

# On-Farm Evaluation of Cocoa Rehabilitation Techniques Adopted Among Trained Cocoa Farmers in South-West Nigeria

*Oloyede, Amos Adegbola<sup>1</sup>; Okeniyi, Michael Olusayo<sup>2</sup>; Oluyole, Kayode Akanni<sup>3</sup>; Adedeji, Abiodun Rasheed<sup>4</sup>; Adebisi, Solomon<sup>5</sup>*

<sup>1</sup>Principal Research Officer, Agronomy Department, Cocoa Research Institute of Nigeria, Ibadan, Oyo State, Nigeria.

<sup>2</sup>Chief Research Officer, Crop Protection Department, Cocoa Research Institute of Nigeria, Ibadan, Oyo State, Nigeria.

<sup>3</sup>Chief Research Officer, Economics Department, Cocoa Research Institute of Nigeria, Ibadan, Oyo State, Nigeria.

<sup>4</sup>Director, Cocoa Department, Cocoa Research Institute of Nigeria, Ibadan, Oyo State, Nigeria.

<sup>5</sup>Principal Research Officer, Extension Department, Cocoa Research Institute of Nigeria, Ibadan, Oyo State, Nigeria.

Corresponding Author: [omookeniya@gmail.com](mailto:omookeniya@gmail.com)

**Abstract:** - The study was a survey aimed at post evaluating cocoa rehabilitation methods training and the extent of adoption of these techniques by cocoa farmers in south-west Nigeria. A purposeful sampling technique was to select 140 respondents from two cocoa producing Local Government Areas where rehabilitation techniques were already demonstrated. Result showed that 58.57% of the farmers got the training knowledge of rehabilitation techniques from CRIN. Of all the rehabilitation techniques 85.27% adopted planting under old trees, 15.71% adopted coppicing while 1.90% practiced side grafting. 7.15% of the farmers could not any of the rehabilitation techniques. On techniques preferred, 61.43% of the respondents preferred planting under old trees while 21.43% preferred coppicing and 73.33% of the farmers have started harvesting from their rehabilitated plot. Knowledge of cocoa rehabilitation techniques have been imparted into cocoa farmers out of which planting of trees under old trees was adopted therefore, massive production and distribution of seedlings of new hybrid by CRIN in the cocoa producing areas to replace old, moribund and unproductive trees.

**Key Words:** — *Rehabilitation, Coppicing, Side grafting, Techniques, Adoption and Cocoa farmers.*

## I. INTRODUCTION

Cocoa (*Theobroma cacao*) came into West African sub-region from Brazil and was later introduced into Nigeria from Fernando Po by Chief Squiss Ibeningo in 1874 (Ayorinde 1966). Opeke 2005, considered cocoa rehabilitation in two ways. The first is putting a cocoa field back into good condition, while the second way is clearing the old cocoa trees and replanting with young seedlings. He opined that the basic requirement in any situation is to identify the cause of the problem leading to the need for rehabilitation and to device means to remedy it. A plot is considered unproductive if the yield has declined to about the quarter of what is obtainable at the peak period of 10-25 years (Olaiya, 2001) while on the other

hand it was regarded as the process of restoring yield by improved cultivation and management of existing mature cocoa trees (Olaiya, 2010). Oduwole (2001) based his own recommendation on the cost benefit ratio of the plot. Generally speaking, rehabilitation is defined as the process of bringing an unproductive cocoa plot back to economic productivity (Oluyole et al., 2015). According to Olaiya, 2010 low bean yield of 400kg/ha obtainable in most cocoa plantation in Nigeria has been attributed to old age of the plantations and poor management practices. However, in order to bring an unproductive plot into life, rehabilitation process have to be carried out on the plot. Some rehabilitation techniques include (a) Partial replanting (b) Complete replanting or clear felling (c) Phased farm replanting (d) Planting under old cocoa trees (e) Side grafting (f) Coppicing and (g) Top grafting. However, some of these practices were demonstrated on farmers' farms in the study areas about four years ago. Therefore, the objective of his study was to post evaluate these practices on the farmer's farm and to evaluate the extent of adoption of these techniques by the farmers in the study area.

Manuscript revised May 05, 2021; accepted May 06, 2021.

Date of publication May 08, 2021.

This paper available online at [www.ijprse.com](http://www.ijprse.com)

ISSN (Online): 2582-7898

## II. METHODOLOGY

The study was carried out two cocoa producing states in the western part of Nigeria. Specifically, the states are Ondo and Osun. These are the states where rehabilitation techniques were earlier demonstrated among cocoa farmers. In each of the states, two cocoa producing Local Government Areas (LGAs) were selected making a total of four LGAs selected for the study. Purposive sampling technique was used to select 140 respondents from the study area. Structured questionnaire was used to elicit information from the selected respondents. The information collected from the respondents was analyzed with the use of descriptive analysis such as frequency and percentages.

## III. RESULTS AND DISCUSSION

Table.1. showed that 75.71% of the total respondents were of the age of 50 years and below showing that the highest proportion of the respondents were still in active age to carry out rehabilitation technique. Also 91.9% of the respondents were married indicating that there may be more farm hand to be rehabilitate the farms. This is a good development as labour is a major factor in carrying out rehabilitation process. Majority (78.1%) of the farmers are highly experienced on farm work as the proportion has been on farm work for not less than 10 years. However, 83.33% of the farmers are formally educated though only 14.29% had tertiary education while 21.43% completed secondary school education. All these are good indicators towards good adoption of the rehabilitation techniques that was taken to them.

### A. Post Evaluation of Cocoa Rehabilitation Methods

From the post evaluation of cocoa rehabilitation methods carried out by CRIN, the greater proportion (33.81%) of the farmers claimed that they were taught only planting under the tree technique while 7.62 of the respondents indicated that they were taught all the rehabilitation techniques i.e. coppicing, planting under old trees, side-grafting and top grafting. Also, 9.05 % claimed that they were taught complete farm replanting (Figure 1).

58.57% of the farmers claimed that they got the knowledge of rehabilitation technique from CRIN while 12.38% received the knowledge from States Tree Crop Units. 11.43% of the total farmers got the knowledge of rehabilitation from their friends.

Table.1. Socio-economic characteristics of the farmers

Variables	Frequency	Percentage
<b>Gender</b>		
Male	108	77.14
Female	32	22.86
Total	140	100.00
<b>Age of the farmers</b>		
≤ 30	33	23.57
31 – 50	73	52.14
> 50	34	24.29
Total	140	100.00
<b>Marital Status</b>		
Single	9	6.43
Married	128	91.43
Divorced	3	2.14
Total	140	100.00
<b>Farming experience of the farmer</b>		
≤ 10	31	22.14
11 – 30	71	50.71
> 30	38	27.14
Total	140	100.00
<b>Level of education</b>		
No formal education	23	16.43
Incomplete primary education	14	10.00
Completed primary education	38	27.14
Incomplete secondary education	15	10.71
Completed secondary education	30	21.43
Tertiary education	20	14.29
Total	140	100.00

Source: Field survey, 2018

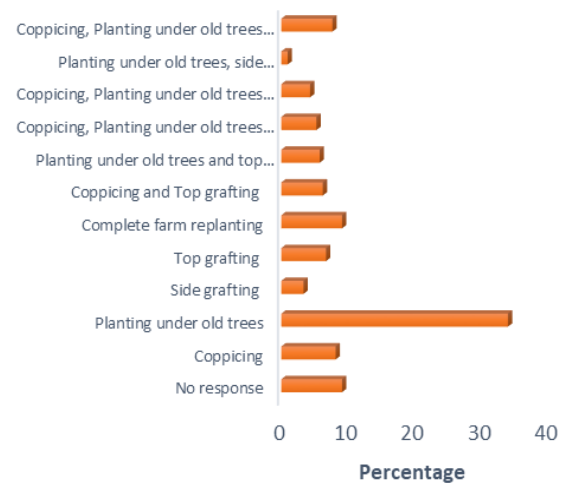


Fig.1. Showing the percentage of types of rehabilitation techniques being taught

The analysis shows that in terms of imparting knowledge on cocoa rehabilitation techniques, CRIN has played a major role (Figure 2).

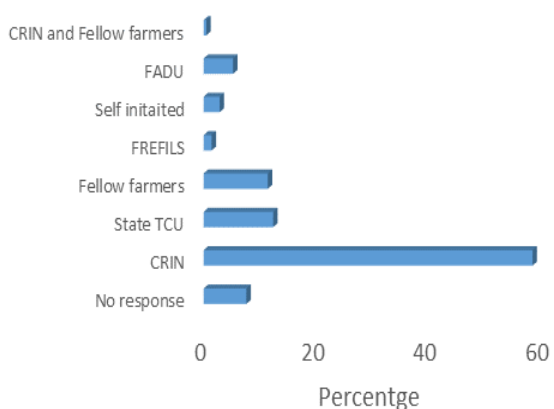


Fig.2. Sources of knowledge for rehabilitation techniques

85.24% of the farmers indicated that they have started practicing rehabilitation techniques on their farms after they have been taught. This is a good development as majority of the respondents adopted the techniques (Figure 3).

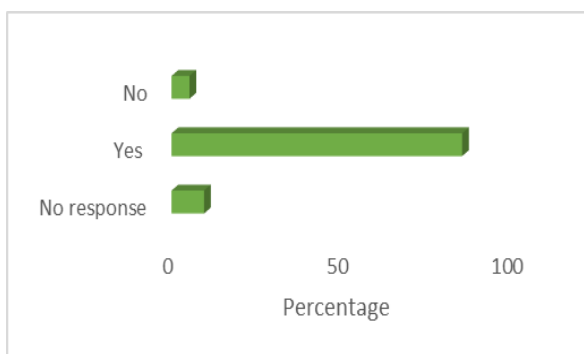


Fig.3. Farmers' response to whether they practice any of the technique taught on their farms

However, of all the rehabilitation techniques adopted, 54.76% of the respondents practiced planting under old trees in their farms while 15.71% practiced coppicing and 1.90% practiced side grafting. This shows that planting under old trees is mostly adopted among the farmers in the study area this is corroborated by the report of Adebisi and Okunlola, (2013) majority of farmers adopted planting under old trees as the farmers consider it simple, ease and is in conformity with their farming system. There is therefore the need for CRIN to generate enough seedlings of improved cocoa hybrid to be distributed to farmers to rehabilitate their unproductive farms (Figure 4).

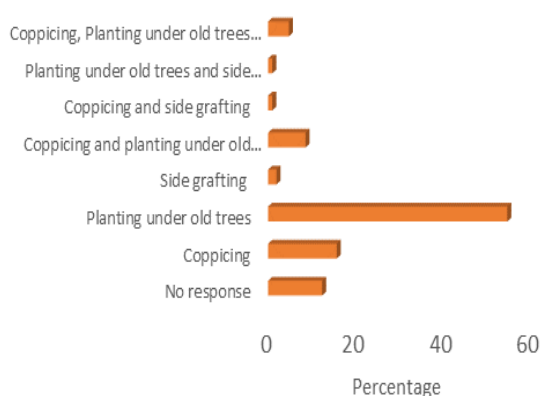


Fig.4. Types of rehabilitation techniques practiced by farmers on their farm after training

A proportion (7.15%) of the farmers claimed that they could not adopt rehabilitation because they are afraid to take risk, some (5.71%) believed that the methods are too technical while 3.81% were of the opinion that the methods are difficult. This is in consonance with the findings of Adebisi and Okunlola, (2013), that most farmers have not been able to adopt most cocoa rehabilitation techniques due to complexity of some of the techniques. (Figure 5).

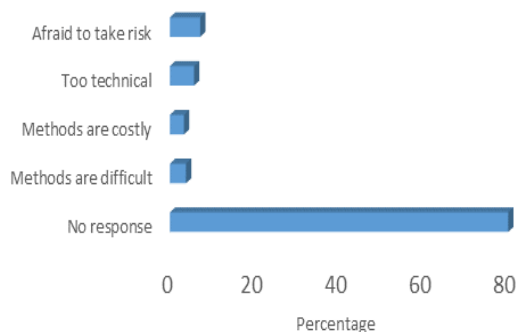


Fig.5. Reasons or not practicing any of the technique on farm

As regards the rehabilitation methods preferred among the farmers, 61.43% of the farmers preferred planting under old trees than any other rehabilitation techniques and 21.43% preferred coppicing (Figure 6).

**IV. CONCLUSION**

Efforts at increasing cocoa yield of farmers as a result of the ageing plantation prompted the training of farmers on rehabilitation techniques of old, moribund and unproductive cocoa trees. Of all the techniques taught which include complete replanting, coppicing, planting under old trees, side and top grafting, planting under old trees was mostly adopted, followed by side grafting. It is therefore recommended that planting under old trees should be encourage among farmers when replacing old, moribund and unproductive cocoa trees.

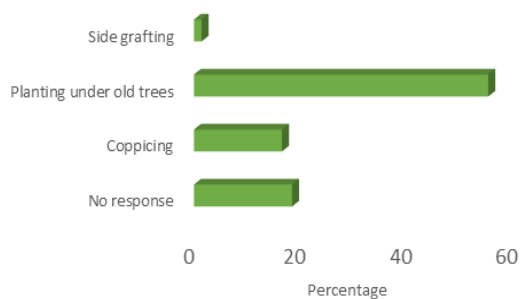


Fig.6. Rehabilitation methods preferred by farmers

Meanwhile, 73.37% of the farmers confirmed that they have started harvesting from their rehabilitation as against 13.81% who did not carry Good Agricultural Practices in the rehabilitated plot (Figure 7).

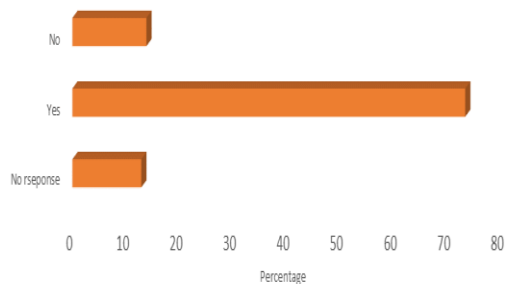


Fig.7. Farmers already harvesting from rehabilitated plot

55.71% of the farmers taught rehabilitation technique indicated that the technique in which planting is made under old trees is the plot where most of the harvesting was carried out when compared to other techniques (Figure 8).

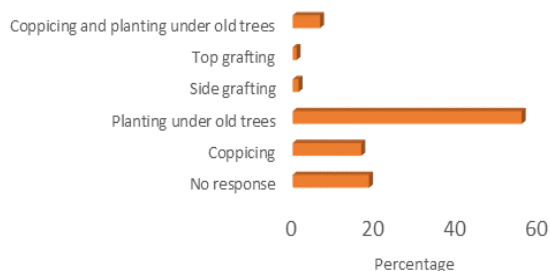


Fig.8. Rehabilitation techniques plot from which farmers harvested

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