, strife and environmental degradation. Steps towards developing and managing our abundant natural resources upon which our wellbeing and livelihood largely depend must be done through our indigenous languages. We can evaluate some of these options:

Agricultural programmes on television and radio should be run in the local languages. The Nigerian government, both national and state, should adopt the system of South Africa's Department of Arts and Culture for this purpose. What South Africa did was to launch a system known by the acronym TISSA (Telephone Interpreting Service for South Africa) in 2005. The essence of this scheme is that any citizen of that country can make a phone call to any government department in his or her language and be automatically translated into any of the country's eleven official languages. This has led to the inclusion of everybody in the programmes of the State government nationwide. What is more in this purpose, journals on agricultural technology should be circulated in the indigenous languages so that extension workers would be saved the problems of translating from foreign to the local languages. Experience has shown that in the course of translation, some vital issues could be omitted or out rightly distorted.

The trained agricultural science teachers required to carry out the evangelism of entrenching the local languages and thus help in the dissemination of foreign technologies to farmers should be sought. According to (Miachi, 1992, p.4), 'without trained teachers, no programme will hardly stand the test of time.' Thus the teaching methods can further be enhanced so that the way some people look down on extension workers – 'farm teachers' could be excluded from our national psyche.

Communication units should be set up in agricultural departments at all levels of government including non-governmental organisations. These units should of course be manned by personnel with adequate knowledge of agriculture. Again, the media houses should be engaged in order to provide sufficient publicity needed but every channel employed should be factored into the local languages for assimilation by the farmers. Film shows, seminars at local levels could be provided using the mother tongues of the locals.

Nigeria is a multilingual nation which has more than four hundred languages. Only few farmers in the country practise modern methods of agricultural production. A question therefore arises about the actual role of language in the face of this multi-ethnic composition. The truth is that language does not have a role to play if really the nation aims to

achieve growth in agriculture. Linguistically heterogeneous states are said to be usually economically underdeveloped while the heterogeneous ones are highly developed, (Bamgbose, 1991, p.36).

However, the basic problem posed by language diversity is how really to achieve mass participation and grass roots involvement in order to ensure widespread and genuine development in agriculture. As it is now, not much is gotten in the area of mass communication i.e. there is no flow of information since communication specialists in the country feel that indigenous languages do not provide sufficient audiences to be explored. Yet the bulk of farmers in Nigeria remains the peasants who can only be reached through the local languages to disseminate information on fertilizers, pesticides, high-yield varieties of crops, appropriate planting seasons, irrigation and preservation as well as marketing outlets.

In the foregoing development, only the serious-minded extension workers can make the dissemination of the information possible in the face of multiplicity of language. For instance, how do you get enough teachers for each locality? In Edo State alone, there are close to 50 different linguistic groups. Does it mean that if the foreign technology, whether transferred should be domesticated and indigenized to conform to the norms of 50 groups in Edo alone, 50 or more teachers should be sought? They are not adequate for this task. Everyone wants the white collar jobs. This is the major problem confronting agricultural production in Nigeria. Hence, the resort to 'produce and eat' practice without any consideration for export management. This is perhaps why (Bamgbose, 1991, p.53) puts it thus:

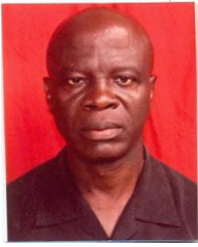
It has been shown that even where languages are not same, some form of 'semi-communication' across languages is possible.

However, only few of these languages are so similar to warrant this condition to succeed. Apart from the major languages, Hausa, Yoruba and Igbo, the remaining linguistic groups have not done much in transmitting the foreign ideas, concepts and technology in agriculture to the masses in the language that they can understand. But one point must be noted, since the agricultural growth and technology achieved by countries such as Japan, China and Germany was not based on a widespread dissemination of English, popularly known as global language but as a result of the indigenization of the technology in those countries mentioned and the translation of the processes into terms that the ordinary factory hand can understand, then Nigeria's case should not be an exception.

It must also be added that budgetary allocation to agriculture and agricultural training should be released in time to ensure proper training of agricultural personnel so as to fast track the implementation of the Agricultural Transformation Agenda of the Federal government. A radical viable language education which incorporates the function of our local languages would then have tremendous impact on this move. Once we give a pride of place to the indigenous languages in the dissemination of agro-induced information to farmers, it would spur enthusiasm which would lead to growth and development in the sector.

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