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Full Length Research Paper

Information sources to cocoa farmers on cocoa rehabilitation techniques (CRTs) in selected states of Nigeria

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Cocoa industry in Nigeria contributed greatly to the country's GDP in the 50s and 60s up until early 70s when oil was discovered. The discovery led to the neglect of agricultural sector, which also affected cocoa industry. In response to the neglect, cocoa farmers abandoned their farms and shifted focus to other areas. This behaviour adversely affected cocoa industry; hence most cocoa plantation in Nigeria is characterized by the presence of old cocoa trees having very low yield. In order to address this problem, Cocoa Research Institute of Nigeria (CRIN) developed various Cocoa Rehabilitation Techniques (CRTs). Different stakeholders are involved in disseminating information on these techniques to cocoa farmers in Nigeria. This study investigated the sources of information to cocoa farmers on CRTs in selected States of Nigeria. Multistage random sampling technique was used to select the respondents for the study. The cocoa producing States were stratified based on the Agro-ecological zones and the production levels. First, five states; Ondo, Kwara, Cross Rivers, Edo and Taraba, were randomly selected out of the 14 cocoa producing states. Ondo and Edo were selected from the south western agro-ecological zone of Nigeria; Cross River was randomly selected from the three cocoa producing states in the southeast agro ecological zone while Taraba and Kwara were selected from north central and north east agro ecological zones respectively. Secondly, twenty percent of Local Government Areas (LGAs) planting cocoa in selected states was randomly chosen to obtain 12 LGAs. Then, three wards were randomly selected in each LGA to give a total of 36 wards. Finally, 10 percent of cocoa farmers in high and medium and 20 percent from low cocoa producing states in selected wards were randomly selected to give 381 cocoa farmers. Data collected were analyzed using descriptive and inferential statistics (Chi- square). Results of the analysis revealed that most of the respondents were married (81.3%), had secondary education (73.6%) with a mean age of 53.4 years, Standard Deviation (STD = 10.8). Mean farm size was 2.4 hectares and 54.4% belonged to farmers' organizations. Major source of information to cocoa farmers was radio. Few farmers (14.1%) had less than 10 years cocoa farming experience and 21.2% had over 30 years, while 49.0% of the respondents had cocoa trees over 30 years old. Study concluded that cocoa farmers in the study areas were old and had aged trees.

Key words: Cocoa farmers, information, rehabilitation, Nigeria.

INTRODUCTION

Nigeria was among the leading cocoa producing nations until oil discovery in early 1970s. This trend changed when oil was discovered in the early 70s and till date, attention given to agricultural sector and cocoa industry in particular is grossly inadequate. Cocoa production over the years has declined due to neglect suffered by agri-cultural sector. Cocoa, mostly produced from obsolete varieties and overage trees, is stagnant at around 180,000 tons annually; 25 years ago it was 300,000 tons (Wikipedia, 2009).

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In response to the neglect, cocoa farmers abandoned their farms and shifted focus to other areas. This behaviour adversely affected cocoa industry; in the area of yield, marketing and price of cocoa hence most cocoa plantation in Nigeria is characterized by the presence of old cocoa trees having very low yield (Vos and Krauus, 2004 and Ojo, 2005).

In response to this development Cocoa Research Institute of Nigeria (CRIN) developed various rehabilitation techniques for the purpose of regenerating old cocoa trees on cocoa plantation in Nigeria. To achieve this, CRIN considered information transfer on CRTS a significant approach through the collaboration of other organisations in Nigeria.

Umar et al. (2006) posited that, communication is significant to any teaching it is vital tool for promoting knowledge flow, information dissemination and delivery of learning content in extension services. He further stated that, communication in extension is defined as a process of interaction to transmit information, ideas, technology and feelings etc from extension agents to the farmers which result in a changed situation.

Uwagboe et al. (2006) opined that information on new technologies and innovations reaches a larger proportion of farmers through personal contacts such as visits from extension agents while electronics and other mass media methods are scarcely used; the high cost of print media and time slots through electronic and other mass media methods are inappropriate and inconsistent government policy could be identified as reasons for the high reliance on personal contact especially in developing countries (Van Woerkun, 2002).

Uwagboe et al. (2006) stated that interpersonal communication is regarded to be an effective but not sufficient method of bringing about change especially among the rural poor. Leeuwis (2004) opined that some other functional qualities in personal communicative intervention strategy include the following amongst others;

- In-depth dialogue: all parties involved in social transformation including extension agents and farmers bring relevant experiences and ideas and receive appropriate feed back. This means issues can be dealt with in-depth
- Active learning and opinion formation: Some interpersonal forms of communication are particularly suited for supporting active learning and opinion formation/change in connection with problem solving.
- Tailor-made: Small group meetings make it possible to deal with the specific problems, concerns and circumstances of individuals
- Collective issues: Change agents are able to tackle problems that can only be resolved by collective action or simultaneous behaviour changes; hence group pressure can be capitalized upon to foster change.
- Time flexibility: Interpersonal contact promote flexibility in time during interaction with farmers, thus can be adjusted to suit different groups of individuals.
- High spatial flexibility: Meetings can take place in diverse environment such as farmers' field, farmers' homestead, markets and community centers. This makes it possible to adjust the meeting place to the preferences of audiences especially when demonstrations of technical aspects of certain farm practices are required.
- High related support: It is possible for change agents to develop relationships with particular audiences and express personal involvement with people and issues.

Information transfer of technologies always assists farmers or end users to have access to developed technologies. The objectives of developing any technologies would not be fully achieved if such technologies remain on shelf on never got to the audience they are meant for. Hence the development of CRTs by CRIN will be a wasted effort if these techniques do not get to cocoa farmers' farms, for the regeneration of their old cocoa trees. Hence this study assessed the information sources to cocoa farmers on the use of CRTs developed by CRIN for cocoa rehabilitation in Nigeria.

OBJECTIVE

Objective of the study

The main objective of the study is to identify the information sources to cocoa farmers on cocoa rehabilitation in Nigeria.
The specific objectives are to:

- determine the personal characteristics of cocoa farmers in Nigeria;
- ascertain the information sources to cocoa farmers in selected states on cocoa
- Rehabilitation;
- identify the farming characteristics of cocoa farmers in Nigeria; and
- find out factors influencing farmers' access to information in Nigeria.

Hypothesis of the study

There is no significant association between the personal characteristics of respondents and the information sources to cocoa farmers on cocoa rehabilitation

METHODOLOGY

Multistage random sampling technique was used to select five States out of the fourteen cocoa producing states in Nigeria. The selection was based on the production capacity of the states and the agro ecological zones of these states. Five states namely Edo, Ondo, Cross River, Taraba and Kwara were selected for the study. Ondo and Edo from the South Western agro ecological zone, Cross River from the South Eastern zone Taraba from North East zone and finally Kwara from North Central zone. Secondly, twenty per-

cent of Local Government Areas (LGAs) planting cocoa in selected states was randomly chosen to obtain 12 LGAs. Then, three wards were randomly selected in each LGA to give a total of 36 wards. Finally, 10 percent of cocoa farmers in high and medium and 20% from low cocoa producing states in selected wards were randomly selected to give 381 cocoa farmers. Data for the study was collected through the use of well-structured questionnaire and interview schedule. Out of the 381 questionnaires administered, only 281, which represent 73.8%, were found useful for the study's analysis.

RESULTS AND DISCUSSION

Personal characteristic of respondents

Age of respondents: Figure 1 shows that the average age of cocoa farmers in the selected states is 53.4 years. The figure also revealed that youth involvement is higher in cocoa production in Cross Rivers State compared to other states investigated, hence there is need to encourage youth involvement in cocoa production in the country. This implies that cocoa farmers are getting older and replacement by younger ones is needed. The presence of older farmers on the farm will negatively impact on labour availability. This is in line with Ladele (1998) when it was reported that many rural areas have been left to the women and the old men and lacking in manpower since the active population have left in search of greener pastures.

Educational qualification of respondents: The results in Table 1 reveal that the educational status of the respondents is low. Majority of the respondents (49.5%) have secondary school as their highest educational status, 11.4% do not have any formal education while few (14.2%) have attained tertiary education level. Although the study reveals a different trend in Cross Rivers State where about (34.5%) of the respondents have attained education higher than secondary school level. This suggests that cocoa farmers have relatively low educational level, a trend that could negatively impact on the adoption level of the respondents since literacy level influence rate at which respondents will adopt CRTs. The situation suggests that proper handling of CRTs by low literate target population requires choice of appropriate communication media, particularly, non-literate dependent communication media.

Marital status of respondents: Figure 2 presents the data collected on marital status which shows that majority (81.9%) are married, (6.4 %) widowed, (8.5%) single while (3.2%) did not indicate their marital status. The high proportion of married respondents shows that more members of farm family are likely going to be available for cocoa production in the study area. This is a development in positive direction because farm family members will be available to assist on the farm and this will help to reduce the money spent on labour to work on the farm. Farm labour force used to be restricted to family population and the size of active family members. Family

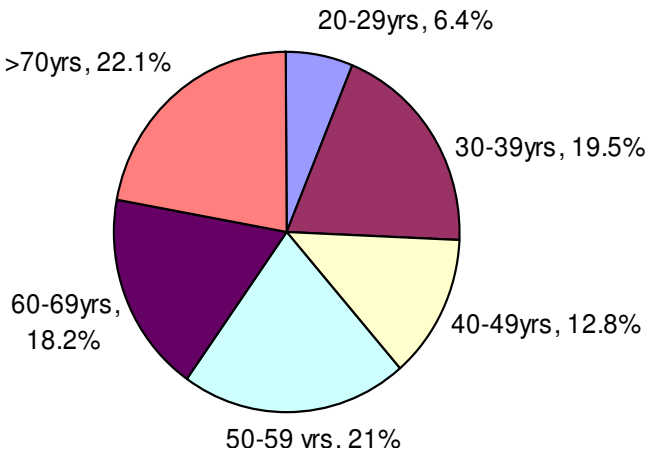

Figure 1. Pie chart showing distribution of cocoa farmers' average age across all states. Source: Field survey 2006.

labour is still an important component of labour for small farmers (Awe, 1995). He further posited that by virtue of large family size, there is pressure on land, which has become fragmented, and hence small farm holdings abound. The effect is that such farmers who are constrained by inadequate land area may not readily adopt an extension package that requires large scale farming. Although it could also imply that, youth's involvement in cocoa production is relatively low as shown in Figure 1, across all the states where more than 75% of respondents are married.

Respondents membership of organizations: This section presents the level of involvement of cocoa farmers in farmers' organisations. Table 2 shows cocoa farmers'organisations membership in Nigeria. The finding reveals that many (58.1%) of cocoa farmers belonged to one organization or the other. The remaining 41.9% did not belong to any organization. It is noticed that many of the cocoa farmers in Edo and Taraba states do not belong to any social or farmers' organisations. The 58.1% that belong to farmers' organisations is a development in positive direction. Some variation was noticed among states. In Ondo state, most (80.3%) of the cocoa farmers belong to farmers' organizations. For Kwara and Cross River states, organizational membership was relatively high, but very low in Edo and Taraba where 55.4 and 63.3% respectively of the cocoa farmers do not belong to any organisation. According to many of the farmers who do not belong to any association, the trend was attributed to previous disappointments experienced in the past as a result of unfaithfulness of farmers' organisations executive's members. This implies that efforts have to be made by important stakeholders in cocoa production to encourage formation of farmers' organizations in the cocoa producing states of Nigeria. This is necessary because according to Yahaya and Omokhaye (2001), the social participation of cocoa farmers through their involvement in farmers' co-operatives will enhance diffu-

Table 1. Frequency distribution of cocoa farmers' educational qualification.

Educational Qualification	Ondo		Edo		Kwara		C/Rivers		Taraba		Overall	
	F	%	F	%	F	%	F	%	F	%	F	%
No formal education	8	10.5	9	13.8	5	9.6	8	13.8	2	6.7	32	11.4
Adult Education	14	18.4	8	12.3	11	21.2	12	20.7	4	13.3	49	17.4
Voc. Education	5	6.6	4	6.2	5	9.6	3	5.2	4	13.3	21	7.5
Pry Uncompleted	8	10.5	4	6.2	8	15.4	1	1.7	2	6.7	23	8.2
Pry. Completed	8	10.5	10	15.4	7	13.5	4	6.9	3	10.0	32	11.4
Sec. Uncompleted	17	22.4	18	27.7	7	13.5	0	0.0	8	26.7	50	17.8
Sec. Completed	7	9.3	8	12.2	6	11.5	10	17.2	3	10.0	34	12.1
Tertiary Education	9	11.8	4	6.2	3	5.7	20	34.5	4	13.3	40	14.2

Source: Field Survey 2006.

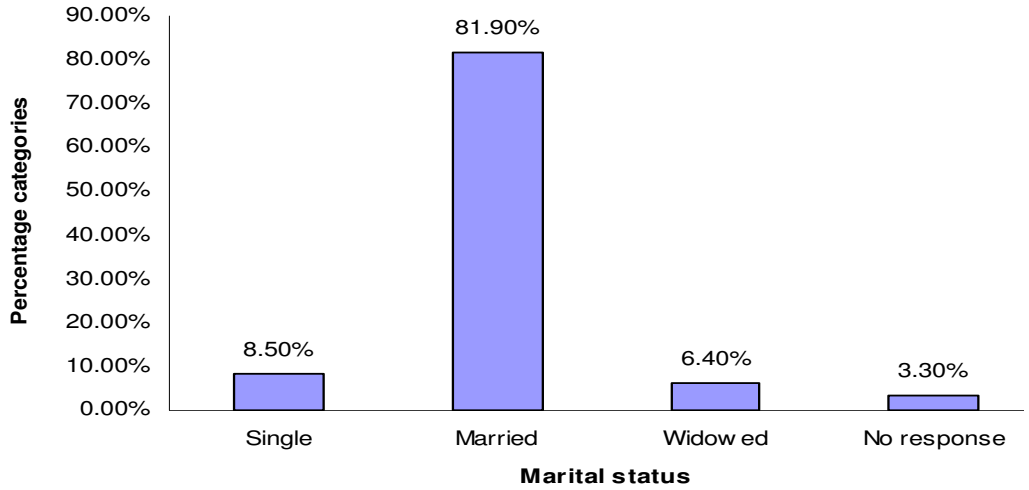

Figure 2. Bar chart showing distribution of cocoa farmers' by marital status.
Source: Field survey 2006.

Table 2. Frequency distribution showing cocoa farmers' organisation membership.

Organisation membership	Ondo		Edo		Kwara		C/Rivers		Taraba		Overall	
	F	%	F	%	F	%	F	%	F	%	F	%
None	15	19.7	36	55.4	21	40.4	27	46.5	19	63.3	118	41.9
Ordinary members	51	67.1	25	38.5	28	53.8	26	44.8	7	23.3	137	48.8
Executive members	10	13.2	4	6.1	3	5.8	5	8.7	4	13.4	26	9.3
Total	76	100	65	100	52	100	58	100	30	100	281	100

Source: Field survey 2006.

sion of information among the farmers, which is a positive development. Also their involvement in social organisations will enhance their access to government assistance in form of loan and other inputs.

Information sources to cocoa farmers in Nigeria

Frequency of extension contacts to respondents: The effectiveness of extension organisations providing information to cocoa farmers on rehabilitation will play a significant role in the level of farmers' accuracy with respect to cocoa rehabilitation. The study in Table 3 identified various organisations providing information to cocoa farmers at different level of frequency.

Frequency of extension contact was measured in the study at 4 levels namely:

Table 3. Frequency of extension contacts to respondents.

Extension media	Mean values ($\overline{X}$) of frequency of extension contact					
	Ondo (n=76)	Edo (n=65)	Kwara (n=52)	C/River (n=58)	Taraba (n=35)	Overall (N= 281)
ADP	1.10	0.57	1.02	0.90	0.23	0.81
Min. of Agric.	0.43	0.33	0.15	0.34	0.02	0.15
Research Institute	0.11	0.22	0.07	0.40	0.01	0.09
Non Govt. Organisations	1.70	1.07	1.69	1.40	0.01	1.49
Farmers Association	0.66	0.63	0.19	0.31	1.37	0.58
Radio	2.83	0.57	2.79	2.88	1.87	2.71
Television	2.07	1.52	1.94	1.98	0.63	1.73
Newspapers	0.04	0.07	0.04	0.17	0.03	0.06
Tree Crop Unit/Cocoa	0.48	0.50	0.37	0.31	0.06	0.04
Development. Unit Hand bills/bulletin	0.14	0.09	0.08	0.03	0.07	0.10

Source: Field survey 2006

Not at all = 0, rarely = 1, frequently = 2, and very frequently = 3.

The score for extension contact of the various extension organisations ranges between 0 and 3. Hence, the higher the mean score the higher the frequency of contact of each of the extension organisations. Therefore organisation with mean value ($\overline{X}$) = 2.71 performs better in term of frequency of visit than organisation with mean value = 1.73.

Many organisations provide information to cocoa farmers in Nigeria; these organisations include ADP, Research Institutes (CRIN), Non-governmental organisations, Farmers' associations and TCUs / CDUs. Also farmers obtain information from radio, television, handbills/bulletin and newspaper. From the mean value of frequency of extension contact in Table 3, majority of the farmers obtained information from radio ($\overline{X}$ = 2.71), television ($\overline{X}$ = 1.73), non-governmental organisations ($\overline{X}$ = 1.49). Organisations with low mean value of frequency of extension contact include, newspaper ($\overline{X}$ = 0.06), TCU/CDU ($\overline{X}$ = 0.04) and bulletin /handbills ($\overline{X}$ = 0.10). The findings above showed that many organisations expected to provide information on CRTs have a long way to go.

Farming characteristics of cocoa farmers in Nigeria

Age of cocoa trees: In cocoa rehabilitation, the age of cocoa tree is one of the factors that determine whether the farm is due for rehabilitation or not. An old tree will definitely lose its productivity and will need to be rejuvenated. This section presents the age of most cocoa trees in selected states of Nigeria.

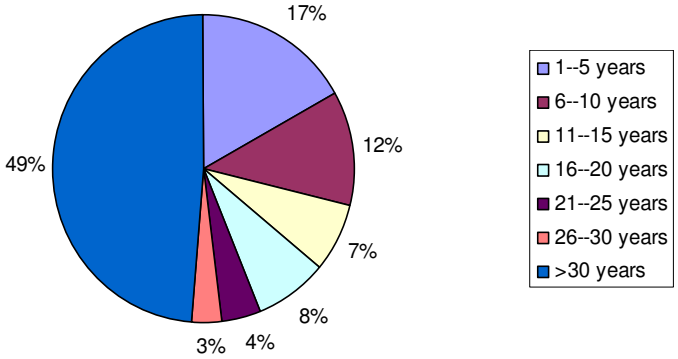

Figure 3. Pie chart showing distribution of cocoa tree age in Nigeria.
Source: Field Survey 2006.

From the results shown in Figure 3, the data collected across the states revealed that many (49%) of the cocoa trees are already above 30 years old. This suggests that many of the cocoa farms are already old. This is in agreement with Vos and Krauus (2004) when it was reported that most cocoa trees in Nigeria are old and abandoned by cocoa farmers. A sharp difference was noticed in Cross River State as shown in Table 4 where 41.4% of the respondents claimed to have cocoa trees with age range 1 - 5 years. The situation in Cross River suggests that there are new entrants in to cocoa farming in the state or it could be attributed to the rehabilitation campaign embarked upon by the state government during which young cocoa seedlings were freely distributed to cocoa farmers and in some cases at a subsidized rate. Table 4 shows the overall situation with respect to ages of cocoa trees in the study area. The study shows that cocoa trees are generally old since 48.4% of the respondents have cocoa trees that are over

Table 4. Frequency distribution showing ages of cocoa tress across selected states in Nigeria.

Age of trees	States											
	Ondo		Edo		Kwara		C/Rivers		Taraba		All States	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
	10	13.2	6	9.2	4	7.7	24	41.4	5	16.7	49	17.4
	8	10.5	3	4.6	5	9.6	8	3.8	10	33.3	34	12.1
	6	7.9	4	6.2	3	5.8	3	5.2	4	13.3	20	7.1
	8	10.5	3	4.6	6	11.5	3	5.2	2	6.7	22	7.8
	6	7.9	6	9.2	4	7.7	4	6.9	0	0.0	20	7.2
	38	50.0	43	66.2	30	57.7	16	27.5	9	30.0	136	48.4
	76	100	65	100	52	100	58	100	30	100	281	100

Table 5. Chi square analysis showing the association between the personal characteristics of cocoa farmers and information sources on CRTs in selected states of Nigeria

Personal Characteristics versus information sources	χ^2	df	CC	P	Dec
No of Children	1.45	2	0.13	0.48	NS
Marital. Status	0.38	1	0.07	0.53	NS
No. of Wives	0.57	3	0.08	0.74	NS
Sex	10.7	2	0.35	0.05	S
age	8.42	4	0.47	0.04	S
Educational. Status	2.40	3	0.25	0.04	S

30 years old on their farms. This is in line with Ojo (2005) who opined that many of the cocoa trees are over 40years old and many of the farmers are even older.

Hypothesis of the study: Table 5 is the relationship between personal characteristic of respondents and sources of CRTs in the study area. Age (χ^2 = 8.42, p = 0.04), educational status (χ^2 = 2.40, p = 0.04) and sex (χ^2 = 10.7, p = 0.05), were found to be significantly associated with the information sources of cocoa farmers on cocoa rehabilitation techniques in selected states of Nigeria. The significant association between sex and information could be attributed to the fact that in most rural communities, men have more freedom to move about to get information and this may likely affect their sources of information. On the association between age and information sources, the younger farmers would most likely be willing to spend more to obtain information on improved technologies compared to the old farmers. Hence age may have effects on the information sources on a particular technology.

Lastly, the level of education usually affects individual eagerness to learn about new things and to adopt them; consequently the educational status of people could have an influence on their willingness to learn about new things. This study is in agreement with Alfred S. D. and Fagbenro O.A. (2007) who reported that level of education and experience in fisheries business of the respondents are significantly related with their perception on the availability and the affordability of the information sources; while age also significantly relate with the affordability of the sources. These might imply that education and experience equip farmers with the required knowledge and enlightenment to identify and evaluate sources of information so as to be able to decide which ones are economically feasible and practicable. Age might also have been significant, since, age is a determinant factor of experience. The older farmer who has been in the fisheries business for instance, for a long period should be able to make experiential decision on sources of information they have been accustomed to over the period.

Conclusion and Recommendations

Based on the findings from the study, it was concluded that the organisations providing information mostly to cocoa farmers in Nigeria are radio stations, television stations and Non governmental organisations. It was also concluded that cocoa farmers in the study areas were old and had aged trees. The study therefore recommended that organisations having mandate on cocoa like CRIN and CDU/TCU should make more efforts to ensure various cocoa rehabilitation techniques are adopted by cocoa farmers in the country, for the lost glory of the industry to be restored. Also, there is the need to make conscious efforts to encourage youth's involvement in cocoa industry since youths interest in the crop is declining. This can be achieved if main actors of the crop can work in collaboration with the government to produce

basic amenities that will attract youths in the cocoa growing communities.

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