

FACTORS PROMOTING AGRICULTURAL RESEARCH IN NIGERIA UNIVERSITIES

Jibril Attahiru Alhassan

Abstract

The purpose of the study is to determine the factors promoting agricultural research in Nigerian universities. Stratified sampling technique was used to select respondents from two federal universities in each of the six geo-political zones of Nigeria, thus a total of twelve federal universities were used for the study with 471 of the total of academic staff in faculties/schools of agriculture in the twelve universities sampled. A set of structured questionnaire was developed and used to collect data for the study. Data collected were analyzed using, mean and standard deviation. Major findings of the study showed that funding, collaboration and ICT promote agricultural research in Nigerian universities. The study also found that agricultural sciences research is not well funded in Nigerian federal universities as lecturers do not benefit from either university funded research nor government or agency funded research. Collaborative research is more prevalent within the country than across borders. Furthermore, agricultural research for various disciplines lack national coordination in Nigeria. The study recommended adequate funding of agricultural research by universities and government in Nigeria.

Keywords: Agriculture, Research, ICT, Nigeria

Introduction

Agricultural research is about the oldest in Nigeria and is still a leading field of research in the country both in the agric research institutes and the universities. However, research regardless of whether it is of agriculture or other fields requires financing to promote it. The importance of funding for agricultural research is so immense that many scholars have dwelt on the state of agricultural research financing over the years. Government and international organizations or agencies fund agricultural research in many developing countries. According to Beintema&Stads (2004) donor contributions (including World Bank loans) accounted for an average of 35% of funding to principal agricultural research agencies in 2000. Beintema& Mohammed (2006) affirmed that there is perpetual under-investment in public agricultural research in developing countries as such; policymakers and development assistance agencies must find “alternative institutional mechanisms for sustained financing of agricultural research for development. Some of such alternative mechanisms they said have been tried in many countries since the mid 1980s. They include: joint public-private sector ventures, sale of research products, competitive funds, research foundations, farmer managed levies on production, and greater involvement of universities and private sector research.

Other factors that can promote agricultural research are collaboration and coordination of research as well as ICT. As reported by Agbam, (2000) five regional coordinating research institutes (operating under the National Agricultural Research Project) oversee the research needs and coordinate farming system research activities in each ecological region of Nigeria. Furthermore, the Agricultural Coordinating Unit works with collaborating institutions (research institutes, universities, and ADPs) in coordinating linkage activities. In Mexico university-based National Agriculture, Livestock and Forestry Research Institute (INIFAP) is the key organization in the promotion of research-extension linkages at national level.

Information and Communication Technology (ICT) is a merger of computing telecommunication technologies for information acquisition, storage, retrieval and dissemination. ICT has become a global tool often used by individuals, organizations, governments and intergovernmental organizations for personal or official activities. Its application cut across all fields of human endeavour like medicine, commerce, engineering, architecture, education, library services and agriculture. In the academia, it has become a major tool for research especially the internet and its accomplishing facilities such as the World Wide Web (WWW). The potentials of Information Technologies (IT) through such tools as the Internet and the various online databases in providing access to enormous quantities of information. This therefore, makes it dependable tool for scientific research.

Scientific research is of immense benefit to humanity in all fields; agricultural science research is of immeasurable importance to all nations world, because research is required to meet the food and economic requirements of the world populace, as well as preserve the natural resources. This is particularly important to developing countries like Nigeria where majority of the population live in rural areas where their main occupation revolve around agriculture.

In spite of the 22 agricultural research institutes and 21 universities running agricultural sciences and carrying out agricultural research in Nigeria, the food situation in the country and the economy of the rural farmer has not changed for better (Beintema & Ayoola, 2004) It is against this backdrop that this investigates the factors promoting agricultural research in Nigerian universities.

Objectives of the Study

The study is aimed at Identifying:

- State of funding of agricultural research in Nigerian universities
- Level of collaboration in agricultural research in Nigerian universities
- Impact of ICT on the promotion of agricultural research in Nigerian universities

Literature Review

Government funds agricultural research in many countries especially developing countries. An FAO document stated that there is a range of reasons for government intervention in the provision of agricultural research services. This is particularly the case in low income, small countries where economies of size combined with low effective demand may make private sector provision unprofitable. In all countries, the public sector is likely to continue to play a significant role in the provision of basic research. In larger countries, it is more feasible to deconcentrate public service research provision. This has the advantage that it may make the research more relevant to local people's needs but this will only occur if mechanisms are found for local farmers to participate in setting the research agenda. Moreover, de-concentration *per se* does nothing to foster competition between different potential providers of research services.

Beintema and Ayoola (2004), reported that there are 22 government agencies involved in agricultural research in Nigeria. Accounting for about two-thirds of the country's total researchers and spending. They stated further that a significant number of higher education agencies conduct agricultural research but many have only limited capacity. 59 higher education agencies conducting agricultural or agriculture-related research identified, encompassing agricultural universities, schools, faculties, institutes, and departments. The faculties of agriculture and veterinary medicine under the four older universities-AhmaduBello University, the University of Ibadan, the University of Nigeria, and ObafemiAwolowo University-are the primary higher-education agencies involved in agricultural research.

In Ghana, Stads and Gogo (2004).reported that Agricultural research financing and expenditure growth in Ghana stagnated during the 1990s, although the number of researchers gradually increased. The agricultural research agencies of the Council for Scientific and Industrial Research (CSIR) accounted for about two-thirds of Ghana's total spending and research staff in 2001. Although the government legislated that by 2001 CSIR agencies should derive 30 percent of their budget from private sources, only the Oil Palm Research Institute (OPRI) reached this

goal. Socially oriented agencies under CSIR are significantly less well-placed to generate their own funds than the more commercially oriented agencies. Government and donor contributions remain the primary sources of funding for agricultural research in Ghana while Private-sector involvement in agricultural research is minimal. Most of Ghana's agricultural research are conducted at Ghana's five main universities: the University of Ghana (UG), the Kwame Nkrumah University of Science and Technology (KNUST), the University of Cape Coast (UCC), the University of Development Studies (UDS), and the University College of Education of Winneba (UCEW) (Stads&Goso, 2003)

In South Africa, Liebenberg, Beintema and Kirsten (2004), reported that agricultural research in South Africa is far better funded than most-if not all-Sub-Saharan African countries, given it one of the highest spending per scientist and intensity ratios in the region. The Agricultural Research Council (ARC) is by far the largest provider of agricultural research in South Africa, being responsible for more than 60 percent of the country's agricultural research expenditure and staff. Since 1997, government funding to ARC has begun to contract, and total research staff numbers have decreased by one-third. Although private-sector involvement in agricultural R&D is minimal; its share of 3 percent of South African total agricultural research expenditure and staff is high, compared to other African countries. Since the late 1990s, the universities have become more involved in applied research because of the dwindling research capacity in the public sector.

Research Methods

Descriptive survey design was used for the study; the population of this study comprised the academic staff in the faculties/schools of agriculture in the twenty-one federal government owned universities in Nigeria that run courses in agricultural sciences. This stood at 1,927 as at 2008/2009 academic session. The sample of the study was made up of 471 lecturers in faculties/schools of agriculture mentioned. The proportionate stratified random sampling technique was first used to select twelve federal universities, two from each of the six geo-political zones. In each of the twelve universities selected, 40% of the lecturers were sampled to ensure that sufficient respondents were obtained for the study and to cater for the heterogeneous nature of respondents. The questionnaire was used to collect data. Data was analyzed using mean & standard deviation.

Findings and Discussion

Table 1:

Mean ratings and standard deviations of respondents on funding as a factor promoting agricultural research in Nigerian federal universities

S/N	Items on factors promoting agricultural research	\bar{X}	SD	Decision
1	Your agricultural research is regularly funded	1.88	.95	Disagree
2	You have benefited from industry or agency sponsored research	1.89	1.00	Disagree
3	You benefit from your university research grant	2.27	1.08	Disagree
4	You are motivated to do research when it is funded	3.25	.89	Agree

Results in Table 1 indicate that the responses of respondents varied on the factors promoting agricultural research. They disagreed with items 1, 2, and 3 on funding and availability of funding for research. Item 1 with a mean of 1.88 indicate a disagreement that research is regularly funded; item 2 has a mean of 1.89 also showing a disagreement that they have benefited from industry or agency sponsored research; while item 3 indicates disagreement that they have benefited from university research grant. Respondents agreed with item 4 (mean, 3.25) that funding motivate them to carry out research.

Table 2:

Mean ratings and standard deviations of respondents on collaboration as factor promoting agricultural research in Nigerian federal universities

S/N	Items on factors promoting agricultural research	\bar{X}	SD	Decision
1	Collaborative research with colleagues in your university help promote research	3.13	.81	Agree
2	Collaborative research with colleagues in other universities in Nigeria promote research	2.76	.89	Agree
3	Collaboration with colleagues in other countries promote agricultural research in Nigeria	2.35	.98	Disagree
4	Some of your previous researches were done on collaborative basis	2.85	.87	Agree
5	There is a national coordination for research in your discipline and this promotes research	2.47	.97	Disagree

From the table above, there is agreement with collaborative research as means of promoting agricultural research as indicated by responses in items 1,2, and 4. In item 1, a mean of 3.13 shows agreement that collaborative research with colleagues in the same university help promote research, item 2 (mean, 2.76) indicated that Collaborative research with colleagues in other universities in Nigeria promotes research and item 4 (mean, 2.85) also indicated agreement that Some of respondents previous researches were done on collaborative basis. Respondents however, disagree with item 3 (mean, 2.35) that there is collaboration with colleagues in other countries. Respondents also disagreed with item 5 (mean, 2.49) that there is national coordination for agricultural research in the various disciplines of agriculture. There is also close range of standard deviation scores indicating close agreement in respondents' opinions.

Table 3:

Mean ratings and standard deviations of respondents on ICT as a factor promoting agricultural research in Nigerian universities.

S/N	Items on ICT use to promote agricultural research	\bar{X}	SD	Decision
1	Literature search is made easier for you with the internet	3.40	.81	Agree
2	You have been able to open new areas of research due to internet use	3.07	.86	Agree
3	You now have a wider access to foreign journals as a result of internet use	3.57	.70	Strongly agree
4	You send your questionnaires on-line using e-mail	2.18	1.05	Disagree
5	You receive your completed questionnaire online by e-mail	2.18	1.05	Disagree
6	You now send your papers by e-mail to editors for publication in journals	3.33	.79	Agree
7	You now register for variety of research information in your e-mail box	3.12	.83	Agree
8	You now receive variety of research information in your e-mail box	3.16	.78	Agree
9	You share information with colleagues through e-mail	3.23	.74	Agree
10	Analysis and interpretations of your data is made easier with the computer	3.50	.70	Strongly agree

11	The graphical presentations in your research publications are of higher quality using computers	3.36	.76	Agree
12	Your journal publications have improved tremendously since you started using computers	3.08	.84	Agree
13	You find enough research information in electronic resources	3.17	.76	Agree
14	You now read journals on-line	2.84	.90	Agree
15	Your reference queries are answered electronically	2.40	1.07	Disagree
16	You now experience less errors in your research papers due to ICT use	3.38	.74	Agree

Results in Table 3 indicate that respondents have varied opinions about the benefits of ICT to agricultural research. In item 1 (mean, 3.40) they agreed that literature search is made easier with the internet, in item 2 (mean, 3.07) they agreed that they have been able to open new areas of research due to internet use, and in item 3 (mean, 3.57), they agreed with access to foreign journals. In item 4 (mean, 2.22) they disagreed that they send their questionnaire online and item 5 (mean, 2.18) they disagreed that they receive completed questionnaire online. The table further indicated that respondents also agreed with items on benefits derived from e-mail use in items 6,7,8, and 9. In item 6 (mean, 3.33) they agreed that they are now able to send papers to editors for publication by e-mail, in item 7 (mean, 3.12) they are able to register for variety of research information in e-mail box, in item 8 (mean, 3.16) they agreed that they receive variety of research information in e-mail box, and in item 9 (mean, 3.23) they agreed that they share information with colleagues through e-mail. In item 10 (mean. 3.50) respondents agreed that analysis and interpretation of data is made easier with the computer, in item 11 (mean, 3.36) they agreed that the graphical presentations in research publications are of higher quality using computers and item 12 (mean, 3.08) indicated agreement that journal publications of respondents have improved tremendously since they started using agricultural databases. Item 13(mean, 3.18) they agreed that they find enough research information in electronic resources and in item 14 (mean, 2.84) they agreed that they now read journals on-line. In item 15 (mean, 2.40) respondents disagreed that they now enjoy electronic reference service, while item 16 (mean, 3.38) shows agreement that respondents now experience less errors in research papers due to ICT use.

The study found out factors promoting agricultural research by lecturers in Nigerian federal universities. Findings of the study showed that funding is the major motivation to carry out research by academic staff. This collaborates Wood's (1990) finding that one of the factors influencing research performance of university academic staff is dependence on funding. However, most lecturers do not benefit from research fund either from their universities or other agencies which shows an agreement with Ugwuanyi (2005) that most researches undertaken by academic staff in biological sciences are self-sponsored.

Ugwuanyi (2005), findings also indicated that collaborative research promotes agricultural research among Nigerian academics, however their collaboration from findings is within the shores of Nigeria thereby negating the UNESCO reports (2003), that lecturers are able to break away from professional isolation, with ICTs they can easily connect with lecturers from other countries. The study further found that the use of ICT accelerates agricultural research in Nigerian universities. Further findings showed lack of national coordination for agricultural research in the various disciplines of agriculture. This agrees with findings of Beintema and Ayoola (2004), that Nigerian agricultural research is characterized by institutional instability, funding uncertainty, and limited coordination and planning.

Conclusion and Recommendations

Based on the findings, the study concludes that agricultural sciences research are not well funded in Nigerian universities as lecturers do not benefit from either university funded research nor government or agency funded research. It also concludes that if funds are made available research will be accelerated in Nigerian universities. The use of ICT and collaboration also promote agricultural research in Nigerian universities. Based on the findings of the study and conclusions reached, the following recommendations are made:

- There should be coordinating bodies for research in various disciplines of agriculture to promote research activities in Nigeria
- Government, universities and agencies should make fund available for agricultural research.

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Jibril Attahiru Alhassan is a Lecturer in the Department of Library and Information Technology Federal University of Technology, Minna, Nigeria.

