Journal of Community & Communication Research
ISSN: 2635-3318
Volume 5, Number 2, December 2020
Pp. 272-280

Effectiveness in Participatory Rural Appraisal Tools by Extension Workers in Delta State, Nigeria

Accessible at: https://jccr.sccdr.org.ng

Omoregie, O.
Department of Agricultural Economics and Extension Services,
University of Benin, Benin City, Edo State, Nigeria.
Corresponding author: margaret.koyenikan@uniben.edu

Koyenikan, M. J.
Department of Agricultural Economics and Extension Services,
University of Benin, Benin City, Edo State, Nigeria.

Review Process: Received: 06/09/20 Reviewed: 12/09/20 Accepted: 12/11/20

ABSTRACT

This study assessed the effectiveness of Agricultural Development Programme extension workers in the use of participatory rural appraisal tools in Delta State, Nigeria. Specifically, the study examined the personal characteristics, perceived benefits, usage, effectiveness and constraints of the extension workers in the use of PRA tools. Sixty (60) Extension workers in Delta State ADP were randomly selected and used for the study. Data were collected using structured questionnaire and analyzed using mean, frequency count, percentage and Pearson's Product Moment correlation. The Findings showed that EWs were more of males (65.0%), with mean age as 49.3years, 18.6years mean years of working experience and off-project training attended ($\bar{x}$=2). The EWs perceived high benefits (>50%) and used PRA tools which include semi structured interview ($\bar{x}$=2.83), seasonal calendar ($\bar{x}$=2.75) and daily activity profile ($\bar{x}$=2.68) and were effective only in the use of SSI. The major constraints to effectiveness in the use of PRA tools include inadequate in-service training ($\bar{x}$=2.75), poor funding by government ($\bar{x}$ = 2.63) and irregular conduct of field activities ($\bar{x}$ = 2.61). Age (r=0.231), family size (r=-0.297) and number of off-project trainings attended (r=0.383) significantly correlated with EWs' effectiveness in the use of PRA tools. The study recommended adequate pre- and in-service training on PRA for extension workers.

INTRODUCTION

Over 65% of Nigeria's population earns its living from agriculture and dwell in the rural areas. The country faces food shortage as a result of low agricultural productivity to match increase in population. Effective extension service delivery is important to enhance productivity of the agricultural and rural sector of the economy. The level of technology usage in Nigeria is quite low because technologies developed through research and development activities are not inclusive of farmers and other actors as expected. According to Oladele and Afolayan, (2005), this calls for an effective extension service that will facilitate linkage of the farmers with researchers and other actors in development process efficiently.

Agricultural extension as the main vehicle for the dissemination of technical and socio-economic information hinges on training as the key to sustainable agricultural development. A well trained extension personnel especially an extension agent is the most single element for achieving the aims and objectives of extension organization as they relate with farmers directly in the rural setting (Chambers, 1994); Madukwe, 2000; Kamble, 2014; Meiji N, Widianto A, and Kodir, A. (2019). Successful extension practices are expected to impact on the development and utilization of technology in agricultural production. In many nations a variety of organizations offer extension services, including government, non-governmental organizations (NGOs) and donor agencies. In other regions, extension is being subcontracted to specific organization. However, in Nigeria, the ADP has the responsible for extension services delivery in all the States (Nor and Madukwe, 2002). Jibowo (2005) affirmed that two cardinal objectives of the ADPs were to increase food production and income level of small-scale farmers through well-coordinated extension services. The technical information and the result of the researches in agriculture are communicated to farmers through extension workers. This in turn solves the prevailing problems of the farmers or help farmers to adopt innovation (Gate, 2014). The basic goal of agricultural extension is to carry out activities in the field from which those engaged in agriculture can benefit from. This is expected to involve the use of methodologies that are inclusive and will ensure adequate needs assessment to promote technology adoption.

Sinkaye (2011) states that participatory methods are to facilitate participatory learning and action (PLA) which is a system of learning and interaction among actors in developmental activities. PLA includes several approaches used to involve beneficiaries in development programmes. The common ones are Participatory Rural Appraisal (PRA) and Sustainable Livelihood approaches (SLA). They are used to conduct diagnostic studies in order to explore and understand the existing situation and identify differing needs and priority of the constituent groups within the farming communities for effective programme implementation.

Participatory Rural Appraisal (PRA) is used to describe a growing family of approaches and methods to enable local people to share, enhance and analyze their knowledge of life and conditions to plan and act. PRA flows from and owes much to the tradition and methods of participatory research (Gate.2014). Sinkaye (2011), Kamble (2014) and Meiji, Widianto and Kodir, (2019) highlight the benefits of participatory approach which include to promote innovation and ownership, bottom-up participatory learning and increase adoption rate. Some of the tested methods or tools of PRA for data collection include seasonal calendar, community workshop, resource mapping, focus group discussion, venn diagram, gender profile and transect walk.

Majid and Anwaar (2014) emphasize the use of PRA by NGOs and government institutions also in social research. In relation to the ADPs, effective PRA could enhance the relationship between EWs and farmers, increase demand for extension services, make easier the formation of contact groups and ensure rural farmers have better access to information and technologies. In the past villagers rarely had opportunity to take part in the decision on development issues that affect them which has changed with the introduction of PRA. According to Sinkaye, (2011), the need for re-orientation to adapt to new approaches and expose those responsible for extension activities to participatory methodologies to carry out their activities cannot be overemphasized. It brings out the complimentary roles of the stake holders.

Delta State ADP is the agency responsible for public extension delivery at the grass root in the State and has the main objective of improving the socio-economic status of the rural farmers. The ADP is a virile extension outfit that regularly updates EWs' on latest methodologies and proven technologies which are practically demonstrated to the farmers. To effectively perform this function, the extension agent who acts as the conduit for facilitation of innovation process/bringing agricultural innovations to farmers. It is expected that the introduction of PRA approach into the national extension service would have had many EAAs implementing it which would have triggered several changes in the way the ADPs operate in the States. Monthly technical review meetings

(MTRMs) for instance are now programmed on the basis of priority problems identified by the rural dwellers, and staff are trained in ways that help them address these priority problems.

In spite of the benefits of PRA, to encourage participation and raise farmers' awareness of innovations and subsequent use, the expected increase in the level of food production in the State remains a mirage. The performance of the service in this regard has not received favourable remarks from most observers (Okwuokenye and Onemolease, 2011). It could not be categorically stated that EWs are effectively incorporating or using PRA tools on the field and hence the need to provide evidence in this regard.

The general objective of the study was to assess the effectiveness of extension workers in the use of PRA tools in Delta State, Nigeria. The specific objectives were: To

1. Describe the personal characteristics of the extension workers
2. Examine respondents' perception of the benefits of PRA,
3. Ascertain extension workers' use of PRA tools
4. Examine the perceived effectiveness of extension workers in the use of PRA tools
5. Identify the constraints to effective use of PRA tools.

Hypothesis of the Study
There is no significant relationship between the personal characteristics of the extension workers and their effectiveness in the use of PRA tools.

METHODOLOGY
Delta State is an oil producing State in the south south geo - political zone of Nigeria. It has Asaba as its capital city. Urhobo/Isoko, Itsekiri, Ezon Ukwani and Ika are the major ethnic groups in the State. The state lies approximately between longitude 5° 00 and 6°45 east and latitude 5°00 and 6°30 North. The state covers a land mass of about 18,052km² of which more than 60% is land. In addition to crude oil and solid mineral deposits like industrial clay, silica, lignite, kaolin, decorative rocks, limestone etc within the state Delta State is a major producer of tuber and root crops amongst which are Cassava, Yam, Coco- yam and Potatoes. The coastal areas major in artisanal fisheries while aquaculture is prominent in the entire State.

A population study of seventy (71) Agricultural Extension Agents in the service of Delta State Agricultural Development Programme comprising Delta central=25, Delta south=23 and Delta North=23. Sixty (60) out of 71 extension agents adequately responded (85.0% response rate) to the structured questionnaire which was used for the study.

Extent of Use of PRA tools was measured by using a 4-point likert type rating scale of very often used=4, often used= 3, used= 2, not used=1, for the seventeen (17) listed PRA tools. Minimum score=17, Maximum=68. Mean score mean ≥2.5= Used.

Effectiveness in the use of PRA tools was measured using 3-point likert type scale of highly effective= 3, Effective= 2, Not effective= 1 for the tools which emerged as used, Minimum score=9, Maximum=27, mean ≥2= effective.

Data analysis was achieved using descriptive statistics (mean, frequency and percentage) and Pearson Product Moment Correlation was used to test the hypothesis.

RESULTS AND DISCUSSION
Socioeconomic characteristics of respondents
Table 1 shows the distribution of the personal characteristics of the ADP extension workers. Sex distribution as shown in the table more (65.0%) of the respondents were males. This corroborates Airemen, (2005) which states that in the past, extension job was reserved for men to reach only men. However, women are also farmers who need to be reached in order to achieve increased productivity by the employment of female extension workers. Result in Table 1 also shows that a

majority (95.0%) were married, 63.3% had HND/BSc. More (53.3%) were within 51-60 years range (mean=49.3years), mean family size of 6persons, More (55.0%) of the respondents had 21-30 years working experience with mean=18.6years and off-project trainings attended (mean=2). On age, it implies that extension workers in Delta State were aging with long period of service. Jibowo (1999) found that age has a direct influence on the level of performance and that aged workers are more experienced as a result the extension workers are expected to perform effectively due to the experience gained over the years. The average family size implies that the extension workers could still engage in their activities to improve their efficiency as they discharge their emerging roles without being tied down by family pressure. This result indicates that the extension workers have gained enough working experience in addition to high educational attainment to be able to perform their duties effectively. This is in line with Ejembi (2006) who stated that the length of service is probably an indicator of a person's commitment to the chosen career and Oladele (1992) who reported that long years of service means that enough experience would have acquired and passed down to subordinates. The low level of off-project training is an indication that EWs are probably learning from self-efforts or are restricted to FNTs and other in-house trainings. Continuous training and re-training programmes would enhance effectiveness on the job.

Table 1: Socioeconomic characteristics of respondents (n=60)

Variables		Count	Layer N %	Mean
Sex	Male	39	65.0	
	Female	21	35.0	
Age	≤40	63	10.0	
	41-50	22	36.7	49.3
	51-60	32	53.3	
Marital status	Single	2	3.3	
	Married	57	95.0	
	Divorced/Separated	1	1.7	
	Widow/widower	2	3.3	
Education	OND/NCE	18	30.0	
	HND/BSc	38	63.3	
	Post graduate	4	6.7	
Family size (Nos)	≤ 5	26	43.3	
	6 – 10	32	53.3	
	>10	2	3.3	6
Working experience (years)	≤ 10	4	6.7	
	11-20	27	45.0	18.6
	21 – 30	33	55.0	
Off-project trainings in Extension practice	≤5	58	96.7	2
	6 – 10	2	3.3	

Source: Field survey, 2018

Extension workers' perception of the benefits of participatory rural appraisal

Table 2 shows the Extension workers' perception of the benefits of PPRA. The majority (≥50%) of the EWs agreed that PRA exercise was beneficial in several ways to reflect inclusion (), identification of constraints, opportunities, ability to enhance technology adoption and sustainability of development process. However, PRA was adjudged by a few as easy to implement, not costly, saves time and easy to report (≤50%). The benefits perceived by the EWs were in tandem with Sinkaye (2011) while those with few adjudged as beneficial actually constituted some of the challenges associated with participatory learning and action which include time consumption, costly and difficult to report. Meiji N, Widianto A, and Kodir, A. (2019) stressed the importance of getting village information through PRA.

Table 2: Extension workers' perception of the benefits of Participatory Rural Appraisal (n=60)

Benefits	Yes	%
Increased commitment, identity and ownership of project	60	100.0*
Contribution of farmers to solution/meet needs	60	100.0*
People have a say in their affairs	60	100.0*
Learning, forum for experience sharing	60	100.0*
Understanding of farmers interests and priorities (gender and poverty perspectives)	59	98.3*
Gathering of relevant information and identifying activities to the needs of farmers	58	96.7*
Constraints and weaknesses are identified	58	96.7*
Inclusion of diverse groups in project design and implementation	58	96.7*
A bottom-up approach	58	96.7*
Can improve adoption and improve farmers' output	57	95.0*
Farmers are empowered to identify and solve their own problems	56	93.3*
Community/farmers' resources and opportunities are identified	55	91.7*
Farmers needs are adequately assessed	53	88.3*
Improves project impact and performance of interventions	51	85.0*
Effective in addressing farmers needs and interests	51	85.0*
Ensures sustainability of project/interventions	50	83.3*
Ability to harness local knowledge foe the good of the people	48	80.0*
Shift from extractive research to investigative involving farmers	46	76.7*
Gathering of relevant information for policy issues related to farmers	45	75.0*
Easy to implement	03	5.0
Not costly	03	5.0
Easy to report	01	1.7
Saves time/not time consuming	01	1.7

Source: Field survey, 2018 *≥50%= Benefit Multiple Response

Extension workers' use of participatory rural appraisal tools

Table 3 shows the mean distribution of extension workers' use of Participatory Rural Appraisal tools in the study area. The results show that extension workers used semi structured interview ($\bar{x}$= 2.83), seasonal calendar ($\bar{x}$= 2.75), venn diagram ($\bar{x}$= 2.54), focus group discussion ($\bar{x}$= 2.82), resource mapping ($\bar{x}$= 2.75), daily activity profile ($\bar{x}$= 2.68) and gender profile ($\bar{x}$= 2.63). These means are not high. An indication that they were not regularly used. The implication is that the EAs tools were not used regularly despite the benefits. The tools seemed to have been used not only during community planning exercises but also as individual tools adapted to routine extension functions. Majid and Anwaar (2014) indicated that agricultural extension research used PRA for the identification of research priorities, a field problem, training needs assessment, infrastructure facility availability among others. Sinkaye, (2011) stressed the need to expose those responsible for extension activities to participatory methodologies to carry out their activities.

Table 3: Extension workers' use of Participatory Rural Appraisal tools

PRA Tools	Mean	SD
Semi structured interview	2.83*	.829
Seasonal calendar	2.75*	.708
Focus group discussion	2.82*	.497
Resource mapping	2.70*	.644
Venn diagram	2.64*	.790
Priority matrix	2.52*	.523
Daily activity profile	2.68*	.790
Gender profile	2.63*	.513
Transect walk	2.49	.628
Village social map	1.98	.701
Historical timeline/Trend lines	1.86	.572
Institutional profile	1.83	.629
Farming systems diagram	1.80	.565
Access and control profile	1.79	.577
Resources picture cards	1.49	.718
Income and expenditure matrices	1.34	.829

Source: Field survey, 2018 *mean≥2.50=Used

Effectiveness of extension workers in the use of Participatory Rural Appraisal tools.

Table 4 shows the mean distribution of the perceived effectiveness of extension workers in the use of PRA tools. Results show that extension workers perceived themselves ineffective (mean ≥2.0) in the use of all the PRA tools listed except semi structured interview (SSI) ($\bar{x}$= 2.05). Effectiveness in SSI could be attributed to its semblance to questionnaire. Low level of effectiveness is an indication of incompetency. Hence, they may not be able to facilitate the exercise effectively with farmers and other actors and having considered PRA to be beneficial, minimal benefits will accrue to the State. This implies that they need more training to be more effective efficient in the use of PRA tools. This is in line with the findings of Minarovic and Mueller (2000), who stated that despite the fact that sustainable agriculture is vital, extension workers' knowledge and understanding of the concept is inadequate. This could imply that most of the EWs were not trained either pre-or in-service on the use of PRA tools but probably encountered them in the course of performing their duties, acquired some knowledge or with experience despite perceiving that they were beneficial. This is in line with Tiraieyari and Uli, (2011) who asserted that the effectiveness of sustainable agriculture depends to a large extent on the ability of extension workers to transfer sustainable practices to the farmers.

Table 4: Effectiveness of the extension workers in the use of PRA tools

PRA Tools	Mean	SD
Semi structured interview	2.05*	0.725
Transect walk	1.97	0.724
Seasonal calendar	1.96	0.529
Focus group discussion	1.94	0.543
Venn diagram	1.88	0.717
Priority matrix	1.52	0.676
Daily activity profile	1.63	0.688
Gender profile	1.67	0.655
Resource mapping	1.60	0.669

Source: Field Survey 2018 *Mean ≥2.0= Effective

Constraints to effectiveness of extension workers in the use of Participatory Rural Appraisal tools in Delta State

Table 5 shows the mean distribution of the constraints to effectiveness of extension workers in the use of Participatory Rural Appraisal tools in Delta State. The table shows that the serious constraints include inadequate in-service training ($\bar{x}$=2.75), poor funding by government ($\bar{x}$= 2.63)

irregular conduct of field activities ($\bar{x}$= 2.61), no knowledge on PRA was acquired from school ($\bar{x}$= 2.56), poor linkage between farmers, extension agent & other actors ($\bar{x}$= 2.45), inadequate logistics support ($\bar{x}$= 2.45) and poor access to necessary information and relevant materials on PRA ($\bar{x}$= 2.45). The results agree with the statement that most significant shortcomings of agricultural extension in general have been unresponsiveness to the variation in farmer's needs, lack of ownership by intended beneficiaries, limitation in the quality of field, and technical staff's unstable policy and political support (Idachaba, 2005).

Table 5: Mean distribution of the constraints to effectiveness of extension workers in the use of participatory rural appraisal tools.

Constraints	Mean	Std. Deviation
Inadequate in-service training exposure on the job on PRA	2.75*	.700
Poor funding of field activities by government	2.63*	.787
Irregular conduct of diagnostic survey, needs assessment and other field activities	2.61*	.673
No knowledge on PRA was acquired from school	2.56*	.615
Poor linkage between farmers, extension agent & other actors	2.45*	.675
Poor logistics support	2.45*	.746
Poor access to necessary information and relevant materials on PRA	2.25*	.541
Unwillingness to experience community life	1.98	.854
Low capacity of farmers to effectively participate	1.92	.591
PRA tools are very costly to conduct	1.79	.569
Farmers' poor responses to extension service	1.78	.770
Language barrier	1.50	.725
Inability of farmers to trust extension workers.	1.47	.650
My poor communication & facilitation skills (extension worker)	1.27	.578
PRA apply tools are difficult to apply to work situation	1.11	.601
Poor skills to adapt PRA tools to my work situation	1.05	.282
Not interested in the use of PRA tools	1.04	.257

Source: Field Survey 2018 *Mean≥2.00= Serious

Relationship between the personal characteristics of Extension workers and their effectiveness in the use of participatory rural appraisal tools.

Table 6 shows the relationship between the personal characteristics of the extension workers and their effectiveness in the use of PRA tools. Age (r=-0.231), family size (r= -0.297), and off-project training in extension practices (r=0.383) had significant relationships with effectiveness in the use of PRA tools at 0.05% level of probability. Age and family size of the extension workers were negatively correlated with effectiveness in the use of PRA tools. This implies that, the higher the age and family size, the lower their perceived effectiveness in the use of PRA tools, meaning that the younger EAs are likely to be more effective, working experience shows negative correlation but nor significant. Off-project training had significant positive correlation, meaning that the more off-project trainings the EAs were exposed to, the more effective they were in the use of PRA tools. This could imply that the younger EWs with smaller family size and more off-project training attendance were likely to be more effective in the use of PRA tools. Considering the low level of training, the younger ones could have explored avenues to learn about PRA on their own.

Table 6: Relationship between the personal characteristics of extension workers and their effectiveness in the use of PRA tools.

Variables	Effectiveness	
	Pearson Correlation	p-value
Age	-0.231*	.028
Education	-0.116	.154
Family size	-0.297*	.004
Working experience	-0.105	.195
Off-project training in extension practice	0.383*	.000

Source: Field Survey 2018. *Correlation significant at 0.05% level of probability

CONCLUSION AND RECOMMENDATIONS

The majority of the EWs of Delta State ADP were advanced in age with many years of working experience but with few number of off-project training attendance. PRA tools were considered to be highly beneficial, some of the tools including SSI, seasonal calendar, gender and daily activity profile were used however they perceived that they were not effective in the use of most of the tools due to constraints such as inadequate training, poor funding, inadequate logistics support and irregular conduct of field activities hence, the benefits of PRA may not have accrued to the stakeholders in the State's agricultural system. The younger EWs with smaller family sizes and attendance off-project training tended to be more effective in the use of PRA tools.

Based on the findings of the study, the following recommendations are made:

1. Government should employ vibrant younger extension workers who are likely to learn fast and develop themselves since most of the current extension workers are close to retirement to ensure continuity.
2. Adequate training on the conduct of PRA should be provided to extension workers so that they can use PRA tools in practice while facilitation and possible adaptation to day to day functions in order to derive the enormous benefits accruable from using PRA tools.
3. Adequate funding and logistics support should be provided by the State government and non-governmental organizations for the ADP. This will ensure that management will fund field activities so that for extension workers can perform their duties and become more effective.
4. Extension workers should adopt and regularly use of PRA principles in agricultural and rural development programmes since the approach is beneficial and adapt the tools to day to day operations to provide information that could help to improve their effectiveness on the field.
5. Introduction of PRA and other participatory methodologies in the curriculum at undergraduate/BSc and HND levels will provide a foundation for EWs to build upon.

REFERENCES

Agbamu, J.U. (2006). *Essentials of Agricultural Communication in Nigeria Lagos*: Malthouse Press Limited

Airemen, S.A. (2005). *Training needs of extension staff in agriculture: A case study of Edo State agricultural development programme.* Published B.Sc thesis. Department of agricultural economics and extension, Faculty of Agriculture, University of Benin, Benin-City. Pp 10-18

Chambers, R. (1994b) 'Participatory Rural Appraisal (PRA): Analysis of experience', *World Development*, Vol. 22, No. 9, pp. 1253–68.

Ejembi, (2006). Frequent training and re-training programmes are needed to be put in place by an organization to strengthen this commitment.

Gate. B. (2014)./Agricultural development strategy overview. Annual Letter. Accessed on April 2,2014.Available on www.gatesfoundation.org/

Idachaba, F.S. (2005), Agricultural and rural development in Nigeria. The policy Perspective. A text of convocation lecture Delivered at Kogi State University, Anyigba, Kogi State,Nigeria on 11th march, 2005, pp3-4

Jibowo, A.A. (1999). Essentials of rural sociology. GbemiSodipo press, Abeokuta Pp 70-110

Jibowo, A.A. (2005). History of agricultural extension in Nigeria in Adedoyin S.F (ed). Agricultural Extension in Nigeria, Ilorin: Agricultural extension society of Nigeria Pp 1-15.

Kamble, S.M. (2014). Participatory Rural Appraisal: A Tool for Inclusive Growth and Participatory Development A Case Study of Village Marale, MS, India. International Research Journal of Social Sciences Vol. 3(3), 48-50.

Madukwe, M.C. (2000). The challenges of agricultural extension in the 21st century, *Agro Science Journal of Tropical Agriculture Food, Environment and Extension.* Vol 1 (1); 85-95.

Majid, H. and Anwaar, M. (2014). A Critical Analysis of Participatory Rural Appraisal Research Tools in Social Research: Field Challenges and Reliability of Data.

Meiji N, Widianto A, and Kodir, A. (2019). Strengthening village information system to reach good governance in rural areas through participatory rural appraisal. Conference: Proceedings of 1st Workshop on Environmental Science, Society, and Technology, WESTECH 2018, December 8th, 2018, Medan, Indonesia.

Minarovic, R.E. and Mueller, J.P. (2000). North Carolina cooperative extension Service professionals' attitudes toward sustainable agriculture.

Okwuokenye, G.F. and Onemolease, E.A (2011). Agricultural loans and inputs supply programme on rice production in Delta State, Nigeria: Problems and Prospects. *African Journal of Agricultural Research and Development,* 4(3):41- 49.

Oladele, O.I. (1992). Analysis of institutional research-extension farmers linkage system in south western Nigeria unpublished Ph.d, thesis. Department of agricultural and rural development, University of Ibadan.

Oladele, W. and Afolayan, S.O. (2005). Group dynamics and leadership in agricultural extension in S.F Adedoyin, Agricultural extension in Nigeria. ARMT, Ilorin.

Sinkaiye, T. (2011). Agricultural extension participatory methodologies and approaches in agricultural extension in Nigeria. AESON, Ilorin.

Tiraieyari, N. and Uli, J. (2011). Relationship between human development competencies and work performance .*Australia Journal of basic applied Science.,* 5(5): 356 -368.