Direct Research Journal of Agriculture and Food Science

Vol. 12(3), Pp. 149-153, December 2024,

https://journals.directresearchpublisher.org/index.php/drjafs

Research Article
ISSN: 2354-4147

Analysis of Role of Rubber Research Institute of Nigeria Extension Services in Agricultural Technologies Transfer in Iguoriakhi Farm Settlement, Edo State, Nigeria

[1]Musa, S. O., [2]Anegbeh, P. O., [1]Balogun, F. E., [1]Imarhiagbe, P., [1]Nwachukwu, S., [3]Aghedo, S. O., [3]Momoh, R. L., and [3]Igbako, P. O.

[1]Extension Division, Rubber Research Institute of Nigeria.
[2]Research Outreach Department, Rubber Research Institute of Nigeria.
[3]Research Operations Department, Rubber Research Institute of Nigeria.
Corresponding author email: paul_anegbeh@yahoo.com

ABSTRACT

Most countries in the World deliver some type of extension services to help rural farmers increase agricultural productivity. Despite these services, increased agricultural productivity has not been fully achieved due to ineffective dissemination of technologies and lack of clarity and knowledge of the role of agricultural extension worker in the transfer of agricultural technologies. The study assessed the role of Rubber Research Institute of Nigeria (RRIN) extension services in agricultural technologies transfer in Iguoriakhi farm settlement. Simple random sampling was used to select 95 rubber farmers from the list of rubber farmers in the farm settlement. Data were collected using structured interview schedule. Data were analyzed using mean and standard deviation. Result shows that RRIN extension services transfer Knowledge and skill ($\bar{X}$= 2. 84), offers advisory services ($\bar{X}$= 3.04), and provide feedback to research ($\bar{X}$=3.04). Also, farmer perceived that RRIN extension services had positive impact ($\bar{X}$= 2. 95) on their crop productivity. Regular training workshops, frequent contact with famers and provision of adequate mobility to extension workers were recommended to enhance effectiveness and wider coverage of RRIN extension services.

Keywords: *Extension workers, Technology transfer, Agricultural productivity.*

Article information
Received 10 October 2024;
Accepted 20 November 2024;
Published 9 December 2024
DOI: https://doi.org/10.26765/DRJAFS23456798

Citation: Musa, S. O., Anegbeh, P. O., Balogun, F. E., Imarhiagbe, P., Nwachukwu, S., Aghedo, S. O., Momoh, R. L., and Igbako, P. O. (2024). Analysis of Role of Rubber Research Institute of Nigeria Extension Services in Agricultural Technologies Transfer in Iguoriakhi Farm Settlement, Edo State, Nigeria. Direct Research Journal of Agriculture and Food Science: Vol. 12(3), Pp. 149-153. This article is published under the terms of the Creative Commons Attribution License 4.0.

INTRODUCTION

The economies of most developing countries depend on rural based small-scale agriculture. The agricultural productivity is not increasing as expected, thus resulting to household food insecurity, malnutrition and poverty. In order to advance agricultural productivity, most countries in the World including Nigeria deliver some type of extens--ion services to help rural farmers. Extension has been defined in many different ways with all definitions emphasizing an educational dimension. Maunder (2013) defines agricultural extension as "a service or system which assists farmers, through educational procedures, in improving farming methods and techniques , increasing production efficiency and income, bettering their standard of living and lifting social and educational standards" Russell (2016) defines extension service concept as "the provision of knowledge and skills necessary for farmers to

be able to adopt and apply more efficient crop and animal production methods to improve their productivity and living standards". Oakley and Garforth (2015) stated that agricultural extension offers technical advice on agriculture to farmers and also supplies them with the necessary input and services to support their agricultural production. In defining agricultural extension, Van den Ban and Hawkins (2016) used five different perspectives to define agricultural extension: transferring knowledge from researchers to farmers; advising farmers in their decision-making; educating farmers to be able to make similar decisions in the future; enabling farmers to clarify their own goals and possibilities and to realize them; and, stimulating desirable agricultural developments.

Extension service is responsible for serving about one billion small scale farmers in the World. Despite these services, increased agricultural productivity has not been fully achieved due to a number of factors, among which are inappropriate and/or ineffective dissemination of technologies and lack of clarity and knowledge of the role of agricultural extension worker in technology transfer. (Aremu *et al*., 2015).

According to Ashcroft *et al*., (2018), the extension machinery though making a valiant effort is not specifically geared to the rapid development of Nigeria's smallholders located in remote areas. For a long time, development of agriculture in developing countries mainly consisted of farmers and communities being told what to do, often by institutions and agents who have not taken sufficient time to understand their real needs and practices (Ashcroft, 2018).

An overall extension services should be based on fundamental extension processes which includes: transfer of knowledge and skill to farmers and their families; provision of advice and information to assist farmers to make decision and generally take action, including information about prices (Omozusi *et al*., 2025), market or availability of credit or inputs, formation of farmers' organization to represent their interest and give them a means of collective action and Link farmers to research by providing feedback to research. When efficiently utilized, extension services led to rapid development of smallholders located in rural areas. Investigating the role of agricultural extension services in agricultural development in Nigeria and various parts of the World and the need for new approaches to promote the transition of new innovations into concrete benefits to poor farmers in developing countries need to be carried out, hence the study aimed at assessing the roles of RRIN extension services in agricultural technologies transfer in Iguoriakhi farm settlement.

Objectives of the Study

The main objective of this study was to examine the roles of RRIN extension services in agricultural technologies transfer in Iguoriakhi farm settlement.

METHODOLOGY

The study was purposively conducted in Iguoriakhi farm settlement in Edo State because of the predominant RRIN extension activities in the farm settlement. Simple random sampling was used to select 95 farmers from the list of rubber farmers in the study area. Data were collected through structured questionnaire. Data obtained were analyzed using descriptive statistic such as mean, frequency, percentage, and standard deviation.

RESULTS

Table 1 shows that 70.53%, which translated to 67 respondents, were male indicating that the males were more represented than females. Thirty-nine (39) respondents representing 41.05% were 40-49 years. This indicates that majority of the respondents fall within this category. Eighty-one (81) respondents, which represent 85.26%, were married and this indicates that the married respondents were more. Fifty (50) respondents representing 52.63% had N.C.E. qualifications, thus indicating that N.C.E qualification was the highest.

Table 2 shows the various services offered to farmers by RRIN extension service. Respondents agreed that RRIN extension services transfer Knowledge and skill to farmers in Iguariakhi farm settlement. The aggregate mean of knowledge is ($\bar{X} = 2.84$), offers advisory services ($\bar{X} = 3.04$). Feedback to research, ($\bar{X} = 3.04$), which implies that RRIN extension services mainly involve knowledge and skills transfer through training workshops, advisory services and provision of feedback to research.

Table 3 shows respondents' perceptions of RRIN extension services on crop production. Respondents accepted that RRIN extension services have been instrumental in skill transfer to farmers, linking research and farmers and have made meaningful impact to agricultural productivity, with the aggregate mean of ($\bar{X} = 2.95$) which is greater than the Criterion Mean, This implies that RRIN Extension service is making a positive impact in agricultural development in the study. Respondents perceived constraint to RRIN extension service is shown in (Table 4) with the aggregate mean of ($\bar{X} = 2.81$).

DISCUSSION

Results shows that the extension division of RRIN was uniquely positioned and it undertook dissemination of proven research technologies developed by RRIN to farm farmers and other rubber users (Anegbeh *et al*., 20017a) thereby contributing positively towards reviving agricultural extension (Naswem and Ejembi, 2017; Mesfin *et al*., 2022). There is need for RRIN to explore areas of strategic collaboration in the dissemination of information, not only on rubber (Agwu, 2006) but also on gum Arabic (*Acacia senegal*) and Tamarind (*Tamarindus indica*) to a wider audience.

Table 1: Demographic characteristics of respondents.

SEX OF RESPONDENTS	FREQUENCY	PERCENTAGE (%)
SEX		
Male	67	70.53
Female	28	29.47
Total	95	100.0
AGE OF RESPONDENTS		
AGE	**FREQUENCY**	**PERCENTAGE (%)**
20—29 years	4	4.21
31-39 years	21	22.11
40-49 years	39	41.05
50 and above years	31	32.63
Total	95	100
MARITAL STATUS		
MARITAL	**FREQUENCY**	**PERCENTAGE (%)**
Single	11	12.68
Married	11	85.26
Widow	1	1.05
Widower	1	1.05
Divorce	1	1.05
Total	98	100.0
EDUCATIONAL QUALIFICATION		
	FREQUENCY	**PERCENTAGE (%)**
N.C. E	50	52.63
B.E. D	1	1.05
B.A. (Ed)	2	2.11
B.Sc. with PGDE	10	27.11
HND	26	3.16
HND with PGDE	1	1.05
B.Sc . (Ed)	1	10.053
M.A. (ED)	1	1.05
Total	95	100

Table 2: Role of RRIN Extension Service in Iguoriakhi Farm Settlement

Knowledge Transfer	**SA4**	**A 3**	**D 2**	**SD 1**	**N**	**X**	**Decision**
Statements							
Participation and empowerment of farmers and communities have been used to transfer research and extension knowledge to farmers by extension Officers.	30	46	15	4	95	3.07	Accept
There is exchange of ideas and knowledge among the farmers and scientists	12	39	25	13	95	2.40	Accept
Mutual trust is built between farmers and extension Officers as a result of continual open communication during knowledge transfer	32	22	27	14	95	2.76	Accept
Forging close collaboration between research institutions, extension agencies, NGOs and farmers has proven to be an important and effective way to develop and spread alternatives to high input approaches.	30	45	15	5	95	3.05	Accept
Developing new and participatory learning processes is a critical part of effective collaborative initiatives through which research and extension knowledge are transferred.	26	45	17	7	95	2.94	Accept
Mean; Criterion mean=2.50, aggregate mean=2.84 (Accept)						2.84	Accept

N=95, Criterion mean =2.05, Aggregate= 3.08 (Accepted)

Table 2: Contd.

Feedback from Farmers to Researchers							
Extension Officers provide feedback from farmers to Researchers on a regular basis.	40	28	12	15	95	2.98	Accept
Research-extension linkages have been impressive between farmers and Researchers.	34	41	16	4	95	3.11	Accept
Extension officers have created a sustainable synergy between farmers and researchers in crop productivity.	38	26	27	4	95	3.03	Accept
Extension officers have identified and organise key linkage activities for farmers to understand how the multi-stage research process is working and to contribute to the improvement of agricultural performance.	39	34	14	8	95	3.08	Accept
Closely linked to the problem of adoption of wrong technological innovations is inadequate extension and public sensitization between farmers and researchers.	32	33	30	8	95	3.02	Accept
Mean						3.04	
Information and Advisory services							
Extension Officers who anticipate diversity among farmers, give different advice to different people, and treat diversity as a resource rather than as a burden.	37	32	16	10	95	3.01	Accept
Agricultural extension service advises farmers regularly in increasing farm produce.	38	40	14	3	95	3.19	Accept
Success of any innovation among the farmers depends on the extent to which extension advice is given to the recipients, and the channels used.	35	30	26	4	95	3.01	Accept
Farmer's exposure to up-to-date extension advice is the key to his efforts in updating knowledge on different agricultural practices and therefore the envisaged increased crop yields.	27	36	21	11	95	2.83	Accept
In areas where the farmers have no other way of obtaining information related to farm management, failure to offer the right ample advice, may keep some farmers at low levels of production through employing traditional methods of crop production.	33	37	26	23	95	3.35	Accept
Mean						3.08	Accept

Table 3: Respondents' perceptions of Impact of RRIN Extension Service

Statements	**SA4**	**A 3**	**D 2**	**SD1**	**N 95**	**X**	**Decision**
RRIN Extension services has been instrumental in information dissemination and skill acquisition for crop production.	28	47	14	6	95	3.02	Accept
Extension Officers have made useful suggestions, like the proper use of herbicides to local farmers in weed control	52	26	7	10	95	3.26	Accept
Extension Officers have been instrumental in linking the researchers and the farmers in crop production.	36	23	23	13	95	2.84	Accept
Extension services, by extension Officers, have made meaningful impact in crop production through innovative ideas.	18	43	23	11	95	2.72	Accept
Farmers' grouping as an agricultural extension approach has made meaningful impact to agricultural productivity.	39	30	18	8	95	2.74	Accept
Mean						2.94	Accept

Table 4: Respondents' Perceived Constraints to RRIN Extension Service

Statements	**SA 4**	**A 3**	**D 2**	**SD 1**	**N**	**X**	**Decision**
Farm location due to inaccessibility may prevent extension service from reaching local farmers	28 (112)	49 (147)	13 (26)	5 (5)	95 (290)	3.05	Accept
Inadequate transport system may hinder extension service to reaching farmers in remote areas.	26 (104)	30 (90)	20 (40)	19 (19)	95 (253)	2.66	Accept
Poor enumeration to extension service not motivated them in reaching distant farmers.	30 (120)	45 (135)	13 (26)	7 (7)	95 (284)	2.98	Accept
Overwhelming number of farmers per extension Officer has hampered extension service in reaching distant farmers.	27 (108)	21 (63)	24 (48)	23 (23)	95 (242)	2.55	Accept
Mean						2.81	Accept

N=95, Criterion mean 2.50, aggregate mean=2.81 (Accept)

The respondents perceived that inaccessibility of Farm Location by Extension Workers, inadequate transport system, poor enumeration to extension workers and overwhelming number of farmers per extension Officer, are some of the constraints (Davis e*t al.,* 2019; Camillone *et a*l., 2020) to RRIN extension services. These constraints need urgent attention of the Government at all levels to enable extension Officers develop capacity for

rubber farmers and empower them with modern techniques (Faborode and Ajayi, 2015) of rubber farming as RRIN remains as willing and interested as ever in working closely with rural farmers on rubber-based agroforestry systems. As extension division of RRIN engaged in human capacity development (Anegbeh *et al*., 2017a; 2017b) and serves as a linkage between research and end-users of research outputs, however, extension Officers are constrained in their mandate work such as training extension officers of other agricultural institutions on the knowledge and skills of modern techniques emanating from RRIN, disseminating agricultural technologies through workshops, seminars, exhibitions, publications, in-house review meetings, agricultural show, the latter being an avenue to publicize to a wider audience proven agricultural technologies developed by RRIN, and promote these technologies and products from mandate crops (rubber, gum Arabic, and Tamarind) to the public. Rubber Research Institute of Nigeria (RRIN) used training workshops to update the skills and knowledge of extension Officers as well as rubber farmers under the umbrella of National Association of Rubber Producers, Processors, and Marketers Association of Nigeria (NARPPMAN).

Conclusion

This article emphasized the pivotal roles of extension services of RRIN in enhancing capacity development of farmers. Results of the study indicated that RRIN plays a crucial role in developing and disseminating agricultural innovations and researching in extension. Based on the findings, the study concludes that RRIN extension division embarks on aggressive transfer of knowledge and skill to rubber farmers in order to play advisory role and provide feedback to research. Also, RRIN extension service had made positive impact in agricultural development in the study area. However, inaccessibility of Farm Locations by Extension Workers, inadequate transport system, poor enumeration to extension Workers and overwhelming member of farmers per extension Officer, were perceived by farmers as possible constraints to RRIN extension services.

Recommendations

Farmers should be empowered for increased access to agricultural extension as a way to raise farmers' productivity and incomes. Given the urgency of these needs, the governments should pay adequate attention to extension delivery systems for agricultural productivity. The Governments at all levels should Improve the agricultural productivity and welfare of rural farming households, especially in low- and middle-income countries like Nigeria, where agriculture plays an important role in the economy. The agricultural research institutes should develop empirical estimations of the causal impact of agricultural extension services in Nigeria to address internal and external validity concerns as improved estimation of the effectiveness of agricultural extension can support evidence-informed decision-making by agricultural policymakers. Thus, RRIN extension services should focus more on Knowledge transfer through training workshops, regular visit to farmers or communication through telephone for advisory services. However, adequate mobility and increase in their enumeration should be provided to enhance effectiveness of RRIN extension services.

REFERENCES

Agwu, A. E. (2006). Enhancing Rubber (*Heven brasiliensis*) Production through Extension Service Delivery in South West Agricultural Zone of Nigeria. Journal of Agriculture, Food, Environment and Extension 5(2): 7-16.

Anegbeh, P. O., T. U Esekhade., F. E. Balogun., P. Imarhiagbe,., F. G. Otene., H. Umar., P Ogwuche., F. Igbinosa., E. Musa, and O. F. Oviawe. 2017a. Promoting Integrated Farming Systems and Human Capacity Development for Empowering Nigerian Youth in Sustainable Agroforestry. *Direct Research Journal of Agriculture and Food Science* 5 (4): 192 – 198.

Anegbeh, P. O., F. E. Balogun., P. Imarhiagbe., Y. H. Umar., F. G. Otene., B. Agbonkpolo., E. Musa., V. E. Ikharea and O. F..Oviawe 2017b. Gender Mainstreaming of Industrial Training Students into Rubber-Based Farming Systems: Efforts of Rubber Research Institute of Nigeria towards Human Capacity Development. *Direct Research Journal of Agriculture and Food Science* 5 (1): 9 – 12

Aremu, P. A., Kolo, I. N., Gana, A. and Adelere, K. (2015). The crucial role of extension Workers in Agricultural technology transfer.

Ashcroft, J., Roling,N., Kariaki, J. F. and Chege, F. C., (2018). Extension and the Forgotten farmer. Occasional Paper, IDS University of Nairobi,

Ashcroft, L. (2018). A formative evaluation of the implementation of a medication Safety Data Collection Tool in English Health Care Setting.

Camillone, N., Duiker, S., Bruns, M. A., Onyibe, J., & Omotayo, A. (2020). Context, challenges, and prospects for agricultural extension in Nigeria. *Journal of International Agricultural and Extension Education, 27*(4), 144–156.

Davis, K., Lion, K., & Arokoyo, T. (2019). Organisational capacities and management of agricultural extension services in Nigeria: Current status. *South African Journal of Agricultural Extension, 47*(2), 118–127.

Faborode, H. F. B., and Ajayi, A. O. (2015). Extension-farmer-input linkage system for better communication and uptake of research results in Nigerian rural agriculture. *Journal of Agricultural & Food Information, 16*(1), 80–96.

Maunder, H. (2013). Agricultural Extension: A Reference Manure. FAO, Rome.

Mesfin, H., Tessema, Y. M., Tirivayi, N., & Nillesen, E. (2022). The impact of agricultural extension service on the uptake of various agricultural technologies in Ethiopia. *Africa Development, 47*(4): 77–105.

Naswem, A. A., and Ejembi, S. A. (2017). Reviving agricultural extension for effective transition from subsistence to commercial agriculture in Nigeria. *Journal of Rural Social Sciences, 32*(1), 3–20.

Oakley, P. and Garforth, C. (2015). Guide to Extension Training. FAO Training Series. No 11. Food and Agriculture Organization of the United Nations.

Omozusi J. E., P. O. Anegbeh., M. Igbinoss and N. Nwabueze (2025). Analysis of Trends of Natural Rubber prices in Nigeria, Malaysia, United States, and Europe from 2010 to 2019. *Direct Research Journal of Agriculture and Food Science (In Press)*

Russell, J. F. A (2016). Extension Strategies involving local groups and their participation, and the Role of the Approach in Facilitating local Development. In Jones (Ed), Investing in Rural Extension Strategies and Goals, Elsevier, London.

Van Den Ban and Hawkins, H. (2016). The Evolution of Links between research and extension in developing countries.