

Sustainable Agricultural Extension Education for Oil and Gas Producing Communities In Imo State, Nigeria

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Abstract: Imo State, an Oil producing state in Nigeria is bedeviled with incidences of environmental degradation that caused low food production. Oil and Gas producing communities are restive, resulting to conflicts and kidnaps. Oil and gas multinationals introduced agricultural extension services to educate farmers while Agricultural Development Programmes also embark on same. Smallholder farming system affected extension teaching methods of Private and Public sector extensions. The farmers got confused due to mixed extension education techniques. Objective(s): To: streamline extension education system to enhance farmer participation; Develop synergistic system where Private and Public sector extension interact before educating farmers; Develop indigenouse agricultural extension system that would consider peculiarities of Nigerian Niger Delta region. Data were collected through semi structured interviews, focused group discussion, personal observations and questionnaire from randomly selected farmers of both sectors and extension officers. Simple descriptive statistics and Likert-type scale were used. Results showed Public sector extension without focused educational programmes. Extension agents of Public sector capitalized on non-functional system to abandon education for Private sector extension that linked extension to oil and gas production. Results revealed most farmers in oil producing communities taking extension as right and could not account for inputs under REFILS. Subject Matter Specialists became money conscious and leaving farmers' problems unattended. Agricultural Extension sustainability indices of Acceptability, Functionality, Operability and Durability (AFOD) were developed. There is need for a unified Extension Education curriculum to be developed. Extension Education should be subjected to Sustainability test of AFOD. Concluded that Extension systems should be complementary.

Keywords: Agriculture, Agricultural Extension, Sustainability, AFOD, Public and Private Sector Extension.

Introduction

The Oil and Gas rich Deltaic region of Nigeria is made up of 9 states namely, Bayelsa, Rivers, Abia, Cross River, Akwa Ibom, Delta, Edo, Imo and Ondo. While the region is centred within the Niger Delta River, Imo and Abia are majorly on a larger land mass hence agriculture is mainly their main stay. The staple foods in these states are mostly cassava, yam, cocoyam and plantain inclusive. Little fishing activities are carried out in Imo and Abia States of the Niger Delta region of Nigeria. Youths' restiveness has been on its peak resulting to cult activities, terrorism, armed robbery, kidnapping among other known social vices. Surprisingly, the communities within these oil and gas producing regions live in abject poverty as recommended by United Nations with little or no amenities like sustainable power / energy, portable water, good road network and good health care delivery system. The agitation for resource mismanagement got to the climax when the youths from the Niger Delta during one of the country's political era were invited to the country's capital, Abuja to support the campaign of a Presidential candidate. It was clear then that the wealth generate by the Niger Delta was used for the development of another region, leaving its people to wallow in abject poverty.

The youths descended on the oil and gas installations of the multinationals, accusing them of master minding their deprivation of developmental initiatives while allowing them to wallow in abject poverty. Majorly among the accusation is deliberate depletion of soil nutrients due to oil and gas exploration and production activities that that

resulted to low yield. The Oil and Gas multinationals especially, the majors (Shell Petroleum Development Company – SPDC, Total Exploration and Production Nigeria Limited – TEPNG and Nigerian Agip Oil Company – NAOC) decided to adopt deliberate interventions to change the mindset of the community members, especially, the Youths. Since agriculture is the main stay of the people in Imo and Abia states, the multinationals employed the services of Agricultural Extension Officers to provide Extension Services with emphasizes on sector Extension Education that represents the PRIVATE Sector Extension. Traditionally, the PUBLIC sector is driven by the Federal Government of Nigeria through the Agricultural Development Programme (ADP) that educates farmers about innovative agricultural practices with the sole aim of improved standard of living through increased yield and best practice in agronomic practices.

On the other hand, the oil and gas multinationals targeted mindset change with emphasis on Extension Education, Agbamu 2005. To a greater extent, their extension staff had good salary package, Welfare and Logistics. Unfortunately, the Extension officers from both sectors talked to same farmers' groups / individuals as clientele or target group. The Private sector Extension officers patiently spent more time during frequent visits and established Small Plot Adoption Trials (SPATs) and Demonstration plots to drive home their extension messages in addition to excursions to agricultural training institutes and Research centres like International Institute for Tropical Agriculture (IITA) and National Crop Research Institute (NCRI) respectively. In this regard, they developed focused extension messages with practical connotations while the Public sector bedeviled with lack of logistics, bureaucracies and poor welfare services usually make “dash-in” visits to the farmers without concise extension programme. They totally depended on the private sector extension. Unfortunately, they tried to stick to “unfocused extension messages for the farmers that nearly created conflict situation and seeming confusion among the farmers. Extension Education was adulterated or rather slaughtered on the altar of supremacy amongst Public and Private sector extension systems. To restore normalcy in the Extension Education and develop a strategy that could accommodate both sector extension services, this research work was conducted to address the gap created by this conflict situation in Extension Education Practices of Public and Private sectors extension systems.

Objectives

The general objective of this research work was to develop a robust agricultural extension education strategy that would be clientele friendly without the seeming disparity in content and context of messages. Specifically, the objectives were to;

1. Streamline Extension Education system to enhance farmers' participation
2. Create a platform for synergy between Public and Private sector Extension Officers before meeting clientele
3. Identify enablers of Extension Education that could be leveraged by both extension systems
4. Identify indigenous extension education system that could address the peculiarities of the Oil and Gas rich Niger Delta region of Nigeria.
5. Develop Extension Education Sustainability Index (EESI) for Quality Control in Educating the Farmers.

Methodology

Imo State was created in the year 1976 during the political balkanization of boundaries in Nigeria. In a total of 27 LGAs, only 2 (Oguta and Ohaji, Egbema) are within the Oil and Gas producers of the State. However, this structural arrangement has its own impediments towards people-oriented development. This assertion is not covered in the scope of this work and should be left in abeyance for another research work.

The two LGAs are agrarian as stated earlier and mostly depend on rain-fed agriculture. The water-table within this area is capable of sustaining farming even during draught. To this effect, a total of 200 tuber crop farmers was selected for the study; a hundred each from the two LGAs. Fortunately, these farmers were served by both Public and Private sector extension officers, what I referred to as Guided Extension. Data were collected using Focused Group Discussion (FGD). In this case, the facilitators will always amplify consciously the low voices in the group to establish some developmental points, Semi Structured Interviews (SSI), questionnaires and Personal Observations occasioned by personal experience. Analytical tools used were simple descriptive statistics and Likert-type scale.

Result and Discussions

4.1 Understanding Agricultural Extension Messages (Content / Context) and Test Run before Educating Farmers.

Table 1 Farmers perception on understanding / Test run of Extension Education packages by Extension officers

Ext Type	Sector	Clarity of message content context (Yes)	Ext in and No	Test Run (Demo of Ext Education before Delivery) (Yes)	No	Av % Yes	Av % No
Public Sector Ext Officer		30 (30%)	70 (70%)	10 (10%)	90 (90%)	40 (20%)	160 (80%)
Private Sector Ext Officer		80 (80%)	20 (20%)	85 (85%)	15 (15%)	165 (83%)	35 (17%)

Source: Field data 2014

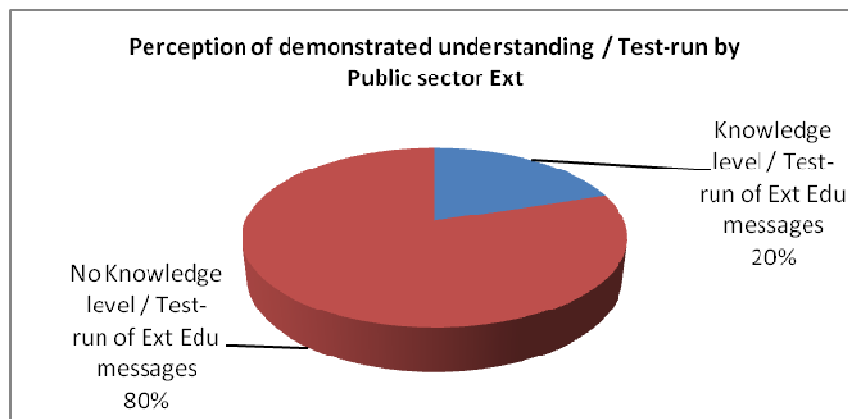


Fig1a. Farmers’ perception of knowledge level/Test-run of Ext Education messages by Public sector Ext

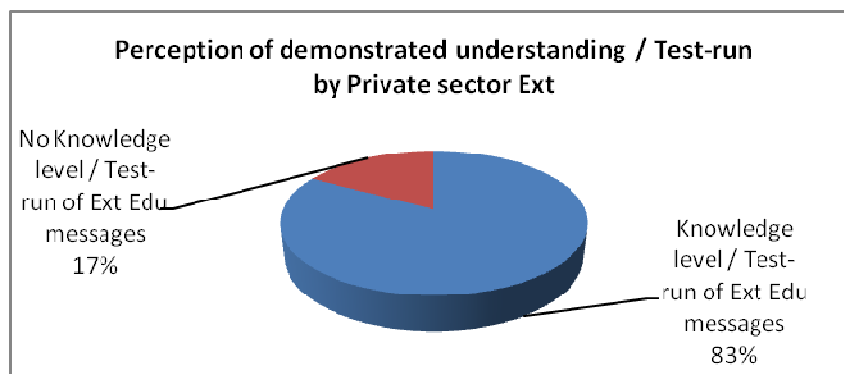


Fig1b. Farmers’ perception of knowledge level/Test-run of Ext Education messages by Private Sector Ext

According to Ani 2013, Ogueri 2010 and Asiabaka 2002, understanding people (clientele) is the first priority of Extension Education. As shown in table 1 above, a total of 70% of farmers of the public sector extension do not have clarity of the content/context of educational message to the farmers. Similarly, 90% of extension officers have

never tested their technology before deployment to farmers through education. This could be as a result of non commitment occasioned by poor / weak welfare services deployed by the public sector extension.

On the other hand, 80% and 85% of the private sector extension respectively had clarity of extension educational message and also tested innovations before deployment through informal extension educational process. Averagely, 80% of the public sector extension is ignorant of extension education messages and test run before deployment against private sector's 17%. It appeared the public sector depended on the private sector in the delivery of its extension education messages. Consequently, it appeared also that the public sector extension officers had no focused extension education programmes unlike their counterparts in the private sector.

4.2 Indicator of Farmers' Understanding of Extension Education Packages from Extension Officers

Table 2. Frequency of visits to Farmers' Farms

Extension Sector	Education	Frequency of visits per month	Frequency of 2 visits per month	Frequency of 1 visit per month	Frequency of No visit per month	Total
Public Sector Extension		5 (5%)	30 (30%)	65 (65%)		100 (100%)
Private Sector Extension		80 (80%)	17 (17%)	3 (3%)		100 (100%)

Source: Field data 2014

As indicated in table 2 above, only 5% of the public sector extension achieved the target of 2 No extension education visits per month while the private sector recorded 80%. In contrast, 65% of the respondents insisted that public sector extension officers did not make any monthly visit as against 3% of the private sector extension. The reasons adduced to this was as a result of unavailability of logistics to the public sector extension hence they seem to have depended on the private sector extension and relied on inputs there-from.

4.3. Joint Monthly Technology Review Meeting (MTRM) to Strengthen Extension Education

Table 3. Attendance of Joint MTRM by Public and Private sector Extension

Attendance of Joint extension sector in the last	by both Frequency	Percentages
Yes	30	15
No	170	85
Total	200	100

Source: Field data 2014

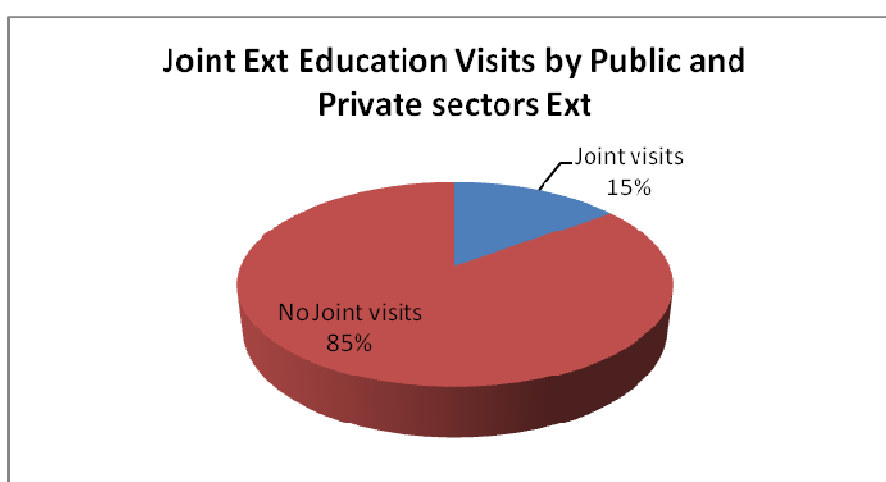


Fig 2: Joint visits for Effective Extension Education

Joint Monthly Technology Review Meeting (JMTRM) is a monthly training forum for professionals including the subject matter specialists (SMS) to update their knowledge in various aspects of Extension Education subject matter. Challenges are tabled, analysed, discussed and solutions proffered by the SMS. In table 3 above, a total of 30 (15%) of the respondents agreed knowledge of such meetings. This was corroborated by the public and private sector extension officers during the Focused Group Discussion (FGD). The implication of this was a clear absence of synergy by the public and private sector extension officers before educating farmers. There seemed to be internal competition instead of complementation which made extension education unhealthy services in the Nigerian Niger Delta region. Absence of synergy amongst development actors have been identified as major impediments to sustainable rural development in Nigeria (Adesope, et al 2012, Ogueri, 2012, Ogueri and Nnadi, 2010, Ogueri, Asiabaka, 2002, Ukpongson and Onu 1998.

4.4 Sustainability of Extension Education

Table 4. Enablers of Extension Education

S/N	Enablers of Extension Education	Very Satisfactory (VS)	Satisfactory (S)	Moderately Satisfactory (MS)	Low Satisfactory (LS)	None Satisfactory (NS)
1	Knowledge of subject matter	150 (75%)	30 (15%)	10 (5%)	5 (3%)	5 (3%)
2	Demonstration of Topic	20 (10%)	42 (21%)	88 (44%)	28 (14%)	22 (11%)
3	Frequency of Visit	165(83%)***	20 (10%)	10 (5%)	5 (3%)	0 (0%)
4	Willingness to learn by farmers	-(0%)	2 (1%)	5 (3%)	183 (92%)	10 (5%)
5	Access to Land	1 (0.5%)	2 (1%)	10 (5%)	20 (10%)	167 (84%)
6	Access to Credit	7 (3.5%)	6 (3%)	10 (5%)	147 (74%)	30 (15%)
7	Access to Market	155 (78%)**	14 (7%)	20 (10%)	5 (3%)	6 (3%)
8	Input Availability / Timeliness	125 (63%)*	54 (27%)	20 (10%)	1 (1%)	0 (0%)
9	Acceptability of innovations	100 (50%)	60 (30%)	30 (15%)	10 (5%)	10 (5%)
10	Functionality of Intervention	175(88%)**** *	20 (10%)	3 (2%)	2 (1%)	0 (0%)
11	Capacity to operate techniques taught to farmers.	45 (23%)	50 (25%)	10 (5%)	50 (25%)	45 (23%)
12	Diffusion of Innovations taught to farmers	170 (85%)****	20 (10%)	5 (3%)	5 (3%)	0 (0%)
13	Examinations of farmers.	-(0%)	5 (3%)	5 (3%)	10 (5%)	180 (90%)

Source: Field data 2014

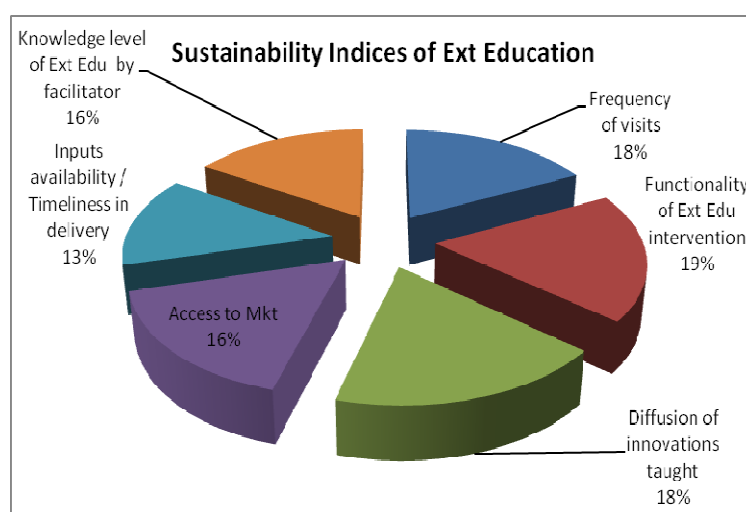


Fig 3: Sustainability Indices of Extension Education

The 5-point Likert-type scale in table 4 itemized thirteen (13) enablers of extension education which by implication should drive SUSTAINABILITY of Extension Education based on Acceptability, Functionality, Operability and Durability (AFOD), Ogueri and Nnadi 2010. It was deduced that the enablers with highest percentage scores in very satisfactory category should weigh greater influence with regard to sustainability against the enablers with the least scores in the same category.

Therefore, the table above revealed that the most important enablers of Extension Education were;

- Functionality of Interventions (88%)
- Diffusion of Innovations taught to farmers (85%)
- Frequency of visits to farmers farms (83%)
- Access to Markets (to ensure income generation) 78%
- Knowledge of subject matter by Extension Officers (75%)
- Input availability / Timeliness in supply (63%) and
- Acceptability of Innovations (50%)

Surprisingly, one would have thought that acceptability of innovations / interventions would have had the highest weight as it does with rural development interventions (Ogueri 2012) to enhance ownership. Reverse is the case apparently because facilitators of Extension Education programmes MUST demonstrate mastery of subject matter and ability to communicate to the understanding of the rural farmers before acceptability should be considered. Therefore, the communication ability of the Extension officers both for the public or private sectors is sine qua nun to educational transformation.

Therefore, Sustainability Of Extension Education is dependent on Functionality of interventions, Diffusion of innovations, Frequency of visits, Access to Markets and Educators knowledge of subject matter.

Conversely, least enablers of extension education were majorly examination of farmers (90%) and access to land 84%. It therefore means that extension education can be effective without the above mentioned 2 enablers. It could be that there are close substitutes or alternatives or that these enablers could be ignored without any effect on extension education.

Indigenous Components of Extension Education System for the Niger Delta Farmers

During the Focused Group Discussion (FGD) amongst various stakeholders of Extension Education in the Niger Delta region of Nigeria, namely – Public sector extension officers, Private sector extension officers and the farmers (recipients) of innovations / intervention, the indigenous components that could assist effective extension education in the Niger Delta were deduced as follows;

- Establish local timing to enhance attendance of educational programmes / on-farm classes through the use of local tidal gauge
- De-emphasize financial gains as such comparison always prompt agitations because of oil and gas contractors
- Re-design extension education curriculum to include oil and gas politics education
- Extension officers in the Niger Delta region will need to be tutored on the relationship between oil and gas exploration and production facilities especially the sub-surface and surface facilities engineering activities before they could educate the farmers.
- Extension officers in the Niger Delta environment must be above average in intelligence and should have good command of oratory to convince their clientele.
- Extension education of the Niger Delta farmers must be skewed to target youths with a blend of recreation in order to reduce incidences of cultism, kidnapping, sea piracy, rape and other social vices raging high in the region.

Conclusion and Recommendations

The foregoing has exposed seeming laxity amongst public sector extension officers due to over dependency on the private sector extension system. It was discovered that the beneficiaries of extension education often take things for granted especially when interventions were from the private extension system. This may not be unconnected with the notion of multinationals exploring and exploiting hydrocarbons that seemingly belonged to the indigenes of the areas. Unfortunately, indigenous people always claim ownership of hydrocarbon sub-surface deposits regardless the sub-surface structural formations and deposit and movements of hydrocarbons. This situation may be affecting agricultural extension delivery system in the oil and gas producing communities in Nigeria; Ani, et al 2015, Uzoho, et al 2015, Ogueri 2012, Ogueri, Nwachukwu and Unnama, 2010, Ukpongson and Asiabaka, 2000, Ukpongson and

Onu 1998,. To this effect, there had being a general feelings that every intervention as a result of extension education was a form of compensation to farmers in the oil and gas producing communities in Nigeria. The Public and Private sectors extension should be complementing each other instead of competition in order to deliver Sustainable extension education as identified.

This study concluded therefore that Sustainable Extension Education is a sine qua non to farmers' change of attitude towards adoption and diffusion of innovations. Such attitudinal change will lead to increased production and *ceteris paribus*, to increased farm income. It is against this background that extension education could be made a high school curriculum in Nigeria.

The following recommendations were rather inevitable to move extension education to the next level.

- ❖ Public and Private sectors extension should develop and operationalize common curriculum of extension education
- ❖ To enhance effectiveness of extension education, both extension sectors should conduct Joint Monthly Technology Review Meeting (JMTRM) before reaching out to their clientele.
- ❖ Every Extension Education process should be subjected to SUSTAINABILITY test as identified in this study, namely;
 - Functionality and Diffusion of innovations (products of extension education)
 - Frequency of visits to the clientele's farms
 - Access to markets to avoid wastages and lowered farm income
 - Knowledge of Subject Matter by facilitators of extension education and
 - Inputs availability / Timeliness in delivery to users

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