JOURNAL OF RESEARCH IN EDUCATION AND RURAL DEVELOPMENT (JORERD)

VOL. 7, No. 1, 2011

A PUBLICATION OF NATIONAL ASSOCIATION FOR EDUCATIONAL RESEARCH AND RURAL DEVELOPMENT (NAERRD)

CO-OPERATIVE FARMERS KNOWLEDGE REGARDING THE UTILIZATION OF TROPICAL MANIHOT SELECTIONS OF THE CASSAVA MULTIPLICATION PROGRAMME IN SOUTHERN NIGERIA.

EDWARDS ADESEYE ALADEMERIN, PH.D.
Dept. of Agricultural Production & Management Sciences
Tai Solarin University of Education Ijagun,
Ijebu-Ode, Ogun State, Nigeria.

ABSTRACT

This study dealt with the cooperative farmers knowledge on the utilization of Tropical Manihot Selections (TMS of the CMP) in Southern Nigeria. Two research questions and one research hypothesis guided the study. Three states one from each geopolitical zone in Southern Nigeria were purposively sampled and from them, 360 accessible cooperative farmers (males and females) were randomly sampled for the study. The study was a survey and a 14-item structured questionnaire valiadated by 13 experts in different areas of cassava development was used for data collection. The internal consistency was establish using Cronbach Alpha. Three hundred and sixty copies of the instrument were administered on the respondents out of which 331 were completed and returned. Data were analysed using percentage, mean, analysis of variance (ANOVA) and scheffe test. The findings revealed that farmers have a good knowledge on TMS now after the initial negative attitude and response to the adotpion of TMS now than when previously introduced. ANOVA result revealed significant difference in the mean responses of cooperative farmers regarding their knowledge on TMS in Ogun, Delta and Enugu States in Southern Nigeria.

Based on the findings, recommendations made include the need for regular radio and television programmes in local dialects to dissiminate information on TMS to farmers, regular publications in local languages among others.

INTRODUCTION

Researches and development into cassava crop are not recent in Nigeria and in Africa as a whole.

In the 1970's research focused on developing high yielding varieties of cassava which were resistant to the most common diseases - bacterial blight, and cassava mosaic virus. Recently, attention has turned to the damage caused by the introduction of new pests - cassava mealbug (CM) and cassava green spidermites (CGM) - into tropical Africa from other parts of the world, and to the development of biological methods of control (Berry, 1993).

Government's intervention and efforts of non-government organizations (NGOs) in the cassava sub-sector have led to a number of measures since 1970's. These include government programmes such as the National Accelerated Food Production Programme (NAFPP), Operation Feed the Nation (OFN), Agricultural Research Systems and their close collaboration with the International Institute for Tropical Agriculture (IITA) and other International Agriculture Research Centres, and large scale planting material multiplication and distribution facilitated by the International Fund for Agricultural Development (IFAD) assisted Cassaava Multiplication Programme (CMP), activities of oil companies and church organizations and most recently the Roots and Tubers Expansion Programme (RTEP).

"At the instance of the Fedral Government of Nigeria (FGN), IFAD approved a loan of 12.05 million United States Dollars in 1986 for cassava improvement Programme in the major cassava producing states (FMANR, 1997:V). The main objective of the programme was to increase food production and income of cassava producers and procassors. The components for achieving project objectives were; cassava seed multiplication, varietal development and release, biological control of CM and CGM, adaptive research and extension, women in agriculture and agro-processing. In 1996, the

programme was redesigned to accommodate cassava utilization, environmental protection measures, yam miniset multiplication and collection and testing of local varieties of root crops. The loan which was originally approved for 5 years, covering 1987-1991, had to be extended three times and was finally closed on June 30, 1997, It has now been replaced with the Roots and Tubers\Expansion Programme (RTEP).

Cassava's tolerance of adverse conditions, and its flexibility with respect to the timing of both planting and harvesting, make it ideal for famine situations (Fresco,1993). R andomanoff and Lynam (1992) argue that cassava plays a famine prevention role; where cassava is widely grown, famine rarely occurs because cassava provides a stable base to the food production system. In the cassava growing and non-growing areas of Nigeria, the crop supports food security strategies as the tubers could be processed into various forms types of delicacies for human consumption. It is a major poverty alleviation crop in Nigeria today.

Cassava Research and development in Nigeria

The IITA (1983,1984) has reported the increasing incidence of damage to cassava crop due to attack by pests and diseases. It should be noted however that IITA in collaboration with other international Research Agencies and African national Programmes, had brought CMB under control by releasing beginning in 1981, an insect parasitoid Epidinocarsis lopezi (Haren et al 1987; Newenschwander, 1994).The need to curb the menace of these pests of cassava became intense in all research institutes. This led to the CMP of IFAD and a loan of 12.05 million US Dollars was approved in December 1985 and became effective in September 1987.

IFAD has a mandate, unique among such institutions to combat hunger and rural poverty, focusing in particular on the low income food deficit countries that receive well over 80% of its loans. It directs funding and mobilizes additional resources on concessional terms to finance rural development projects involving the world's poorest populations; small farmers, landless poor, artisan, fishermen, nomadic herdsmen and poor rural women. The aim is to increase their food production, raise their incomes, improve their health, nutrition and educational standards, and ensure their well-being in a sustainable and environmentally safe way (IFAD, 1998).

IITA	-	Regional mandate Produce Breeder Stocks
NRCR	-	National mandate
NSS	-	Produce Foundation Seed Stocks
ADP	-	Certified Seed Stocks Production

Contact Farmers (Registered Farmers) Individually and in coops
Friends and Relations
Others and Nearby Surrounding Villages
Figure 1: Cassava Varietal Distribution
Personal communication with Mr. Jimoh of the CMP, Ijebu-Ife, October, 1998.

Extension agent face dilemmas and resistance from farmers from time to time in the process of adopting new ideas about farming and agriculture. It should be noted that research standards and technological innovation have been high, but adoption of new technology has now been low, often due to the prevailing misconception concerning the true need of the client groups. In the words of Zaltman (1964) cited in Rogers (1971), "adoption is a decision to make full use of a new idea as the best course of action available".

Not all farmers will accept a new idea at the same time. In any rural community, the readiness to accept new ideas and put them into practice varies from farmer to farmer depending on each farmer's previous experience with new ideas, the personality of

the farmer and the amount of land and other resources available. This classifies farmer into adopter categories on the basis of innovativeness.

Many of the farmers formerly termed "laggard" have now been shown to be ideal managers of their own situations. They are in a constant process of analyzing, choosing, experimenting and adopting (Chamber ,1993); they want and need a choice of new technologies to enhance their adaptability in the diverse and risk prone areas in which they live,. Ramkumar (1985) indicated that the existence of new technology or the provision of information on technology does not itself facilitate adoption and what the farmer demands is not a package of practices devised by the formal research and extension services, but a basket of options from which he/she can make active choices.

In most of the developing countries, the reliance of farmers on fellow farmers is high regarding research and extension services than on government extension officers. At local and regional level, the ability of farmers organisations to influence research and extension depends on the structure of the system itself.

In a decentralized system, farmers organizations tend to have better access to individuals, within the system as they are physically closer at hand (Berdegue, 1990; Dugue, 1993; Ndiame, 1994). This is very common at village and rural levels in the cassava growing states of Nigeria. Friends and relations constantly exchange ideas, seeds of crops, planting materials of cassava among themselves and this system seems to be much more efficient than the conventional government extension services. Spontaneous diffusion of technologies (that have been proved successful) occurs frequently when ideas are shared with friends, seeds and materials are exchanged, and new products gain recognition along trading routes. Local markets or meetings may be important venues for sharing agricultural ideas. A great variety of method -drama, song, Jokes - may be important locally to carry agricultural messages. There is now increasing recognition of the importance of indigenous common networks (Box, 1989; Simpson, 1994).

In line with the above, Veldhuizen et al (1997) agree that farmers may indeed play an important role and take over responsibility in spreading experience on agricultural innovations. This is known as farmer-based extension.

Farmers distinguish land races by local names which are often descriptive of the physical characteristics of the plant, such as the colour of certain parts, height and canopy size, yield potential, bulking period etc. Such names may also describe the original source of the genotype, such as the place or institution from which it was introduced for the first time, or the individual who brought it originally. The local names may also be an indication of an event which coincided with the introduction of the genotype in the village (Jones, 1959). Examples are Maadan, Olengasiya, Oreke, Mafamipa, Oko Iyawo, Dalejoro etc in western Nigeria. Involving farmers' organization in the adoption and spread of some varieties of crops and technologies has proved very successful in some other parts of the world.

RESEARCH QUESTIONS

The following research questions guided the study:

1. How did the cooperative farmers get the information about the Tropical Manihot Selections (TMS)
2. What is the level of knowledge about the utilization of Tropical Manihot Selections (TMS) currently in use by the cooperative farmers?

RESEARCH HYPOTHESIS

There is no significant difference in the mean responses of cooperative farmers in Ogun, Delta and Enugu States on the level of their knowledge about TMS currently in use on their farms.

RESEARCH METHODS

The study adopted a descriptive survey design to determine the cooperative farmers knowledge on the utilization of Tropical Maihot Selections (TMS) in Southern Nigeria. The study presented some rational analyses

using location, educational background, yielding capacity, adoption rate, sex, income and socio-economic status, cultural background among others as independent variables to ensure equal representation of the samples.

The study covered three states each purposively sampled from the three geo-political zones - Ogun, Delta and Enugu States. A total of 360 accessible cooperative farmers were sampled for the study. A structured questionnaire developed by the researcher and validated by 13 experts in cassava development was used to elicit information from the respondents.

A Cronbach alpha reliability co-efficient of 0.92 was got. 331 copies of the questionnaire were completed and returned. Data were analyzed through descriptive statistics techniques of frequencies, percentage and mean scores; and inferential statistics techniques of Analysis of Variance (ANOVA) and multiple comparisons of Scheffe method to locate pairs of groups means significantly different.

PRESENTATION AND ANALYSIS DATA

Table1: Distribution of Respondents by Educational Qualifications

S/N	Educational Qualifications	Frequency (No.)	Percentage %
1.	No Schooling	165	49.8
2.	Primary Schooling below class six	35	10.6
3.	Primary Six Certificate	22	6.6
4.	Secondary Education below School Certificate	42	12.7
5.	School Certificate, OND, NCE, HND etc.	52	15.7
6.	University Degree holder	15	4.4
	Total	**331**	**100.0**

Table 1 show that 165 (49.8% of the cooperative farmers had no formal education, 35 (10.6%) of the farmers had formal education below primary six, while 22 (6.6%) of them had primary six school certificate. The table also show that 42 (12.7%) of the cooperative farmers had secondary education below school certificate, 52 (15.7% had school certificate, OND, NCE, HND etc, while 15(4.4%) of them were University degrees holders.

Table 2. Distribution of Respondents by Traditional and Social Status

S/N	Traditional/Social Status	Frequency (No.)	Percentage (%)
1.	Village head	11	3.3
2.	A sectional head	41	12.4
3.	A chief	14	4.2
4.	An ordinary member	195	58.9
5.	A politician	38	11.5
6.	A club member	19	5.7
7.	A religious leader	13	3.9
8.	A musician	0	0
	TOTAL	**331**	**100.0**

Table 2 show that 11 (3.3%) of the cooperative farmers were village heads, 41 (12.4%) were sectional heads, 14 (4.2%) were chiefs and 195 (55.9%) were ordinary members. The table also shows that 38 (11.5%) were party politicians, 19 (5.7%) were members of social clubs while 13 (3.9%) were religious leaders. None of the farmers was a musician.

Table 3: Distribution of Respondents by size of Farmland

S/N	Approximate Size of Farmland	Frequency (No)	Percentage
1	Less than 1 hectare	92	27.8
2.	1 - 3 hectares	186	56.2
3.	3 - 5 hectares	45	13.6
4.	Over 5 hectares	8	2.4
	Total	**331**	**100.0**

Table 3 shows that 92 (27.8%) of the co-operative farmers had less than one hectare of farmland, 186 (56.2%) hand between one to three hectares, 45 (13.6%) had between three to five hectares while eight (2.4%) had over five hectares of farmlands.

Research Question 1
How did the cooperative farmers get information about the Tropical Manihot Selections (TMS)?

Table 4: Distribution of Respondents Regarding Knowledge About TMS

S/N	Source of Knowledge	Frequency (No)	Percentage
1.	Friends	38	11.5
2.	Agricultural bulletins	1	0.3
3.	Newspapers and Magazines	1	0.3
4.	Extension workers of ADP	256	77.3
5.	From Radio	0	0
6.	Market/Trading routes	0	0
7.	Cooperative Societies	6	1.8
8.	From government	0	0
9.	NGOs	4	1.2
10.	OFAR	25	7.6
	Total	**331**	**100.0**

Table 4 shows that 38 (11.5%) of the cooperative farmers got their knowledge about TMS from friends, 1 (0.3%) from agricultural bulletin, while 1 (0.3%) from newspapers and magazines. The table also shows that 256 (77.3%) got their knowledge about TMS from extension workers of ADP, 6 (1.8%) from cooperative societies, 4 (1.2%) from non-governmental organizations and 25 (7.6%) through On-Farm Adaptive Research (OFAR). None got the knowledge from radio programmers, market and trading routes and also from government sources

RESEARCH QUESTION 2.

What is the level of knowledge about the utilization of Tropical Manihot Slection (TMS) currently in use by the cooperative farmers?

Table 5: Level of Knowledge About TMS currently in Use by the Co-operative Farmers
N = 331 Co-op farmers

Items	Level of knowledge about TMS Currently in Use	Mean	Remarks
1	My level of response to adoption of TMS initially	1.90	Low
2	My level of opinion on TMS as helping to solve declining food production and improving food security after first trial .	3.21	High
	Your efforts as a cooperative farmer		
3	In helping other farmer in the adoption and spread of the TMS since the first trial on my farm	3.23	High
4	In view of agricultural extension education through the adoption and spread of TMS	3.18	High
5	Regarding effectiveness of government extension services on TMS	3.08	High
6	Input supply (planting materials, fertilizers, herbicides, pesticides, etc) on regular basis	3.35	High
7	Farming technology to farmers in all farm operations	3.03	High
8	Processing and utilization technology of tubers among farmers	3.25	High
	Your response as regards group approach method on level of knowledge about TMS		
9	Group approach involves more farmers' participation	3.29	High
10	Through group approach more ideas are pooled for farmers benefits	3.17	High
11	Group approach quickens the spread of the TMS to other farmers	3.31	High
	Your response on contact farmers method regarding level of knowledge on TMS		
12	Contact farmers have direct access to TMS and other information on the CMP technology	3.18	High
13	Contact farmers are registered farmers with the government	2.56	High
14	They enjoy good patronage of extension officers	3.24	High

Note: Cut off point for High is X = 2.50 and above.

Data presented in table 5 shows that all the cooperative farmers agreed to high knowledge about the TMS currently in use in each of the 13items relating to themselves, other farmers, extension officers, contact farmers etc. each of the items met the cut off point of means 2.50 and above.

However, all the cooperative farmers agreed that their initial response to the adoption of TMS was low and this had a point of mean 1.90, which was below the cut off point of 2.50.

Inference from the table is that the cooperative farmers have a high knowledge of TMS currently in use on their farms now better than what the situation was initially during the early stage of adoption of the TMS.

Research Hypothesis

Hypothesis 1

There is no significant different in the mean responses of cooperative farmers in Ogun, Delta and Enugu State on the level of their knowledge about TMS currently in use for increased farm output.

Data used for testing the above hypothesis were obtained from section B of the instrument and are presented in table 6.

Table 6: ANOVA for Mean Responses of Co-op Farmers on the level of their knowledge about TMS currently in use for increased farm output.

Sources of Variations	Sum of Squares	df	Mean Square	F-Cal	F-Tab	Remarks
Between group	2.482	2	1,241	11.980	3.00	Sig
Within group	33.974		328 1.104			
TOTAL	36.456		330			

Note: Significant at P<. 05

Table 6 shows that the calculated F-value of 11.980 was greater than the critical F-value of freedom at P< .05. From the values, there were significant differences in the mean responses of respondents with respect to the level of their knowledge about TMS currently in use for increased farm output. The null hypothesis of no significant difference was therefore rejected and the alternative of significant difference was accepted.

Further analysis to identify group significantly different in the mean responses on the level of their knowledge about TMS currently in use for increased farm output was conducted using Scheffe test. Post hoc test with Scheffe's multiple range method (P< .05) revealed that mean responses of cooperative farmers in Ogun were significantly higher than those of Delta and Enugun states. The results are presented altogether in summary in Table 8.

Table 7: Summary of Respondent Group Means on all the hypothesis tested using Scheffe test.

Hypothesis	States	No. of Farmers	Standard Deviation Mean 1	Subset for alpha = .05 Groups sig. Mean 2	Farmers in Different Mean 3
Hotl	Delta	111	.2606	3.0090	Delta
Knowledge	Enugu	109	.3488	3.0170	and
About TMS	Ogun	111	.3485	3.1963	Enugu
	Sig.		.983	1.000	States

Total No. of Farmers = 331

SUMMARY OF FINDINGS

The level of knowledge among farmers was found to be very high after their initial cold attitude and response. A majority of them attributed their source of knowledge about TMS to the ADP extension workers, they also agreed that the original source of TMS for use on their farms was from the ADP extension workers.

Their knowledge was also high so also their efforts in:

- helping to solve declining food production and improving food security after first trial;
- helping other farmers in the adoption and spread of the TMS since the first trial on their farms;
- View of agriculture extension education through the adoption and spread of TMS;
- the belief that processing and utilization technology of cassava tubers among themselves and other cooperative farmers will be improved
- group approach and dynamics and also in the formation of cooperative for further dissemination of information among members.

IMPLICATION OF THE STUDY

Cassava over the year have been recognized by successive government as a poverty alleviation crop. For this reason, Cassava as a crop has occupied enviable position in all poverty alleviation initiatives of the Government since independence. Adequate knowledge by the farmers about the inherrent attributes of the crop is very essential in terms of low HCN, in ground storability, ease of peeling, early maturing quality, multiplicity of

end uses etc. all these qualifies are permanent and identifiable in the TMS variety developed by the IITA as a result of the IFAD fund released to the Government in the mid 80's. Giving recognition to the appropriate policy of the Government in terms of poverty alleviation initiatives among the Nationals can be best achieved through education and orientation regarding the qualities of the TMS. The presidential intuitive on cassava development in the country is doing this advocacy and service delivery through various agricultural agencies of MANR, ADP, NALDA, RTEP etc. this is with the hope of a positive inpact on the farmers.

RECOMMENDTIONS

1. There is the need for regular radio and television programmes in local dialects to disseminate information on TMS to local farmers.
2. Regular publications in the form of newsletters, magazines, bulletins in various local languages on new information about TMS to the local farmers.
3. Formation of more societies and farmers group as group dynamics have been found to be very efficient and are of a good cost benefit ratio.
4. Regular and functional training programmes for the extension officers and cooperative farmers at all ties of the society - states, local, community levels.

REFERENCES

Alademerin, E. A. (2001) "Evaluation of the impact of cassava Multiplication Programme of the International Fund for Agricultural Development on Cooperative Farmers in Southern Nigeria". A Ph.D. Thesis submitted to the Department of Vocational Teacher Education, University of Nigeria, Nsukka.

Berdeque, J. A. (1990) "NGOs and farmers: Organisations in Research and Extension and Extension in Chile". London, UK: ODI/AGREN Network Paper 19.

Berry, S. S. (1993) Socio-Economic Aspects of Cassava Cultivation and Use in Africa: Implications for the Development of Appropriate Technology. COSCA Working Paper No. 8 IITA, Ibadan. Collaborative Study for Cassava in Africa.

Box, L. (1989) "Virgillio's Theorem: A Method for Adequate Research" In Chambers, R; Pacey, A. and Thrupp, L A. (eds) Farmer First: Farmer Innovation and Agricultural Research, London Intermediate Technology Publications.

Chambers, R. (1993) Challenging the Professions. Frontiers for Rural Development. London: IT Publications.

Federal Ministry of Agriculture and Natural Resources (FMANR) (1998) Development of Cassava in Nigeria. FMANR.

Herren, H. R.; Neuenschusander, P; Hennessey, R.D.; Hammand, W.N.O. (1987) Introduction and Dispersal of Epidinocarsis Lopezi an Exotic Parasitoid of Cassava Mealy Bug in Africa. Agriculture, Ecosystems and Enviroment. 19: 131-134.

IFAD (1998) IFAD Annual Report 1998. Rome. IFAD Publication Unit.

IFAD (1998) A Cell to Action. Building on IFAD's Experience: Lessons from Sub-Saharan Africa.

Newenschwander, P. (1994) Control of the Cassava Mealybug in Africa: Lessons from Biological Control Project. Africa Crop Science Journal 2 (4).

Ramkumar, S. (1995) "The Analysis of Farmer Information Systems for Feeding of Diary Cattle in Two Villages of Kerala State, India." Ph.D Thesis. Reading, U.K.: The University of Reading.

Romanoff, S. and Lynam, J. (1992) Commentary. Cassava and Africa Food Security: Some Ethnographic Examples. Ecology of Food and Nutrition 27.

Veldhuizen, L. V.; Waters-Bayer, A. and De Zeeuw, H. (1997) Developing Technology with Farmers: A Trainer's Guide for Participatory Learning. London: Zed Books Ltd.

Zartman, I. (1973) Man, State and Society in the Contemporary Maghrib. London: Pall Mall Press.