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### Abstract:

This paper investigates the communicative appropriateness of designations of modern agricultural concepts in existing literatures in Yorùbá, a major Nigerian language spoken in the South Western Nigeria. The study is based on the assumption that the way the receiver decodes the message depends on such factors as his knowledge of the subject matter, the form and his understanding of the terminologies used. Unfamiliar terminologies will subject the message to misrepresentation and a breakdown of the communication process. The data for the study were extracted from target language agricultural literatures. Findings show that some of the existing conceptualized terms fall short of expressing the intention and purpose of the source language terms. The study recommends a need for terminology planning in the indigenous languages to aid effective sharing of modern agricultural knowledge between experts and the rural populace.

*Keywords:* agriculture concepts in Yorùbá, designations of modern agricultural concepts in Yorùbá terminologies agriculture in Yorùbá, modern agricultural concepts in Yorùbá.

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#### 1. Introduction

To say much research has been carried out in Nigeria on agriculture, given the number of her universities (conventional and technical) and research institutes is an understatement. However, despite the numerous researches, not much has been done on the relationship between agriculture and agricultural education of the grass roots in their indigenous languages. This has adversersely affected the economic wellbeing of the grass roots and their response to modern agricultural practice. The importance of development of indigenous languages in the domain of agriculture is underlined given the following factors.

First, African Institute for Applied Economics (AIAE), (2006: 10-11), provides the following statistics in relation to agriculture in Nigeria:

- 86% of the households in agriculture in Nigeria live in rural areas;

- Agriculture accounts for about 35 per cent of the GDP and more than 60 per cent of employment;

- Agriculture and its allied disciplines have the highest poverty incidence (67 per cent) among all economic sectors, and about 62 per cent of Nigeria's poor are in agriculture.

- The rural sector contributes 65 per cent to national poverty;

- about 7 out of every 10 farmers are poor and 6 out of every 10 poor households are farmers.

Second, the technology delivery system in agriculture is organized around the extension service system. According to Akande (1999:6), the extension service system is concerned with making research findings generated in the agricultural research institutes and the universities available to farmers in the form in which such findings can be applied to solve problems relating to farm production system. Babalola (2002:49) describes Nigeria's extension service system as "inefficient and

ineffective...because our farmers have not been informed or encouraged to change their production practices". One would not be wrong to say that the inefficiency and ineffectiveness of the extension workers could be in part due to the structure of their training which lacks indigenous language content in our universities and research institutes. Lonyangapuo (2015: 28) describing the structure of training of extension officers in Kenya says,

the extension officers are trained in English and since most

of the knowledge that is received is foreign and in a foreign linguistic system, it requires that for them to be able to disseminate the same as professionals in their area of specialization, they must be well prepared during their training. This is quite important because for one to effectively communicate, the communicator must i) know their audience ii) know the subject matter and iii) use an appropriate medium that can be understood by the audience. The ultimate goal for this is to have a common understanding. However, as it has been, emphasis in training has been on content and not much on how this content should be disseminated.

The foregoing is also true of Nigeria. The training of the extension workers lacks indigenous language content. No wonder BAFCYLE (2008:14) says "many of our B.Sc first class honours in Agriculture can hardly name ten plants in their local languages".

Third, the National Policy on Education (NPE) (2004 revised edition), section 4 paragraph 19(b) lists Agriculture as one of the subjects to be taught in primary schools. Paragraph 19(e) equally prescribes the mother tongue (MT) as the medium of instruction:

The medium of instruction in the Primary School shall be the language

of the environment for the first three years. During this period, English shall be taught as a subject of study.

The implication of section 4 paragraph 19(e) is that indigenous languages should be used as the medium of teaching all subjects, including Agriculture, at the lower primary schools (i.e. Primary 1-3) with the

exeption of English which is taught as a subject on its own. It is observed that this portion of the NPE has not been implemented. Pulpils, right from the pre-primary level, are taught in English. Consequently, they are not introduced to the knowledge of Agriculture in their mother tongues.

Fourth, one of the major problems facing food and agriculture in Nigeria today as noted by Sadiq (2013) is illiteracy, a tragedy compounded by the refusal to use native languages in educational instruction. Sadiq says:

The greatest number of dedicated full-time farmers in Nigeria can neither read nor write. The local farmers there are even as uninformed as they lack modern agricultural education. The climax of illiteracy there, is Nigeria's total negligence and, or her non-usage of native languages in the nation's pursuits for modern education. For in this modern world, people that still studies (sic) in foreign languages have not really started learning. And this level of illiteracy and unawareness do often constitute some serious setbacks, even in Nigeria's food production efforts.

Gekkie (1995:34) opines important that the 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 native languages by facilitators it becomes a lot easier for them to comprehend the messages being passed them. To the best of my knowledge, the important point to note is that acquisition of literacy ability alone does not solve the problem of knowledge deficit in agriculture. Agriculture like every other field of human endeavour has a set of concepts with which knowledge is negotiated. These concepts will have to be localized into the indigenous languages and made available to the masses for better results.

Finally, in different shapes, forms, sizes and packaging, successive Nigerian governments have talked about diversifying into agriculture. In defence of that, they have glamorized Nigeria's exploits in the export of cocoa, groundnuts, coffee, and palm oil before the oil boom in the early

1970s. Going back into agriculture looks simple and accomplishable. However, the questions that beg for answers from language perspective include the following: Do the rural masses that negotiate their daily lives in indigenous languages have access to modern agriculture knowledge available in English? How do we make modern agricultural information that is in exogenous languages available to the teeming rural masses involved in agriculture? How do we make our agricultural outputs better in quantity and quality than what currently obtain? How do we enhance the economic welfare and productivity of the rural masses? How do we make Nigeria's extension service system more effective? And finally, from the point of view of pedagogy, how can pupils be introduced to modern agriculture in their mother tongues without appropriate and adequate lexical resource?

The only gap that needs to be filled is development of indigenous languages from the perspective of lexical expansion. There is need to localize modern agriculture concepts and make them available in whatever means to the stakeholders. For effective knowledge transfer and learning, the localized terms should be appropriate in terms of concept-term connection and sociological values of the target language.

### 2. Terminology and Specialized Communication

Terminology is an important element in specialized communication. First, it differentiates specialized languages from one another, and from the general language. Second, domain experts use terminology, not only to order thought but also to transfer specialized knowledge btween languages as well as to structure information that the specialized texts contain. Cabré (1999: 47) identifies conscision, precision and suitability as the relevant criteria for evaluating a specialized text:

...conscision reduces the possibility of distortion in the information. It must also be precise because of the nature of scientific topics and functional

relations among specialists. Finally, it must be appropriate or suitable to the

communicative situation in which it is produced so that, depending on the

circumstances of each situation , every text is adapted to the characteristics of

the interlocutors and their level of knowledge about the topic.

Cabré (1999) and some other scholars such as Thirumalai, (2003), Bamgbose (1984), Owolabi (2004, 2006), Awobuluyi (2008) (see also UNESCO (2005), ISO/FDIS 704 (1999)) have identified characteristics terms must possess to be able to facilitate a text that is conscise, precise and suitable. Valeontis & Mantzari (2006) note that unlike what obtains in the general language where the arbitrariness of the linguistic sign is fully acceptable, special languages endeavour to make the process of designation systematic, based on certain specified linguistic principles so that terms reflect the concept characteristics they refer to as precisely as possible. These characteristics include semantic transparency, precision, redundancy, explicitness, completeness of coverage, linguistic economy, relation to subject field, and clinical cognition.

### 3. Study data

The study data were manually extracted from such works as Dictionary of the Yorùbá Language, A Glossary of Technical Terminology for Primary Schools, Quadrilingual Glossary of Legislative Terms, Yorùbá Modern Practical Dictionary, Rural Development Voices, an Agriculture based magazine published by the JDP Ibadan Province and agricultural extension service bulletins and literatures presented in Yorùbá. These documents contain agricultural terms that are already named in Yorùbá. A total of 1500 Yorùbá agricultural terms were manually extracted from the texts. The terms were analysed to determine their communicative appropriateness based on certain specified linguistic principles so that terms reflect the

concept characteristics they refer to as precisely as possible. These criteria include semantic transparency, precision, redundancy, explicitness, completeness of coverage, linguistic economy, relation to subject field, and clinical cognition (see UNESCO (2005); Thirumalai, (2003); Bamgbose (1984); Owolabi (2004, 2006); Awobuluyi (2008) and ISO/FDIS 704 (1999).

### 4. Findings and discussion

Findings show that some of the existing localized terms in Yorùbá are not semantically transparent. A term is considered transparent when the concept it designates can be inferred, at least partially, without a definition. Making a term transparent, according to ISO/FDIS 704 (1999) involves creating it based on its delimiting characteristics. In other words, when a new term in a target language is not created based on its distinguishing conceptual characteristics and its meaning is not visible in its morphology, such a term is said to have violated semantic transparency condition. A semantically transparent term aids cognition. Put in another words, semantic transparency condition provides for the user's idea and recognition of the target term to be immediate and unambiguous within the domain of intended use and make it possible for the user to easily link or associate the target term with the source term. Let us consider the following. In Fakinlede (2003), Yorùbá term for anti-body "a natural substance that the body produces in the blood to fight diseases" is òjè-ara apèyàwuu-ru "lit. body fluid (that is) killer (of) infitely small creatures". The semantic intransparency of the term is obvious if one considers the following:

1. òjè could not be linked to protein.

2. èyàwuu-ru does not suggest disease.

3. òjè-ara apèyàwuu-ru does not contain semantic units suggesting "disease" and

"protection against" which are distinguishing features of the term antibody. In view of this, we motivate agbèjà ara (lit. a substance that fights for

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the body). Although semantic transparency may not be the rule in the general language language, in specialised language especially in secondary term formation, semantic transparency is desired. The meaning of the concept to be named in the target language must be perfectly clear to the users. For cognitive purpose, the terminologist would have to isolate the semantic property of the concept to be named so as to be able to transfer the exact meaning of the concept to target language users.

Again, some of the terms are not precise in designating the source terms for which they are created to designate in meaning, purpose, intention or description. For instance, calving "The process of giving birth to a calf" is represented in the existing conceptualized form as ibimo eranko afómolómú/oyàn "lit. giving birth of animals that feed the young with breast" (NERDC, 1991). Every mammal has a term that denotes its parturition. The parturition of a goat for instance is kidding "the process of giving birth to a kid by a female goat", while that of a rabbit is kindling "the act of giving birth to a young rabbit". Motivating ibimo eranko afómolómú/oyàn for the English term calving violates the principle of term precision as the conceptualized term suggests that it is only cows that breastfeed their young ones. Ìbímo eranko afómolómú/oyàn could be replaced with the target term ibímo mààlúù; bíbímo mààlúù "lit. giving birth (of) cow". Again global warming is designated ségesège (lit.in consistent) in Rural Development Voice (2009 : 25). Designating the term as ooru ojú-ojó (lit. heat of atmosphere) would be more precise. In addition to the foregoing, let us consider the existing Yorùbá term for census (complete enumeration of members of a population in a given area). The NERDC (1991) Yorùbá term for census is ìkànìyàn (lit. enumerating human-beings). In the domain of Agriculture, the meaning of census as ìkànìyàn cannot be sustained in the Yorùbá term for livestock census (complete enumeration of livestock). That being the case, kíkaye / ikaye (counting number) would be more appropriate to designate census while kíkaye / ikaye eran òsín (counting number of livestock) could be motivated to designate livestock census.

Moreover, some conceptual characteristics of the existing terms are redundant as their presence or absence do not affect the status or meaning of the terms. For instance, the NERDC (1991) conceptualized equivalent for agricultural fair is ipàte ojà àgbè fún títà"lit. displaying farmers goods for sale". Apart from the fact that the representation violates the economy principle, the term includes the redundant feature fún títà "for sale". The feature fún títà is unnecessary because the conceptual unit ipàte "displaying goods" already suggests the feature fún títà "for sale". At any rate, goods are exhibited for sale. In our conceptual analysis therefore, agricultural fair "the exhibition of farmers' goods at a particular place at regular periods for selling to the general public" is represented as ipate oja agbe "lit. displaying goods (of) farmers". Furthermore, some of the terms are not perfectly clear in meaning, leaving no room for vagueness, implication, or ambiguity. For the Yorùbá representation of fermentation (chemical instance, transformation of organic substance as a result of the actions of bacteria) in the NERDC (1991) is ibà. Ìbà is ambiguous. It can mean homage or fermentation. In order to guide against this ambiguity, we motivated idíbà as the target terms for fermentation. Idibà is not suggestive of homage.

Again, some of the terms do not exhaustively cover the defining characteristics of the concepts the designate. For instance the terms green manure, in-organic manure, organic manure, and chicken manure all designate different types of fertilizer. In order to distinguish each of the terms from others, the features that distinguish each of them need to be emphasized. The need for completeness of coverage on one hand and the imperativeness of conciseness on the other in most cases trigger borrowing. When distinctive features of a concept to be emphasized are many, the resulting conceptualized term would be uneconomical. For instance, the concept chlorophyll "the green pigment of plants that captures the energy from sunlight necessary for photosynthesis" can be said to be composed of the following distinctive characteristics, viz,:

- green pigment of plants

- green pigment captures the energy from sunlight
- sunlight processes water and air for plant food

Processing all these features to capture the sense of the term would predict èròjà àwò ara ewé tí ewéko fi ń gba ìtànsán oòrùn láti sọ omi àti aféfé da oúnje "property of the colour of plants used to capture sunlight used to turn water and air into food" as Yorùbá equivalent of chlorophyll. Apart from that, èròjà àwò ara ewé tí ewéko fi ń gba ìtànsán oòrùn láti sọ omi àti aféfé da oúnje is too long and wordy to be recalled. In view of this, the loan kílórófì could be motivated to designate the concept.

Some of the terms considered also fail linguistic economy test. UNESCO (2005) refers to this term quality as conciseness. A short term is valuable by the virtue of the fact that it can easily be memorized and used. Practically therefore, a short term is preferred when it can express the sense of a long, precise term. For instance, aquaculture "the production of aquatic plants or animals in controlled environment such as pond, tank etc." is represented as isé òsìn eja, akàn, àti ewébè ojù omi "lit. work of domesticating fish, crabs, and vegetable of water" (NERDC, 1991). As could be seen, the conceptualized form apart from being unable to cover the extensions of the concept (because fish, crabs, and vegetable are not the only features that define aquaculture), it is uneconomical and cannot make recall easy. On the basis of the above, isé àgbè ajeméwébè oun òsìn omi "lit. farming relating to vegetable and animals of water" could be motivated. The term is shorter and it captures all domesticable creatures and plants in water such as planktons, fish, prawn, squid, water lettuce, water hyacinth, etc. However, it needs be emphasised that the principle of linguistic economy conflicts with explicitness and transparency: the greater the number of characteristics included in a term, the greater the explicitness and transparency of the term, and vice versa. Practically therefore, a short term is preferred whenever a long, precise term is not suitable.

In addition to the foregoing, some of the existing terms do not show relation to subject field for which they are created for use. This quality rules out dependence on the general knowledge of the source language and

of the world. For instance, critical period "a period in the life cycle of crop when it is sensitive to the deficiency of production factors" is indicated as "ìgbà ìsòro" "lit. period (of) difficulty" (NERDC, 1991). The use of the term is reflective of the meaning of the term in the general language. Going by the source language definition of the term in relation to crop production, we are of the view that the appropriate Yorùbá term should be àkókò ìpalára fógbìn (lit. period of potential harm for crop)

It is also observed that some of the existing terms do not conform to the linguistic norms of the target language (morphological, morphosyntactic, orthography and phonological). For instance, the vowels an and on are variants. The vowel on occurs after labial sounds, viz, b, m, p, gb, and w while an occurs after other consonants (Bamgbose, 1990: 6). In Fakinlede (2003), communicable disease is conceptualized as àrùn aron-ni "lit. disease that infects person" and àrùn àròn-mó "lit. disease that infects". The vowel on occurring after a non-labial sound is a violation of the phonological and orthographical norms of Yoruba. The correct form of the term should be àrùn aran-ni "lit. disease that infects persons".

Relevant to the issue of linguistic norms is the appropriateness of borrowing. Cabré (1999) identifies borrowing as one of the two processes of developing the vocabulary of a language. According to her, "terms can be created by means of applying rules of the language itself... or they can be borrowed from another code or subcode". Greenberg (1957:69), as cited by Abdul (1987: 87) sees borrowing as "the acceptance in one language of a form, in both its sound and its meaning aspects, from another language; though usually with both phonetic and semantic modifications. As noted by Greenberg (1957), wholesale borrowing of terms into target language is blocked and as such, borrowed terms are expected to conform to the structure of the target language. Findings in this study show that this is not always the case. There is wholesale borrowing of source language terms and inappropriate adaptation of borrowed terms as revealed from the data given below.

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Table 1. Table showing wholesale borrowing Term Use in text kenaf òsùnwòn èso kenaf gbíngbìn (IAR&T (2010) Ìgbésè kín-ní No1, p.3) lo altrazine kí àgbàdo tó hù jáde; lo altrazine/primextra/butylate primextra bí èpò bá pò jù nínú oko; lo butylate fún àwon èpò bíi gbégi (IAR&T (2010) Ìgbésè kín-ní No 4, p.5) single super phosphate Àpò méta ajílè tí a mò sí single super phosphate la ó lò sí ilè hékítári kan (IAR&T (2010) Ìgbésè kín-n No 5, p.2) kitchen compost Kó ohun mìíràn tí kò wúlò jo fún kitchen compost (Rural Development Voice (2006) Vol 1, No 1. p.10) 75 cm Ko ebè ní ìwòn 75 cm síra won (Cotton Sector Development Programme Poster (Yorùbá Version) 45 cm Gbin kéréwùú márun sí méfà sí ihò ní ìwòn 45 cm síra won (Cotton Sector Development Programme Poster (Yorùbá Version) CP 15 èkún agolo mílíkì kan àti àbò ni a ó dà sínú omi èkún èro ìfínko ìgbàlódé CP 15 (OYSADEP, 1995 p. 4). A le lo àdín ... tàbi epo kerosene (Rural Development Voice kerosene (2009) Vol. 4, No2. p. 17 Source: Komolafe (2021 p. 58-59) Widyalankara (2015) explains the motivation for borrowing within the framework of Expediency Hypothesis. Widyalankara (ibid, p. 2) says:

Expediency carries connotations of an action done due to desirability

and convenience. It is a practical method of solving intricacies in the context

of linguistic behaviour. On the other hand it connotes sociolinguistic laziness.

Borrowing is an important lexical expansion strategy. Resorting to it to resolve some lexical gap does not constitute 'linguistic laziness'. What actually constitutes 'linguistic laziness' is wholesale importation from one language into another without recourse to the grammatical rules of the target language. Resorting to wholesale borrowing may be due to lack of knowledge of the morphological rules of the target language or imperfect knowledge of its lexical resources by the users. To buttress this point of view, kenaf, altrazine, primextra, butylate, kerosene could be adapted into Yorùbá as kènáàfù, atirasín-ìn, pìrìmésírà, bútílétì and karosin/kerosín. Again, kitchen compost, 75 cm, 45 cm, CP 15 could be expressed more effectively in the target language without resorting to borrowing as follows:

kitchen compost – ajílệ eléròjà àjẹkù oúnjẹ (kitchen compost is a manure that is composed of food scraps)

75 cm- esè bàtà méjì àbò (75 cm is equal to 2 <sup>1</sup>/<sub>2</sub> feet)

45 cm- esè bàtà kan àbò (45 cm is equal to 1 ½ feet)

CP 15- èro ìfíko alágbèépòn (CP 15 is a sprayer that is hung to the back)

Finally, target language users' cognition should be immediate and unambiguous within the domain of intended use. A source term in the target language satisfies this requirement if its users can easily link it to or associate it with the source term. An example is alámò that is used to designate bacteria in Fakinlede (2003). It is unlikely that users would quickly link alámò to bacteria as they would for the phonological adapted form bateríà. Again, organic farming is designated as àgbè àdáyébá (Rural

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Development Voice (2009) Vol. 4, No2. p.5). A mature speaker of the language intuitively knows that organic does mean àdávébá (lit. old, antiquity) and farming does not mean agbe in Yorubá. Based on that cognition, it is very unlikely that he would see organic farming and agbe àdáyébá as linguistic equivalents. Again, if organic farming is denoted as àgbè àdáyébá in Yorùbá, the question to ask is "would its paradigmatic related forms such as organic food or organic fruit be acceptable to be designated in Yorùbá as oúnjé àdáyébá and èso àdáyébá respectively? From information gathered from Srivastava (2007) and discussion with domain experts, organic farming is a type of farming that relies on natural process for conditioning of soil and protection of crops (see also 11th definition of organic in dictionary.com). Given that description, and to ensure consistency of meaning with other terms that are paradigmatically related to it, it is cognitively apt to designate organic farming in Yoruba as isè àgbè asàmúlò èròjà àìfikémíkà se (lit. work of farmer that does not make use of inputs made of chemical). In the same way organic food or organic fruit could be designated as oúnje àlfèròjà oníkémíkà pèsè and èso àlfèròjà oníkémíkà pèsè respectively. The truth of the matter is that both organic and inorganic matters are made up of chemical components. However, the chemical component is unmarked in the linguistic cognition of the native speakers for organic elements.

What should be done

Given the importance of agriculture to the economic development of the nation and the welfare of its major stakeholders, stakeholders should have relevant linguistic ability to disseminate and acquire relevant agricultural information. This is only possible when modern agriculture concepts are made available in the indigenous languages. With the poor state of localization of terminology in the domain of agriculture, efforts need to be made to devise target language terms that express the sense of source language. This of course would require the term creator to with collaborate domain professionals and experienced linguists/terminologists. The roles of these experts cannot be

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overemphasized. First, the expertise of the domain collaborators will be useful especially in the following areas:

- providing information on conceptual knowledge in the field of agriculture and resolving specific questions;

- formulating definitions of agricultural terms;
- isolating characteristics of concepts;
- checking the validity of subject classification;
- ensuring completeness of coverage of concept characteristics;
- providing terms they thought needed to be included in the work.

Second, the experienced linguists/terminologists will be useful in contributing generic and language specific knowledge, verifying terminological information and technical accuracy.

5. Conclusion

This study investigated designations of modern agriculture concepts in existing literatures in Yorùbá. Findings show that some of the existing terms fall short of acceptable concept-term connection standards and as such are not adequate for the dissemination and acquisition of relevant information required for the development of the agricultural sector by the stakeholders. The study calls for efforts by government to encourage and fund research aimed at expanding the vocabularies of the indigenous languages in various domains of activity to enable the rural populace have access to information in these domains. For success to be achieved in that endeavour, indigenous language users, especially parents should ensure that they pass on their languages to their children. In the words of Bellour (2021), "parents' transmission of the survival of this language.

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