

A PERSPECTIVE ON PARTIAL CREDIT GUARANTEE SCHEMES IN DEVELOPING COUNTRIES: THE CASE OF THE NIGERIAN AGRICULTURAL CREDIT GUARANTEE SCHEME FUND (ACGSF).

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ABSTRACT

There is a general consensus that the main reason for the persistent poor performance of the Nigerian agricultural sector is the non-availability or insufficiency of institutional credit for investment in the sector. To encourage lending institutions to increase and sustain lending to the high-risk agricultural sector, a partial credit guarantee scheme for increased securitization of agricultural loans was instituted in 1977. The Scheme, tagged Nigerian Agricultural Credit Guarantee Scheme Fund (ACGSF) commenced operations in 1978 with an authorized paid-up capital of ₦85.5 million subscribed to 60 and 40% by the Federal Government of Nigeria and the Central Bank of Nigeria, respectively. Some new stakeholders such as State and Local Governments, multinational corporations and NGOs now make contributions, through the Trust Fund Model, to the fund available for guaranteeing agricultural loans probably owing to commendable performance by the Scheme. Participating lending banks got up to 75% of the amount in default net of the amount realized from the security pledged. The Scheme covers a wide range of agricultural activities. Since inception, there had been a commendable growth in authorized paid-up share capital, total fund resources, maximum amount of loan obtainable by various categories of farmers, number and value of loans guaranteed, volume and value of loans fully repaid and volume and value of default claims settled. There are remarkable differences in growth rates of volume and value of loans earmarked for different sub-sectors of agriculture and deliberate attention is due to the almost neglected agricultural activities. There was a long-run relationship between number and volume of guaranteed loan and the performance of the agricultural sector. This finding shows that it is important to expand the quantum of funds available for guaranteeing agricultural loans to increase these two performance indicators. Other policy recommendations which have implications for the performance of the Scheme were stated.

Key words: Formal agricultural loans, partial credit guarantee scheme, default management institutions, agricultural development, agrarian economies, Nigeria.

INTRODUCTION

Agriculture has been a vital and dominant sector in the economy of Nigeria. From the early 1950s to the early 1970s, the sector was a source of employment for about 80% of the labour force (World Bank, 1993). It generated foreign exchange earnings which made it possible for Nigeria to finance development projects. Abundant and affordable food emanated from the sector for both domestic consumption and exportation during this period. This ensured a highly stable economy with a low rate of inflation (NISER, 2003).

However, starting from the early 1970s when crude oil discovered in the 1960s began to be exploited and exported, the importance of agriculture began to wane. Attention virtually shifted to the mining sector which increasingly accounted for the bulk of foreign exchange earnings. As a result of inflow of petrol dollars, Nigerians increasingly relied on importation for both food and raw materials instead of investing in and developing the agricultural sector to widen its capacity to provide these commodities. Rather unfortunately, the goose that laid the golden egg (agriculture) was abandoned as most investment went to the mining, industrial and construction sectors. The reason given for this was that returns from agriculture were far lower than that of other sectors. As if to compound the problem of low investment in agriculture in an era in which government was directly involved in financing agricultural production through state farms, public agro-chemicals and agro-processing companies etc, commercial and merchant banks also became increasingly apathetic and reluctant to lend to the agricultural sector. Agricultural loans were classified as low-yielding, high administrative cost and thus, high-risk loans. This situation continued to the extent that by the late 1970s, Nigeria had become a net importer of many of the major food commodities it hitherto exported. Thus, it can be said that the oil boom of the late 1970s brought along with it the agricultural doom which Nigeria is frantically battling to reverse in the last three decades. Apart from the almost total neglect of agriculture in terms of funding, faulty policy reforms and ineffective implementation of potentially sound ones resulting in unintended beneficiaries in the agricultural sector, were also implicated as contributory factors to the present poor performance of the Nigerian agricultural sector (Idachaba, 1995; 2000). The unbridled importation of goods especially food commodities and its attendant demand on the country's foreign account has also placed her balance of payment in a precarious position (NISER, 2003).

The poor performance of the agricultural sector which was first noticed about three decades ago became worsened through inadequate capital investment which culminated in the vicious circle of low farm size, low use of modern inputs, low output and low income (Mafimisebi, *et al.*, 2006). This phenomenon became prevalent and its adverse impacts were magnified because small-scale operators, who are regarded as highly unorganized and poor in resource endowment and managerial skills, preponderate in the Nigerian agricultural sector (Akinwunmi, 1999). These inadequacies notwithstanding, the small-holders account for about 95% of agricultural production in Nigeria (Olayide, 1980, World Bank, 1993; 1996). To remedy the problem of persistent low performance of the agricultural sector, there is the need for injection of capital into agricultural activities since the funds required for farm expansion and greater use of modernized and improved inputs could not be provided by the resource-poor farmers owing to widening demand-supply gap for investible funds in the rural locales where most of these peasant farmers reside (Olayemi, 1999; Udoh, 2002 and Mafimisebi *et al.*, 2006).

In recognition of the indispensable role of credit in the development of Nigerian agriculture, a government-sponsored, credit-granting institution exclusive to the agricultural sector (The Nigerian Agricultural Co-operative Bank, NACB) was established in 1973. Further efforts targeted at providing institutional credit for agricultural purposes and bridging the credit

gap included mandatory opening of branches of commercial banks in rural areas for easy and enhanced access to institutional credit by farmers. In addition to this, commercial and merchant banks were also mandated by the Central Bank of Nigeria (CBN) to commit a stipulated proportion (15% and 8% respectively) of their loan portfolios to agriculture. Despite these laudable and potentially workable policies, availability of institutional credit to farmers remained a perennial and hydra-headed problem. The major reason for this was the high default rate of agricultural loans occasioned by low returns compared with other sectors. This problem assumed such an alarming dimension that many commercial banks deliberately refused to comply with the CBN directive on lending to agriculture. They preferred instead to pay the prescribed fines for non-compliance. The persistent problem of paucity of formal credit is reported by numerous researchers to be responsible for peasant farmers' extensive patronage of traditional lending institutions which are characterized by very low credit volume, usurious interest rates and brutal and dehumanizing treatment of borrowers in cases of failure to repay as and when due. On the positive sides of the traditional lending institutions are their timeliness of credit disbursement and waiver of collaterals (Adekanye,1993; Aryeetey,1995; and Mafimisebi et al., 2006).The persistent failure of the conventional and specialized banks to adequately finance agricultural activities in the mid 1970s was a clear evidence that the country was in need of further financial and institutional reforms that would revitalize the agricultural sector by encouraging the flow of institutional credit into it. The unpredictable and risky nature of agricultural production, the importance of agriculture to the national economy, the urge to provide additional incentives to further enhance the development of agriculture and the increasing demand by lending institutions for appropriate risk aversion measures in agricultural lending, provided justifications for the establishment of the Nigerian Agricultural Credit Guarantee Scheme Fund (ACGSF) by the Federal Government of Nigeria.

The remaining part of this paper is organized as follows. Section II deals with the structure, organization and mandate of the ACGSF. In Section III, we carried out a critical performance appraisal of the ACGSF using some selected indices. The problems and prospects of the ACGSF are briefly examined in Section IV. The summary and recommendations are presented in the last section.

II.STRUCTURE, ORGANIZATION AND MANDATE OF THE ACGSF

The Nigerian ACGSF (henceforth "the Scheme" or "the Fund") was set up by the Federal Government Act NO. 20 of 1977. Its purpose was to serve as an inducement to banks (commercial and merchant) to increase and sustain lending to agriculture. Under the Scheme, bank loans to farmers are guaranteed 75% against default. Thus, the Scheme is a partial credit guarantee type. When a default occurs, the CBN; the Managing Agent for the Scheme's day-to-day administration, remits to the participating lending banks, (PLBs),75% of the amount in default, net of any amount realized by the bank from the security pledged (where applicable) by the farmer. This is done after careful verification and approval by the Board of Directors responsible for managing the Scheme. Verified defaults are settled by the CBN from a fund set up by the FGN and CBN for the purpose. At the commencement of operations by the Scheme on April 3rd, 1978, the authorized capital of the Fund was ₦ 100 million; subscribed to in the proportion of 60% and 40% by the FGN and CBN respectively. The proportion of the authorized capital paid up as at the time operations commenced was ₦ 85.5 million.

For the purpose of administering the Scheme, the country, with its then nineteen (19) State structure, was divided into four zones. They were Bauchi Zone (covering Bauchi, Borno, Gongola and Plateau States); Enugu Zone (covering Anambra, Benue, Rivers, Imo and Cross River States); Ibadan Zone (covering Kwara, Ogun, Ondo, Oyo, Bendel and Lagos States) and

Kano Zone (covering Kano, Sokoto, Niger, and Kaduna States). Despite the official recognition of six geo-political zones for political purposes in the early 1990, the earlier four zones for the purpose of administration of the Fund subsists. The only difference now is that the then nineteen States classified into four zones have since metamorphosed into 36 courtesy of states creation exercises in 1987, 1991 and 1996. Thus, more states have been included under each zone and the names of many of the erstwhile states have changed.

Since the Fund is resident in the CBN, there are no separate administrative infrastructures needed for it to function. This is probably made possible by the fact that the PLBs have institutionalized procedures and mechanisms of meeting with the authorities of the CBN for other purposes other than that relating to Fund administration. This has made the Scheme less costly to run in terms of overhead compared with other government-sponsored programmes, policies and institutional reforms which require such capital expenditure. Despite the fact that the Scheme has been under various Boards of Directors (almost 10 since inception) giving an average life span of three years per board, its institutional structure remains essentially the same. Up to December, 1986, when Nigeria adopted an economy-wide reform tagged Structural Adjustment Programme (SAP); loans to agriculture by PLBs were granted at concessionary interest rates.

The general activities covered under the Scheme have witnessed little or no modifications since inception and they include:

- (1) the establishment and or management of plantations for the production of rubber, oil-palm, cocoa, cotton, coffee, tea and other cash crops;
- (2) the cultivation and production of cereals, tubers and root crops, fruits of all kinds, beans, groundnuts, sheanuts, beni-seeds, vegetables, pineapples, bananas and plantains;
- (3) animal husbandry, that covers poultry, piggery, rabbitry, snail farming, rearing of small ruminants like goats and sheep and large ruminants like cattle and
- (4) fish farming (which was included from 1981)

III THE NIGERIAN ACGSF – A PERFORMANCE APPRAISAL

In carrying out the performance appraisal, we considered selected indices. These indices include the authorized and paid-up share capital of the Fund, the total resources, the maximum amount of loan obtainable by various categories of participants, the number and value of loans guaranteed by (i) category of borrowers (ii) geographical location of borrowers and (iii) type of activity (sub-sector of agriculture) involved. Other indices include the volume and value of fully repaid loans and volume and value of default claims. Where made possible by availability of time-series data from CBN publications, the growth rates of these variables were computed as were indicators of stability and correlation. This was with a view to facilitating some policy statements to improve the operations of the Scheme.

The time-series data collected (1978-2005) were analyzed with a combination of statistical techniques. This followed what was done earlier by Udoh et al; (2002) and it includes

- (i) The exponential growth function defined as

$$LG_i = AB^t \dots i = 1, 2, 3, \dots, 12 \dots \dots \dots (1)$$

Where LG_i = number or value of loans guaranteed for the i th purpose in the crop and livestock sub-sectors; t = time trend in years; A and B are the parameters to be estimated,

i = the 12 sub-sectors of crop and livestock included in the analysis.

To estimate growth rate, equation 1 was converted to the linear form

$$\ln LG_i = \ln A + t \ln B \dots \dots \dots (2)$$

If $\ln LG_i = y$, $\ln A = a$ and $\ln B = b$, then equation 2 becomes

$$Y = a + bt \dots\dots\dots(3)$$

Therefore growth rate(r) = Antilog b – 1, i.e. e^{b-1}

(ii) Coefficient of Variation (CV): This is expressed as

$$CV = \left[\frac{\sum (LG_i - \bar{L}G)^2}{(n-1) / \bar{L}G} \right] \dots\dots\dots(4)$$

Where LG_i is as previously defined, $\bar{L}G$ is the mean number or value of loans guaranteed.

(iii) Index of instability (I.I) : This is represented by

$$I.I = \left[\frac{1}{n} \sum (LG_i - \hat{L}G) / \bar{L}G \right] \dots\dots\dots(5)$$

Where $\bar{L}G$ and $\hat{L}G$ are as previously defined and $\hat{L}G$ = predicted number or value of loans guaranteed.

(iv) Instability Coefficient (I .C) : This is given as

$$I.C = \sqrt{\left[\frac{1}{n} \sum (LG - \hat{L}G)^2 \right] / \bar{L}G} \dots\dots\dots(6)$$

Where $\bar{L}G$, $\bar{L}G$ and $\hat{L}G$ are as previously defined. Equations (4), (5) and (6) are useful in estimating the degree of instability observed in number and value of loans guaranteed for each purpose in the two sub-sectors of crop and livestock.

(v) Correlation analysis: This is helpful in revealing the strength of association between the number and value of loans guaranteed for ith purpose. The correlation coefficient (C.C) is expressed as

$$C.C = \frac{N \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} \dots\dots\dots 7$$

Where X is the value of loan guaranteed and Y is the number of loans guaranteed.

(vi) Multiple Co-integration: We also used the multiple co-integration model to determine whether or not there is a long-run relationship between gross domestic product (GDP) regarded as a proxy for agricultural production and some credit-related factors which included the number and value of loans guaranteed by the ACGSF following what was done earlier by Mafimisebi (2004). The credit-related factors used in the co-integration analysis include

- 1) Federal Government recurrent budget on the agricultural sector (FGRECBA);
- 2) Federal Government capital budget on the agricultural sector (FGCAPBA) ;
- 3) Total volume of loans to the agricultural sector by commercial and merchant banks (TVLACMB) ;
- 4) Total number of loans guaranteed by the ACGSF (TNLGUAD) ;
- 5) Total value of loans guaranteed by the ACGSF (TVLGUAD) ;
- 6) Lending rate to the agricultural sector (LENRAGS in %) ;
- 7) Food importation bill (FOODIMB) ;
- 8) Cumulative number of fully repaid loans since Scheme's inception (CNFRLSI) ; and
- 9) Cumulative value of fully repaid loans since Scheme's inception (CVFRLSI).

Owing to information from the growing literature on the characteristics of time-series data especially that relating to non-stationarity which leads to spurious regression estimates, we first investigated the order of stationarity (or econometric integration) using

the Dickey Fuller (DF) and the Augmented Dickey Fuller (ADF) class of unit roots test as done by Mafimisebi (2002, 2007).

The DF test is applied to the regression of the form below.

$$\Delta P_{it} = \beta_1 + \beta_{2t} + \delta P_{it-1} + \ell_{it} \dots\dots\dots 8$$

Δ = first difference operator

P_{it} = variable which series is being investigated for stationarity

t = time or trend variable

The null hypothesis that $\delta = 0$ implies existence of a unit root in P_{it} or that the time series is non-stationary. The number of lagged difference terms in equation 1 was increased. The DF test is, in this particular case, called the ADF test and equation 1 modifies to

$$\Delta P_{it} = \beta_1 + \beta_{2t} + \delta P_{it-1} + \alpha_1 \sum_{t=1}^m \Delta P_{it-1} + \ell_{it} \dots\dots 9$$

The null hypothesis of a unit root or non-stationarity is still that $\delta = 0$. The critical values which have been tabulated by Dickey and Fuller (1979), Engle and Yoo (1987) and Mackinnon (1990) are always negative and are called ADF statistics rather than t-statistics. If the value of the ADF statistics is less than (i.e more negative than) the critical values, it is concluded that P_{it} is stationary i.e $P_{it} \sim I(0)$.

When a series is found to be non-stationary, it is first-differenced (i.e the series $\Delta P_{it} = P_{it} - P_{it-1}$ is obtained and the ADF test is repeated on the first-differenced series. If the null hypothesis of the ADF test can be rejected for the first-differenced series, it is concluded that $P_{it} \sim I(1)$. The time series for all the agricultural credit-related variables included in this study were investigated for their order of integration. The maximum number of lags used in the stationarity test was six (6) and the optimal lag for each time- series was selected using the Akaike Information Criterion (AIC).

The Multiple Co-integration Test

Two or more variables are said to be co- integrated if each is individually non-stationary (i.e. has one or more unit roots) but there exists a linear combination of the variables that is stationary. Other attributes of co-integration are as shown in Engle and Yoo (1987) and Silvapulle and Jarasuriya (1994). After the stationarity test, the study proceeds by testing for co-integration between time series of agricultural credit-related variables that exhibited stationarity of same order.

The maximum likelihood procedure for co- integration propounded by Johansen (1988), Johansen and Juselius (1990, 1992) and Juselius (2006) was utilized. This is because the two-step Engle and Granger procedure suffers from the simultaneity problem and the results are sensitive to the choice of dependent variable (Baulch, 1995). Adopting a one-step vector auto-regression (VAR) method avoids the simultaneity problem and allows hypothesis testing on the co-integration vector, r. The maximum likelihood procedure relies on the relationship between the rank of a matrix and its characteristic roots. The Johansen's maximal eigenvalue and trace tests detect the number of co- integrating vectors that exist between two or more time-series that are econometrically integrated. The two variable systems were modeled as a VAR as follows:

$$\Delta X_t = \mu_t + \sum_{i=1}^{k-1} \Gamma_i \Delta X_{t-i} + \pi X_{t-k} + \varepsilon_t \dots\dots\dots 10$$

where:

X_t is a $n \times 1$ vector containing the series of interest (time-series of agricultural credit-related variables)

Γ and π are matrices of parameters

K = number of lags and should be adequately large enough to capture the short-run dynamics of the underlying VAR and produce normally distributed white noise residuals.

ε_t = vector of errors assumed to be white noise.

The findings from the empirical analyses outlined above are discussed under the following sub-headings;

(a) Paid-up Share Capital and Total Asset of the Scheme.

The ₦85.5 million paid-up capital at commencement of operations in April, 1978 increased to ₦ 147.4 million ten years later (31st December, 1988) as a result of investing it in government securities. This is an average annual growth rate of about 7.24%. As at 31st December, 1998, the Scheme's paid-up capital is in the order of ₦ 1.78 billion which gave an average growth rate of 18.34% between 1988 and 1998. By December 31st, 2005, the paid-up capital stood at ₦2.5 billion. The average annual growth rate in this seven year period (1998-2005) was 5.06%. The high growth rate between the period 1988 and 1998 is probably to compensate for the high rate of inflation witnessed during this period in the Nigerian economy which led to an increase in the maximum amount of loans that can be borrowed in each category. The mean annual growth rate of paid-up share capital for the period reviewed (1978-2005) is about 10.21%. This growth rate is comparable to growth rate of funds allocated to other parastatals, agencies and programmes of the FGN where there is a statutory permission to invest earmarked fund in government securities to be able to increase total resources. Examples of such funds are The National Provident Fund, The National Economic Reconstruction Fund (NERFUND), The SME II Loan Scheme and the Small and Medium Enterprises Equity Investment Schemes (SMIEIS). Of the ₦ 2.5 billion paid-up share capital as at end – December 2005, the CBN had fully paid up its share of ₦ 1.33 billion. The FGN was yet to make a full payment of its share subscription and has consistently been defaulting in this respect since inception of Scheme. The situation in which paid-up capital lags consistently behind authorized capital is not encouraging. It is surprising that this problem, first observed at inception, is still a hydra-headed problem of the Scheme. In 1978, there was a 14.5% shortfall in Scheme's resources. This problem has become compounded in 2005 as authorized capital was ₦ 3.25 billion while the capital paid-up was ₦ 2.5 billion which amounted to a 23.1% shortfall in Scheme's resources. The balance of ₦ 0.75 billion amounts to debt owed the Scheme by the FGN. The total resources of the Fund as at end-December 2004 stood at ₦ 4.4 billion. This amount included all accrued earnings on previous investments made in Nigerian Treasury Bills in Six tranches in addition to the paid up capital. By 2005, total Fund resources had increased to ₦ 4.7 billion. This consistent increase and increasing growth rate of Fund resources in the last three years of the period covered in this review is commendable and is an indication of prudent management of Scheme's financial resources.

Owing to feedbacks to the FGN and the Managing Agent (CBN) that the financial resources of the Scheme are still woefully inadequate to support growth in the number of farmers demanding guaranteed loans, the CBN initiated in 2001, the Trust Fund Model (TFM)

as a framework for increased Funds intermediation for agricultural development. Under the model, State and Local Governments, Multinational Oil Companies and Non-Governmental Organizations (NGOs) augment farmers' savings security by placing funds with the PLBs, thereby, helping to mitigate the risks that banks face by lending to agricultural sector borrowers. The beneficiaries under the TFM are normally members of farmers' cooperative associations and informal self-help groups (SHGs). As at end- December 2005, fifteen (15) stakeholders comprising ten (10) State Governments, three (3) oil companies and two (2) NGOs have adopted this model meant to enhance operations of the Scheme and increase its benefits to farmers and the Nigerian agricultural sector. Also, in response to aggressive campaign by the CBN to widen participation, three (3) PLBs joined the Scheme in 2004 bringing the number of participating banks to eleven (11), up from eight (8) in 2003. Also, five (5) of the 669 eligible Community Banks (CBs) joined the Scheme in 2004. Following Board's approval for selected CB's to participate in the Scheme, a capacity-building programme had been organized for 385 CB's desk officers in the six geo-political zones of the country. Thus, modest progress has been recorded in recent years in terms of widening participation in and enhancing the activities and benefits of the Scheme. From the TFM model, the total amount deposited with PLBs of their choice stood at ₦ 1.6 billion (CBN, 2005).

(b) Changes in Loan Ceilings under the Scheme.

In tandem with rising Fund resources and reducing value of the naira due to inflation, there has been a consistent upward review of the maximum amount of loans obtainable by various categories of participants in the Scheme. At inception in 1978, the maximum amounts of loans guaranteed under the Scheme were ₦ 5000 for small-scale farmers, ₦ 100,000 for individual large-scale farmers and ₦ 1.0 million for co-operative societies and corporate bodies. Loans for small-scale farmers were usually uncollateralized. These amounts were increased from time to time to make up for inflation. By 1998, the ceiling on loanable funds to small-scale farmers was reviewed upward to ₦ 20,000. Similarly, individual large-scale farmers could borrow up to ₦ 0.5 million while the maximum for co-operative societies and corporate bodies rose from ₦ 1.0 million to ₦ 5.0 million. This amounted to average annual growth rates of 30%, 40% and 40% for small-scale farmers, individual large-scale farmers and co-operative societies/corporate bodies, respectively. The upward review was carried out to cushion the effect of inflation and to encourage farmers to draw facilities for the expansion of their farms with the ultimate aim of boosting food and cash crop production (NISER, 2003). The damaging rates of inflation witnessed in the country between 1999 and 2001 with its adverse impact on the purchasing power of the naira, led to yet another CBN upward review of guaranteed loan limits under the Scheme for some categories of borrowers in 2002. The limit for collateralized loans was raised from ₦ 0.5 million to ₦ 1.0 million for large-scale farmers while that of co-operative societies and corporate bodies was jacked up to ₦ 250 million from ₦ 5 million. Non-collateralized loan for individual small-scale farmers remained at ₦ 20, 000.

(c) Number of Loans Guaranteed

In line with the consistent upward review in the authorized and paid-up capital and the ceiling on loans obtainable by various categories of participants, there had also been increases in the numbers of loans guaranteed under the Scheme. As at end-1988, a total of 20,284 loans have been guaranteed up from 341 in 1978. The value for 1988 which was 6,504 represented 32% of the total since inception in 1978 and was a record 55.9% increase over that of the preceding year (1987). Thus, 1988 was the year of most spectacular growth in the number of loans guaranteed under the Scheme. This was

probably a result of the fact that the nation was implementing an economy wide programme called SAP in which the agricultural sector was definitely the most impacted. A total of 20,659 loans were guaranteed in 1998 alone while in the last three years, a total of 24, 273, 35,035, and 46,238, loans were guaranteed. This represented an average annual increase of 34.6%.

The result of growth rate and instability in the number of loans guaranteed on sub-sector basis are discussed below.

Table1: Indices of Growth Rate and Instability in Number of Guaranteed Crop Sub-sector Loans.

S/N	Purpose/Activity	Growth Rate	C·V	I·I	I·C
1	Grains	0.333	1.23	0.94	1.75
2	Roots & Tubers	0.325	1.49	0.95	1.92
3	Oil palm	0.135	1.07	0.80	1.43
4	Rubber	0.017	2.67	0.92	2.80
5.	Cocoa	0.307	2.33	0.91	2.52
6	Cotton	0.336	1.61	0.93	2.00
7.	Groundnut	0.443	1.32	0.92	1.72
8	Mixed Farming	-0.227	3.70	0.90	3.76
	All	0.331	1.16	0.95	1.77

Source: Computed · from CBN data

The rate of growth for the crop sub-sector guaranteed loan varied from 0.227 for mixed farming to 0.443 for groundnut while the crop sub-sector's pooled growth rate was 0.331. For the period reviewed (1978-2005), the best four agricultural activities in which the Scheme was active in terms of growth in loan numbers were groundnut (44.3%), cotton (33.6%), grains (33.3%) and roots and tubers (32.5%). These were the activities in which growth rate exceeded sub-sector performance. Mixed farming experienced a growth decline of 22.7% while rubber had the least positive growth index at 1.70% over the period reviewed.

Using variability indices, the three measures; CV, I·I and I·C showed that mixed farming had the highest variation in the number of guaranteed loans while the least variation was recorded for oil palm. Instability index tended to be comparable across all activities except for oil palm in the period reviewed. The activity with the most unstable number of guaranteed loans was mixed farming while oil palm was the most stable. Generally speaking then, there was observed high variability indices for the number of loans guaranteed for various purposes in the crop sub-sector for the period under review. Owing to the fact that majority of Nigeria's peasant farmers practice mixed farming, high variability indices for this purpose could translate into acute shortage of capital for establishment and maintenance of such farms with the consequence that problems are encountered in effectively planning farm activities. This may have the effect of discouraging mixed farming, the most popular farming system among African peasant farmers.

Table 2: Indices of Growth Rate and Instability in Number of Guaranteed Livestock Sub-sector Loans.

S/N	Purpose/Activity	Growth Rate	C· V	I·I	I· C
1	Poultry	-0.007	0.78	0.95	1.45
2.	Cattle	0.188	0.96	0.94	1.54
3.	Sheep/Goat	0.402	1.81	0.43	1.33
4.	Fisheries & others	0.036	1.37	0.81	1.63
	All	0.055	0.61	1.99	2.83

Source: Computed from CBN data

Growth rate in the livestock sub-sector guaranteed loans ranged from -0.007 for poultry to 0.402 for goats/sheep while the pooled growth rate for the whole sub-sector stood at 0.055. This is interpreted to mean that for the period reviewed (1978-2005), poultry recorded a decline of 0.70% per year in the number of loans guaranteed to it while goats/sheep had a 40.2% annual growth rate. The livestock sub-sector had a growth rate of 5.5% annually for the period reviewed. There were positive growth rates in the number of loans guaranteed for other sub-sectors within the livestock industry meaning that their production was encouraged probably at the expense of the poultry industry. The negative growth rate recorded in the poultry sub-sector is rather surprising as the sub-sector, above all other livestock sub-sectors, is characterized by persistently rising cost of management especially in terms of housing, stock, feeds and medication. However, it is conceivable that the scourge of high mortality rate characteristic of the sub-sector may serve as a discouragement to existing and prospective farmers and may indicate that there are fewer farmers seeking loans for poultry production compared with other activities. Owing to its greater dependence on foreign inputs, the poultry industry was more adversely affected by SAP with the consequence that creditors were more reluctant to grant loans to poultry farmers and farmers in turn, became more apprehensive to invest in poultry production. This explains the collapse of many poultry farms during and after the operations of SAP {Aromolaran, 1999; Mafimisebi, 2002b and Udoh et al; 2002}.

The instability indices in Table 2 reveal existence of high level of variability in the number of loans guaranteed for all livestock activities over the years. Though, there is no discernible pattern for each of the three measures; I·I reveals highest variability for poultry and cattle while the least variability was recorded for goats/sheep. This is a further confirmation that the poultry industry was marked with uncertainties in terms of funds availability while goats/sheep was encouraged with injection of more funds into their production. On the whole, high variability indices for the livestock sub-sector are indications that the number of loans guaranteed to the sub-sector had been unstable since the Scheme commenced operation.

(d) Volume of Loans Guaranteed

In response to the persistent upward review in the authorized and paid-up capital of the Scheme and the upward trending maximum loan obtainable by farmers, there had also been increases in the value of loans guaranteed under the Scheme. The value of loans guaranteed in 1988 was ₦ 90.8 million which represented 21.6% of the total of ₦ 420 million from inception in 1978, and a 54.6% increase over the level in 1987. By 1998, the Scheme had guaranteed loans valued at ₦ 1.5 billion and had approved ₦ 252.2 million for payment to PLBs that suffered defaults. In 2002, a loan amount valued at ₦ 1.8 billion had

been guaranteed while about ₦ 728.5 million had been paid out in default claims to PLBs. In the last four years, loans valued at ₦ 1.1 billion, ₦ 2.1 billion, ₦ 2.6 billion and ₦ 3.1 billion have been guaranteed at an annual growth rate of 44.6%. The result of growth rate in the value of loans guaranteed on sub-sector basis is presented in the table below.

Table 3: Indices of Growth Rate and Instability in the Value of Guaranteed Crop Sub-sector Loans.

S/N	Purpose/Activity	Growth Rate	C· V	I·I	I· C
1	Grains	0.237	1.28	0.96	1.77
2	Roots & Tubers	0.408	1.20	1.08	1.81
3	Oil palm	0.344	1.85	0.72	1.51
4	Rubber	0.391	3.05	0.53	1.35
5.	Cocoa	0.447	0.50	0.75	1.54
6	Cotton	0.467	1.55	0.81	1.56
7.	Groundnut	0.557	1.38	0.89	1.71
8	Mixed Farming	-0.382	1.09	1.09	1.83
Total	All	0.226	1.16	1.24	1.85

Source: Computed from CBN data.

As shown in Table 3, the compound growth rates lied between -0.382 for mixed farming to 0.557 for groundnut while that for the whole sub-sector was 0.226. This indicates that mixed farming had a decline of 38.2% in growth rate per year while groundnut recorded an increase of 55.7% per year in terms of value of loans guaranteed. The whole sub-sector had a compound rate at growth of 22.6% per year. Thus, the four fastest growing activities are groundnut, cotton, cocoa and roots and tuber. Growth in value of loans guaranteed (Table 3) seemed to follow the same trend as in number of loans guaranteed (Table 1) as in both cases, mixed farming showed a negative growth rate while groundnut recorded the highest growth rates. The only difference however is that oil palm, rubber and coffee which had positive growth rates lagging behind the compound rate for the whole sub-sector in terms of number of loans guaranteed had now left the position in terms of value of loans i.e. no activity has a positive loans growth rate smaller than the compound growth rate for all sub-sectors.

The instability indices showed rather high levels of instability for value of loans guaranteed under each activity in the crop sub-sector. Using I·I as a reference point, the greatest instabilities occurred in mixed farming and root and tubers crops with index of 1.09 and 1.08 respectively. The least value of 0.53 was recorded by rubber. This is interpreted to mean that the amounts of loans guaranteed for all purposes in the crop sub-sector were highly unstable. The connotation is that agricultural loans/ credit for these purposes witnessed wide fluctuations which may be harmful for planning purposes as observed by Udoh, et al: (2002).

Table 4: Indices of Growth Rate and Instability in the Value of Guaranteed Livestock Sub-sector Loans.

S/N	Purpose/Activity	Growth Rate	C·V	I·I	I·C
1	Poultry	-0.090	0.81	1.64	1.92
2.	Cattle	0.168	1.10	1.14	1.58
3.	Sheep/Goat	0.709	2.98	0.56	1.24
4.	Fisheries & others	0.004	1.27	1.06	1.50
	All	-0.041	0.69	1.91	2.17

Source: Computed from CBN data

Obvious on Table 4 is the fact that compound growth rates ranged from -0.090 for poultry to 0.709 for goats/sheep while for the whole sub-sector, the value was -0.041. In other words, for the period reviewed (1978- 2005), in terms of value of loans guaranteed, poultry witnessed a decline in growth of 9.0% per year while that of sheep/goats increased by 70.9% per year. These results are corroborated by earlier results presented in Table 2 which were attributed to the fact that the poultry industry was experiencing low investments. The whole sub-sector witnessed a decline of 4.1% per year meaning that apart from sheep/goats production, no other activity in the livestock sub-sector received a spectacular encouragement in terms of the value of loans guaranteed to it. The probable reason for this dismal performance in growth rate of value of guaranteed loan is not unconnected with high rate of default noticeable in the livestock industry and the perceived high risks associated with livestock husbandry especially poultry. This is however the *raison d'être* for the Scheme and reducing value of loans guaranteed in the livestock sub-sector owing to increasing or high default rate is like shying away from the mandate of the Scheme. Table 4 revealed no regular pattern for the three measures of instability. However, going by I·C, the table showed that loans guaranteed for poultry purpose was the most unstable while that for sheep/goats was the most stable. The whole sub-sector however showed high level of instability in the value of loans guaranteed to it under the Scheme.

(e) Strength of Association Between Number and Value of Loans Guaranteed

Table 5: Correlation Coefficient Between Value and Number of Loans Guaranteed by ACGSF

Purpose	Correlation Coefficient
Crop Sub-sector	
Grains	0.834**
Roots and Tubers	0.963**
Oil palm	0.677*
Rubber	-0.005
Cocoa	0.899**
Cotton	0.886**
Groundnut	0.819**
Mixed Farming	0.491
All Crop Sub-sector	0.922**
Livestock sub-sector	
Poultry	0.889**

Cattle	0.654*
Sheep/goat	0.923**
Fisheries/ other livestock	0.849**
All livestock sub-sector	0.500

** Significant at 1%, * significant at 5%

Source: Computed from CBN data.

Varying levels of association were revealed on Table 5 between number and value of loans guaranteed for the twelve (12) activities covered. The strengths of association ranged from very strong to weak and positive with the only exception being rubber that had a very weak and negative relationship. Therefore, as the number of loans guaranteed under ACGSF increased, the value of the loans also increased. In the crop sub-sector, the r for all activities was statistically significant at $\alpha = 0.01$ except for rubber and mixed farming. The agricultural activities in which very strong r values were recorded include cocoa, cotton, root and tubers, grains and groundnut. Oil palm showed a statistically significant r at $\alpha = 0.05$ meaning that there was a weak relationship between the number and value of loans guaranteed. The whole crop sub-sector showed a significant strength of association between the number and value of loans guaranteed at $\alpha = 0.01$ and the absolute value of r was greater than that for any single activity.

In the livestock sub-sector, the different activities had significant r values but with different absolute levels of association existing between the number and value of loans guaranteed. The highest r of 0.923 was recorded by sheep/goat activity while the lowest was in cattle (0.654). Unlike in the crop sub-sector, the r was statistically insignificant and its absolute value was lower than that of any single activity. It therefore follows that for the period under review, increase in the number of loans guaranteed in the livestock sub-sector did not necessarily result in a corresponding increase in the amount of loans guaranteed. If such a corresponding increase occurred, it was less than proportionate and therefore insignificant statistically. The reverse was the case in the crop sub-sector in which the value of loans guaranteed increased as the number of loans increased.

(f) Distribution of Loans by Geographical Location, Activity and Size

In terms of geographical spread, loans guaranteed under the Scheme had witnessed considerable disparity as evident by the following zonal groupings as at end- December, 1988. The highest number of loans was guaranteed in Kano Zone which accounted for 39.4% or 2561 loans. Of this number, 2172 or 84.8% were for grains production. Bauchi zone had 2024 loans representing 31.1% of total. About 1585 or 78.3% were for production of grains. Ibadan Zone had 1079 or 16.6% of total loans. About 39.7%, 31.7% and 18.1% were for grain production, roots and tubers and poultry respectively. Enugu zone accounted for 840 loans or 12.9% of total. Grains, roots and tubers and poultry accounted for 44.8%, 28.9% and 12.9% respectively of the total loan volume. Poultry loans were made in all zones. Of the 423 poultry loans, Ibadan, Enugu, Kano and Bauchi zones received 46.4, 25.7, 14.5 and 13.4% respectively. Tuber and root crops loans totalled 695 with 48.4, 34.9, 11.9 and 4.6% going to Ibadan, Enugu, Kano and Bauchi zones respectively. Bauchi, Kano, Ibadan and Enugu received 54.7, 24.8, 11.5 and 9.0% respectively of the 414 loans for cattle fattening. Thirty (30) or 92.3% out of the 33 loans for cotton were made in Kano zone while the balance went to Bauchi. Of the 185 loans for groundnut, 80 went to Kano Zone and the balance was in Bauchi.

In terms of value of loans, as at end- December, 1988, Ibadan zone came first with ₦ 40 million or 44.1% of the total. This was followed By Enugu zone with ₦ 26.75 million or

29.5%. Kano and Bauchi zones had ₦ 14.0 million or 15.4% and N10.0 million or 11.0% loans guaranteed in them respectively. The relatively low value of the loans to Kano and Bauchi zones was due to the fact that the bulk of the loans went to small holder grains farmers who borrowed ₦ 5000 and below. The pattern revealed in this distribution follows what should be dictated by the agro-ecological conditions in the different zones. Thus, the distribution in terms of number and proportion follows the pattern described for 1998 and the last three years of the Scheme. In 2004, out of the 35,035 loans valued at ₦ 2.1 billion guaranteed, 33,011 valued at ₦ 1.85 billion went to the food crop sub-sector. This accounted for 94.2 and 88.9% of total numbers and value of loans guaranteed respectively. Livestock trailed food crops with 1,588 and ₦ 191.6 million or 4.8 and 9.2% of total, respectively. Of the 46, 238 loans valued at ₦ 3.1 billion guaranteed in 2005, the food crop sub-sector accounted for 87.5 and 83.0% of the total volume and value respectively. Livestock followed with 4.5 and 10.0% respectively. Fisheries and others accounted for the balance.

In terms of size of loans, small-scale farmers predominate in the Scheme. In 1988, 80.7% of the number of loans guaranteed went to small farmers who borrowed ₦ 5000 and below as against 72.4% in 1986 and 75.1% in 1987. Farmers who borrowed between ₦ 5000 and ₦ 50,000 accounted for about 16.9% while about 24.0% went to co-operatives/companies borrowing between ₦ 50,000 and ₦ 1.0 million. In 1986 and 1987, the last two categories of farmers received an average of 22.5 and 2.4% of the number of loans respectively. In 1998, and in the last three years of the Scheme, the distributions described above have not changed considerably. In 2004 for example, loans within the range of ₦ 20,000 to ₦ 100,000 accounted for 30,539 or 87.2% of a total of ₦ 2.1 billion. In 2005, out of 46,238 guaranteed loans valued at ₦ 3.1 billion, 28,070 or 60.7% went to small-scale farmers. This accounted for about 65.5% (or ₦ 2.03 billion). The dominance of small-scale farmers in the Scheme is commendable as these farmers have been the focus of government's agricultural policy in the past three decades. This is probably an indication that the Scheme has brought about a positive response by banks to government's directive to lend to small-scale farmers, especially those borrowing N20,000 and below, without demanding tangible securities.

In terms of categories of borrowers, as at end -1988, 96.1% of total guaranteed loans went to individuals, 1.3% went to co-operative societies and 2.3% went to corporate bodies. Looking at value of guaranteed loans received, individuals, co-operatives and corporate bodies received 37.5, 1.6 and 60.9%, respectively. In 1998 and particularly in the last three years covered by this review, there has been a considerable change in this distribution pattern. For example, in 2004, individual borrowers dominated the Scheme with the number and values of loans guaranteed put at 34,912 and N2.0 billion representing 99.6 and 96.5% of the total respectively. In 2005, individual borrowers accounted for 99.0 and 97.5% respectively of the total volume and value of loans guaranteed. Co-operative societies accounted for 0.3 and 1.0% while corporate bodies took the balance.

Considering term structure of loans, short term loans of less than three years continue to dominate lending under the Scheme from inception. As at end-December, 1988, such loans accounted for 97% of total loans guaranteed. Medium term loans maturing between three and five years constituted 2.8% and those falling due in over five years, took 0.2%. This is comparable with the situation in 1987 when short, medium and long term loans accounted for 96.5, 3.1 and 0.4% respectively of total number of loans guaranteed. This distribution pattern has not changed considerably at end-December 1998 and in last three years of the Scheme for which the average distribution was 94.6, 4.4 and 1.0% respectively.

(g) **Number and Value of Fully Repaid Guaranteed Loans and Claims Payment**

A total number of 1234 loans amounting to ₦ 19.8 million were fully repaid as at end-December, 1988. These showed increases of 279 or 22.6% and 17.7 million or 84.9% respectively in the number and value of loans repaid over the preceding year. Banks submitted 156 default claims valued at ₦ 11.84 million bringing outstanding claims to 458 valued at ₦ 33.9 million. The claims submitted were 32.9% higher in number but 0.06% lower in value compared with 1987. Twenty-one (21) of the claims were in respect of loans to company, two and 132 resulted respectively from loans to co-operative societies and individuals. Food crops accounted for 85 or 54.5% of the number of claims, poultry 67 or 42.9%, cash crops 3 or 1.9% and fisheries/others 1 or 1.5%. Out of the total value of default claims, poultry accounted for N7.6 million of 64.4%, food crops ₦ 4.06 million or 34.3%, cash crops ₦ 0.083 million or 0.7% and other livestock ₦ 0.059 million or 0.5%. The cumulative number and value of claims settled was 228 valued at N1.14 million.

By end-1998, 3659 loans valued at ₦ 53.9 million were fully repaid. This represented a shortfall of 18.0% and 12.0% in the number and value of loans fully repaid in the preceding year. As at end 2004, the total number and value of fully repaid loans stood at 26,208 and ₦ 1.17 billion respectively, representing increases of 21.0 and 28.7%, respectively, above the levels in the preceding year. From inception of the Scheme to end- December, 2004, the cumulative volume and value of fully repaid loans was 397,422 or N7.6 billion respectively. Similarly, a total of 278,104 loans valued at ₦ 4.5 billion have been fully repaid as at end 2004. This represented repayment rates of 70.0 and 60.0% respectively. This repayment performance is far better than the case for non-guaranteed agricultural loans which stood at 50.1% in the community banks and 30.5% in the defunct Nigerian Agricultural and Co-operative Banks (Mafimisebi et al; 2005).

A total of 2,061 outstanding claims valued at ₦ 98.0 million was approved by the board of ACGSF and disbursed to participating banks. In 2005, the total number and value of fully repaid loans were 32,519 and ₦ 1.9 billion representing increases of 24.1 and 58.8%, above the levels for 2004. The total number of fully repaid loans from inception stood at 310,623 valued at ₦ 6.4 billion, representing a repayment of 70.0 and 60.1% respectively of the volume and value of loans granted. The Board of ACGSF also approved in 2005, the payment of 2,382 outstanding genuine claims out of the backlog of unsettled claims accrued between 1978 and 1998 valued at ₦ 18.8 million, compared with 2,061 valued at 98.0 million in 2004. However, a total of 1,682 loans valued at ₦ 260.0 million are still undergoing verification by a special taskforce commissioned to accelerate the processing of the backlog.

(h) **Econometric Integration and Co-integration**

The Dickey Fuller and Augmented Dickey Fuller class of unit root tests were applied to the natural logarithms of each variable over the period 1978 to 2005 with an intercept and a linear trend. As shown in Table 6, all the variables accepted the null hypothesis of non-stationarity at their levels at the 5% significance level. On first-differencing, however, the null hypothesis of non-stationarity was rejected in favor of the alternative by all the variables except FGAPBA and FOODIMB. These variables were only stationary on second-differencing; they were therefore not included in the co-integration analysis since they could not be integrated with the others because they were generated by different stochastic processes (Baffles, 1991, Baulch, 1997, Franco, 1999 and Mafimisebi, 2002).

Table 6: Dickey Fuller and Augmented Dickey Fuller Statistic

Variable	At its level I(0)		1 st Difference I(1)		2 nd Difference I(2)	
GDPAGRS	-2.0752	NS	-5.4502	(S)		
FGRECBA	-2.8991	NS	-4.4467	(S)		
FGCAPBA	-2.5924	NS	-2.8604	(NS)	-5.1513	(S)
TVLACMB	-1.9626	NS	-3.8702	(S)		
TNLGUAD	-1.6455	NS	-5.4148	(S)		
TVLGUAD	-2.5704	NS	-3.9192	(S)		
LENGRADS	-1.8610	NS	-5.2282	(S)		
FOODIMB	-1.5543	NS	-2.7245	(NS)	-4.9278	(S)
CNFRLSI	-1.7273	NS	-3.8869	(S)		
CVFRLSI	-1.4913	NS	-3.8927	(S)		

Source: Compiled from print-out of data analysis

Notes: The critical values are -3.6027, -3.6119 and -3.6219 at 95% confidence level for I (0), I (1) and I (2), respectively . If the absolute value of the DF or ADF statistic is less than the tabulated value, we fail to reject the null hypothesis of non-stationarity.

NS means non-stationary and S means stationary.

Consequently, using the Akaike Information Criterion (AIC), the lowest values of the AIC were used to get the optimal lag and the ADF statistics at the optimal lag were compared with the critical values at 95% confidence level. The result obtained showed that all the variables accepted the null hypothesis of non-stationarity at their levels at the 5% significance level. When first-differenced, the null hypothesis of non-stationarity was rejected by all the variables, except FGCAPBA and FOODIMB. The two variables were stationary after the second difference and were then dropped out of our co-integration analysis. They can only be trivially co-integrated with the others and are thus of little interest in the analysis of macroeconomic time series.

The result of the multiple co-integration analysis between GDP and the remaining seven other time series shows that there were at least six co-integration equations at the 5% significance level using the maximal eigen value of the stochastic matrix. Table 7 presents the maximal eigen value test of the null hypothesis showing that there are at most r co-integrating vectors ($r < 0$) against the alternative of one co-integrating vector ($r = 1$). The test statistics (185.5385) is greater than the 95% critical value (55.1400), leading to the rejection of the null hypothesis and indicating that there is at least one co-integrating vector. The null hypothesis of $r < 1$, $r < 2$, $r < 3$, $r < 4$, $r < 5$ against their respective alternatives (i.e $r = 2$, $r = 3$, $r = 4$, $r = 5$ and $r = 6$) were also rejected at their respective 95% critical values (i.e 49.3200, 43.6100, 37.8600, 31.7900 and 25.4200). However, the null hypothesis of $r < 6$ against the respective alternative ($r = 7$) could not be rejected at the 95% critical value, suggesting that there are six co-integrating equations.

Table 7: Co-integrating Likelihood Ratio Test Based on Eigen Value of the Stochastic Matrix

Hypothesis		Test Statistics	95% central value
Null	Alternative		
$r=0$	$R = 1$	185.5385	55.1400
$r \leq 1$	$r = 2$	134.8718	49.3200
$r \leq 2$	$r = 3$	68.5323	43.6100
$r \leq 3$	$r = 4$	44.2908	37.8600
$r \leq 4$	$r = 5$	37.2487	31.7900
$r \leq 5$	$r = 6$	29.2060	25.4200
$r \leq 6$	$r = 7$	12.6190	19.2200
$r \leq 7$	$r = 8$	6.2404	12.3900

Source: Extracted from print- out of co-integration results

Notes: r denotes the number of co-integrating vectors, a maximum of two lags were used in the augmentation, eigen values in descending order; 0.9979, 0.9884, 0.7715, 0.77111, 0.6223, 0.3434 and 0.1878.

On Table 8 is presented the long run unrestricted error correction results for the variables. It shows that only TVLGUAD and TVLACMB were significant at 5% while the other variables were not significant even at 10% significance level. All the variables except TNLGUAD, CNFRLSI and FOODIMB had expected signs and were thus in conformity with *a priori* expectations and were thus consistent with economic theory. In order to get the restricted parameter estimate, the variable with the lowest probability value was removed one after the other and the test re-run after that. For the first test, FOODIMB (-2) with a probability value of 0.9628 was removed. Consequently, variables were removed in decreasing order of magnitude. After the removal of a variable, the test was re-run before another variable was removed. After doing this, the long-run restricted model presented in Table 9 was obtained. The coefficient of determination, R^2 is shown to be 0.5648. Thus, about 56.5% of variations in agricultural sector GDP can be explained by the independent variables TVLGUAD and TVLACMB. The Schwartz information criterion (SIC) improved from 0.01582 to -0.08751 implying that the restricted model carries more information. The F- statistic value is significant at 10% while the DW implies that there is no first order autocorrelation. In the restricted model, TVLGUAD and TVLACMB were both significant at 10%. The error correction term (ECM) of 53.17% shows the rate of adjustment or field back mechanism from short-run disequilibrium and it is significant at 10%. This result confirms that there is a significant relationship between the output of the agricultural sector as proxied by the GDP and total volume and value of loans guaranteed the agricultural sector

Table: 8 Unrestricted Parameter Estimate Results

Variable	Coefficient	Standard error	t- statistics	Probability
Δ GDPAGRS (-1)	0.56073	0.33265	1.68498	0.1236
$\Delta\Delta$ GDPAGRS(-2)	0.29061	0.34471	0.84370	0.4201
FGRECBA	-0.14935	0.24556	-0.60847	0.5587
Δ FGRECBA(-1)	-0.06017	0.16593	0.36809	0.7270
$\Delta\Delta$ FGRECBA(-2)	-0.13108	0.15305	-0.71612	0.4128
FGCAPBA	-0.18234	0.17167	-0.71612	0.4003
Δ FGCAPBA(-1)	-0.11121	0.14426	-0.66461	0.4986

△△FGCAPBA(-2)	-0.18074	0.16413	-0.60112	0.5144
TVLACMB	0.82361	0.32018	2.60391	0.0268*
TVLACMB(-1)	0.61114	0.37914	2.0136	0.0388*
TVLACMB(-2)	0.59230	0.3046	2.0006	0.0409*
TNLGUAD	0.12361	0.16342	0.81623	0.4043
△ TNLGUAD(-1)	-0.01114	0.13114	0.6542	0.4813
△△ TNLGUAD(-2)	-0.09230	0.10102	0.60274	0.4718
TVLGUAD	0.78714	0.30102	2.56084	0.0251*
△TVLGUAD(-1)	0.71121	0.32145	2.63721	0.0326*
△△TVLGUAD(-2)	0.66141	0.31268	2.66841	0.0418*
LENGRAS	-0.11971	0.31117	0.38213	0.7110
△LENGRAS(-1)	0.14543	0.31081	0.46885	0.6505
△△LENGRAS(-2)	0.42438	0.29298	1.45034	0.1890
FOODIMB	0.27373	0.21460	1.27770	0.2353
△FOODIMB(-1)	0.03348	0.16827	0.20006	0.8455
△△FOODIMB(-2)	0.16191	0.21258	0.75792	0.9628
CNFRLSI	0.14826	0.30148	0.72162	0.4162
△CNFRLSI(-1)	0.11114	0.14314	0.68214	0.4333
△△CNFRLSI(-2)	0.01889	0.12316	0.62261	0.4716
CVFRLSI	0.30402	0.2126	1.36851	0.2871
△CVFRLSI(-1)	0.31141	0.2224	1.37201	0.2801
△△CVFRLSI(-2)	0.2336	0.19978	1.19732	0.3204
C	-0.04713	0.19074	-0.24883	0.8049
ECM2(-1)	-1.15371	0.40858	-2.82005	0.0240

Source: Extracted from computer print-out of results

Notes:

* Means significant at 5%

△ Means first difference

△△ Means second difference

R² = 0.7726 F-Stat= 1.652 R²= 0.6448 D-W= 2.008

Schwartz Criterion= 0.01582

Table 9: Results of the long-run Restricted Model

Variable	Coefficient	Standard Error	t- statistics	Probability
TVLGUAD	0.63078	0.19521	3.23217	0.0034**
TVLACMB	0.61847	0.20872	3.44814	0.0052**
ECM2 (-1)	-0.53171	0.17857	-2.97449	0.0063
C	-0.11690	0.06517	-1.76676	0.0886

Source: Extracted from computer print-out of results

Note: **= significant at 1%

R²= 0.5648 R²=0.5446 DW= 1.771

F-Stat= 8.009 Schwartz Criterion= -0.0087

by commercial and merchant banks. However, the effects of these two independent variables on agricultural GDP manifested a year after. The equation for the restricted or under-parameterized model is then specified as

$$\mathbf{DLOG (GDP)= -0.11069 + 0.63078 D LOG (TVLQUAD) + 0.61844 D LOG(TVLACMB) -0.53171 ECM2(-1).}$$

From the econometric results, it is shown that the output of agriculture represented by the GDP of the sector is influenced to varying degrees by a number of factors. In the restricted model, the total number and volume of loans guaranteed to the agricultural sector by commercial and merchant banks were found to be the only significant factors determining GDP.

IV. THE PROBLEMS AND PROSPECTS OF THE ACGSF

A number of problems militate against effective running of the Scheme. They are:

(1) Persistent lag between authorized and paid up capital .The FGN is the more culpable defaulter in this regard. For a government that seeks to revitalize agriculture by channeling institutional credit into it, paying up its full share of the authorized capital needed to secure more commitment from participating banks, should be a matter of priority. This is more so as the number of farmers demanding loans increase year-in-year out while the Managing Agent and PLBs are on the look out for more funds to serve as guarantee against default risk. To stimulate new bodies buying into the credit guarantee Scheme such as State and Local Governments, Multinational oil companies and NGOs, the Federal Government should demonstrate its commitment to the Scheme by fully paying its share of the authorized capital. Although it is understandable that the FGN has other credit programmes such as SMIEIS, NACRDB, from which agriculture also benefits, it is still worthwhile for it to live up to expectations in terms of her shares of authorized capital. This is because the Scheme occupies a unique position in terms of agricultural finance since its commencement in 1978. The fact that the Fund has not been scrapped nor is the FGN contemplating scrapping it in the nearest future is probably tied to its commendable performance. Only few programmes or policies started in 1978 as the Scheme are still in operation in any sector of the Nigerian economy. The Nigerian agricultural sector is particularly noted for the high mortality rate of its policies and programmes (Idachaba, 1995; 2000).

(2) The stagnation of loan ceiling for non-collateralized loans at ₦ 20,000 despite upward review in the other categories is a disservice to small-scale farmers who are responsible for virtually all the locally produced agricultural products in the country. Owing to high inflation rate in the country which reduces the purchasing power of the Naira, there is the need to review upward the loan ceiling for this category of farmers. This is informed by our finding that some non-collateralized loans regarded as bad loans in one year sometimes becomes fully repaid a few years after as the fortune of the farmer improves. Also, we know that the tendency of loan diversion increases when it is below what is required to establish or maintain the farm firm (Mafimisebi, 2006).

(3) The rapidly changing economic environment especially in terms of inflation and value of the naira is a formidable challenge for the Scheme. This necessitates constant upward review of all categories of loans. The consequence of this is that the rate of growth in demand for loans has far outgrown the rate of growth in authorized and paid up share capital and total funds resources. This has led to acute shortage of capital to meet up the level required to guarantee loan demand by the teeming applicants.

(4) There is high incidence of default including deliberate in which a farmer who receives a guaranteed loan simply refuses to repay the loan and diverts it to other uses. The mentality that government's money used in guaranteeing the loan is the farmers own share of the national cake should be eradicated. If the government is trying its best to discourage elite corruption in its various ramifications, farmers should not take this over from them by diverting loans to non-agricultural uses or deliberately refusing to pay up loans when nothing has happened to warrant such.

(5) The non-passage of the amendment bill to the Act establishing the Scheme by the National Assembly. This has made the much desired total overhaul of the Scheme, to ascertain factors that will lead to more satisfactory performance, impossible.

(6) The problem of backlog of unsettled claims some of which span over twenty years is a clog in the wheel of progress for the Scheme. It is highly undesirable for claims by participating banks to lie unsettled for more than two years in an economy like Nigeria's where there is high rate of inflation. Delays in claims settlement tends to erode the confidence of banks in the Scheme and this is probably responsible for the poor growth in the number of banks participating in the Scheme. There were also delays by the Fund in processing default claims arising from failure or slowness by some participating banks in furnishing the Scheme with returns on loans and complying with the established procedure for filing claims stipulated in the Scheme's Guidelines.

(7) The low number of states, local governments, multinationals and NGOs responding to the Trust Fund Model has also limited the quantum of funds available for the Scheme to guarantee loans received by farmers. It is obvious that the share contribution to the Scheme by the FGN and CBN alone cannot cope be with the demand for guaranteed loans nationwide. Since the TFM commenced as a framework for fund intermediation for agricultural purpose in 2001, only about 15 stakeholders comprising 10 State Government (out of 36), 3 international corporations and 2 NGOs have adopted the model as at end-December, 2005 with a total deposit of ₦ 1.6 billion. The response to this call to rescue and resuscitate Nigerian agriculture by contributing to the fund available to guarantee loans to farmers can at best be regarded as poor.

(8) Other problems which affect agricultural development and *ipso facto* the operations of the Scheme include delays by banks in processing and disbursing loans, ineffective of credit delivery machinery, delays by state governments in issuing certificates of occupancy to prospective farmers or farmers who desire to expand their operations, and poor transportation, marketing and storage facilities.

There is the optimism that the present performance of the Scheme in terms of number and value of loans can be surpassed in future years based on the following.

1. With appropriate incentives being made available by the various governments, there is going to be a continued increase in the number of young educated people taking to farming on account of increasing difficulty of securing non-farm employment. This is corroborated by the fact that despite rapid structural changes in the Nigerian economy making agriculture to account for less and less proportion of the GDP, the sector together with its agribusiness counterpart, still provides employment for up to 65% of Nigerians in 2005 (CBN, 2005). Since most of this young people are those with little or no financial resources to support investment in agriculture, they will most probably rely on guaranteed institutional credit from the Scheme.

2. The increase in supply of credit to agriculture following the removal of restrictions on interest rate on agricultural loans, whereby banks could charge up to 22% interest on agricultural loans as other loans, connotes that lending banks will be on the look out for appropriate credit guarantee arrangements under the Scheme. Also, the removal of maximum

lending rates for all sectors of the economy including agriculture will have the same effect of lending banks seeking more protection for their loaned funds from the Scheme.

3. Following banking sector consolidation which has increased the strength and capital base of banks to lend to weak sectors of the Nigerian economy, many banks participating in the Scheme have now come up with innovative products in form of special credit programmes in favour of agriculture in general and small-scale farmers in particular.

4. There is a continued efforts by the FGN and CBN to enlighten the public on the Scheme and getting more stakeholders to contribute to the pool of funds available for guaranteeing agricultural credit. Efforts are also geared at getting more PLBs to comply with new and constantly modified measures aimed at increasing lending to agriculture. The most important of these measures is licensing of more banks to join the Scheme and lend actively to the agricultural sector.

V SUMMARY AND RECOMMENDATIONS

This paper is a perspective on the partial credit guarantee scheme which has been in place in the past 30 years in the Nigerian agricultural sector. We critically examined the justifications for instituting and implementing the Scheme in the country's agricultural sector. The paper also touched on the organization and mandate of the Scheme and carried out an in-depth review of the its performance. The major findings of the study are as follows:

- 1) The main justification for the introduction of the partial credit guarantee scheme was to encourage lending to agriculture by participating banks and by this, stimulate production and productivity gains in the Nigerian agricultural sector.
- 2) The ACGSF as organized in Nigeria is cheap to run because of the fact that the Fund is resident in the CBN meaning that it requires no separate administrative infrastructure since participating banks already have institutionalized procedure and statutory means of meeting with the CBN for reasons other than Funds administration.
- 3) The Scheme covers a wide range of agricultural activities but the need arises to extend it to emerging activities such as bee-keeping, fingerlings hatchery and animal breeding which are becoming important enterprises in Nigerian agriculture.
- 4) A performance review shows that the Scheme is not doing badly and this is probably the reason why no regime has ever contemplated scrapping it since inception. Only very few public programmes of the age of the ACGSF have escaped being merged with another programme, unmerged or totally scrapped in 30 years of existence. There however, exists opportunities to expand its overall activities as are activities in specific sub-sectors.
- 5) The TFM needs to be aggressively popularized and sold to more State and Local Governments, multinational corporations, Non-governmental Organizations and international donor agencies to generate increased Fund resources which can lead to more prospective client farmers being serviced.
- 6) Majority of the clients serviced are small-scale farmers who demand guaranteed short-term loans within the range of ₦ 20,000-N50,000.
- 7) There is a positive rate of growth in the paid-up share capital, total fund resources, ceiling on each loan category, number and volume of loan guaranteed, loans fully repaid and number and volume of claims settled.
- 8) There is a differential rate of growth in volume and value of guaranteed loans in some agricultural activities than in others. While some agricultural enterprises have positive rate of growth, overall growth rate in some sub-sectors were negative. There is a need for deliberate attention to such sub-sectors.

- 9) There is justification for the Scheme to continue operations since this study has established that the volume and value of loans guaranteed have a long-run relationship with the agricultural GDP (a proxy for agricultural sector performance). This connotes that enhanced performance of the Nigerian agricultural sector is tied to the volume and value of guaranteed loans and hence, efficient operations of the Scheme.

For improved performance of the Scheme, the following recommendations are made.

The FGN should, as a matter of priority, pay up its share of the paid-up capital of ₦ 0.75 billion and in fact make extra financial contributions to the Scheme from the excess crude revenue account to increase total resources of the Fund. This is to financially reposition the Scheme for better performance. The FGN should go beyond moral suasion and persuasion to get more State and Local Government and multinational corporations to adopt the TFM and compulsorily make financial contributions to the Scheme to increase its financial base. This will ensure that more funds are available to guarantee agricultural loans advanced by participating banks. Owing to the economic and biological value of animal proteins, there is a need to increase the number and value of guaranteed loans to the livestock sub-sector. Despite the risky nature of the sub-sector, the present situation in which less than 5% and 10% of loan number and value respectively, go to the livestock sub-sector is unacceptable in a country in which there is about 88.9% shortfall in the recommended animal protein consumption per day (Okojie, 1999). One way to remedy this situation is to increase the ceiling on non-collateralized loan in the livestock sub-sector to ₦ 50,000. Also, the term structure of loans should be medium in the least in the livestock sub-sector. Finally, there should be a kind of reward system put in place for guaranteed loan users who utilized loans for stipulated purposes and repaid loans as and when due. Nigeria's national honours should not be the exclusive preserve of statesmen and public political figures, who have made contributions to her national development. Farmers, even the so-called small-scale farmers, who are responsible for about 95% of domestically produced food, are due for such honours. Our farmers should be regarded as our noblest citizens if agriculture is to be truly accorded its pride of place. Such awards should serve as a signal to other loan users to effectively utilize loans, avoid loan diversion and deliberate default which is detrimental to effective running of the Scheme.

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