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AN EVALUATION OF THE IMPACT OF STRUCTURAL ADJUSTMENT PROGRAMME ON THE AGRICULTURAL SECTOR IN CAMEROON

JULY, 1994

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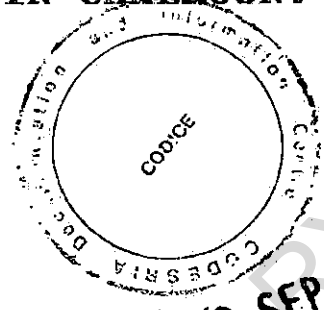

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A Thesis submitted to the Postgraduate School, Ahmadu Bello University, Zaria, in Partial Fulfilment of the Requirements for the Award of a Master of Science Degree in Agricultural Economics

Department of Agricultural Economics and Rural Sociology, Faculty of Agriculture, Ahmadu Bello University, Zaria - Nigeria.

July, 1994

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DECLARATION

I hereby declare that this thesis had been written by me and it is a record of my own research work. It has not been presented before in any previous applications for a higher degree or any reputable presentation elsewhere. All borrowed ideas have been duly acknowledged by means of references and quotation marks.

MEMFIH NTANGSI MAX Date: _____

The above declaration is confirmed.

Dr A.D. BARAU Date: _____
Chairman, Supervisory Committee

CERTIFICATION

This thesis entitled "An Evaluation of the Impact of Structural Adjustment Programme on the Agricultural sector in Cameroon, " by MEMFIH NTANGSI MAX, meets the requirements and regulations governing the Degree of Masters of Science (M.Sc.) of Ahmadu Bello University, Zaria, and is approved for its contribution to Scientific Knowledge and literacy presentation.

DR. A.D. BARAU	DR. M.I. KOLAWOLE
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DEDICATION

This thesis is dedicated to the following persons:

- My late nephew - NTANGSI Jemmy, who passed away at the time I was writing this thesis;
- My Elder brother - DR. NTANGSI Joseph, who had shouldered the financial burden of my higher education and had been responsible for my upbringing;
- My parents in Babanki Tungo for having taken care of me at childhood and
- My friend - Caroline Timbe Nkeng, who has been by my side during the difficult periods of the study and had been comforting me and also stirring me up for bigger achievements.

ACKNOWLEDGEMENTS

I am greatly indebted to my major supervisor DR. A.D. Barau for the devotion and relentless assistance in seeing to the completion of this thesis and in time despite his multiple duties. Similarly, my gratitude also goes to DR. M.I. Kolawole, member of the supervisory committee for his criticisms, comments and propossals on the draft which helped to improve the quality of the work. The comments of DR. J.O. Olukosi, Ms Kate Meagher and Mr. Benjamin Ahmed during the seminar presentation are also aknowledged. I highly appreciate the fatherly treatment of Prof. Ogungbile both as Head of Department and as a lecturer in seeing that I defend the work in time. Dr. Steve Misari's moral support and advice during my stay in ABU are not forgotten.

My appreciation also goes to the World Bank Resident mission in Yaounde and particularly to DR. Ntangsi Joseph and the library staff for providing me with necessary information. I acknowledged also the assistance accorded me by the IMF, UNDP, FAO and CCCE resident missions in Yaounde. My thanks also go to CAPP for allowing me use their documentations.

I am greatly indebted to the staff of MINPAT, particularly those of DSCN; MINFI, particularly the department of previsions; MINAGRI, particularly DEAPA for providing me with needed information. Particular thanks

go to DR. Wawa Ngenge for allowing me use his office during data collection.

My special thanks also goes to the Welang's family for their hospitality and encouragement accorded me anytime I am with them. I also thank all my family relations for the interest they have shown in me. Special thanks go to Messrs. Ntangsi Fidelis and Ntangsi Christopher for their particular interests in my higher education.

It is a pleasure to acknowledge my gratitude to the many colleaques and friends who have been kind enough to offer valuable suggestions and constructive criticisms which have contributed substantiallly to the improvement of this work. It is impossible to mention all of them, but I will like to mention Mrs. Jumai Sule, Ngang Francis Fru, Amuju Suleman and Yusuf Yakub Mahmood.

I acknowledge the effort CODESRIA is putting in assisting thesis writing in Africa through their Small Grants Programme. As one of the 1993 laureats, it helped me immensely although it came very late.

Finally my thanks go to Mr. Olarotimi Bello for sacrifising his valuable time in computerising this work and doing it in grand style.

ABSTRACT

Impact studies usually explore the effects of policy changes on targetted variables over time and thus, show the extent to which they have been successful. This study is a macroecnomic study and it assessed the impact of the structural adjustment programme (SAP) on the agricultural sector in Cameroon. This was done by comparing the performance of the sector before the programme (precisely from 1980 to 1987) to that during the programme (1988 - 1992), that is "the before and during approach" has been used. The analytical tools used in the study were simple descriptive statistics, indices, growth models, multiple regression analysis and particularly the Chow test model to test for structural changes.

Results from the study showed that SAP has had mixed effects on the agricultural sector in Cameroon as it had been the case in other countries. Input productivities have fallen with the implementation of SAP, with labour productivity for cash crop production falling highest. The cash crop subsector has been found to be more adversely affected than the food crop sub-sector with resources shifting from the former in favour of the latter, but the food self-sufficiency ratio had fallen

due particularly to falling food exports during SAP. Growth in some basic variables of the agricultural sector; agricultural GDP, agricultural exports, cash and food crop production, etc have been negative. Growth in input use in this sector was found to be far below the rates before the adjustment programme. In effect, input mix in the production process has changed; that is, there have been structural changes in the agricultural sector during the study period with agricultural finance becoming more important in explaining changes in agricultural GDP than fertilizer which was predominant before the programme.

The basic reasons for the slow response of the sector to policy changes and albeit negative effects of the programme was found to be attributed to a host of factors. The inability of the government in place to effect the changes required, financial difficulties, lack of confidence between the private and public sectors, the contradiction between the short-run stabilization policies of the IMF and the medium and long-term adjustment policies of the World Bank, the conditionalities placed on loan disbursements by the international organizations, etc were the most potent factors.

CITATION

"The process of economic recovery is long and painful, but those who blame the pain on the reform programmes confuse the malady with the remedy. The real causes of today's problems lie in the mistaken economic policies of the past- and if those policies had simply been continued, the situation would be much worse today":

Barber B. Conable. 1991.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

1.1 THE IMPORTANCE OF AGRICULTURE TO THE ECONOMY OF CAMEROON

Cameroon is endowed with abundant and diverse agricultural lands and climates. Its agricultural sector is characterised by a dualism between a traditional subsector providing about 90 percent of agricultural incomes and employing over 90 percent of the sector's labour force, and a modern agro-industrial plantation subsector in which public ownership was predominant by 1987; with the government having acquired control of European plantations at independence (Umalele, 1988). Agriculture has been and will likely continue to be the leading sector in the growth of the economy of Cameroon. Before the oil boom of the late 1970s (precisely from 1978), agriculture's share in the Gross Domestic Product (GDP) and exports was about 30 percent and 80 percent respectively. However, after 1978, its share dropped slightly to about 25 percent of GDP and 53 percent of exports. Agriculture employed about 75 percent of the active population of Cameroon and was a source of living for about 85 percent of the total population by 1989 (MINAGRI, 1990)[1] .

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[1]MINAGRI Stands for the Ministry of Agriculture.

Before 1987, performance in terms of growth of the agricultural sector was relatively higher than for other sectors. Averagely, it has been growing at an encouraging rate of about 4.4 percent since independence (1960) both in terms of agricultural production and transformation of agricultural products as against 4.2 percent for the other sectors (Ntangsi, 1991). The transformation of agricultural products has constituted the point of departure for industrialisation leading to the establishment of industrial complexes such as the Cameroon Development Corporation (CDC), the Upper Num Valley Development Authority (UNVDA), Société de Developpement du Cacao (SODECAO), Société de Développement de Hévèa Cameroun (HEVECAM), etc.

Cameroon is one of the few countries in sub-saharan African (SSA) to have achieved virtual food self-sufficiency although the government has not intervened directly in the food subsector despite its emphasis on food self-sufficiency. In 1990, the food self-sufficiency ratio was about 117 percent (MINAGRI, 1990). Good performance in both the food and other subsectors within the agricultural sector may be

attributed to the country's unusual record of political stability (at a time when most of her neighbours were afflicted with coup d'états), a good natural resource endowment especially for agriculture and most importantly, a cautious economic management of resources during the 1960s and 1970s.

The contribution of agriculture to economic growth and development cannot be over-emphasised. Many economists; among them Rostow (1960), Lewis (1963), Fei and Rannis (1961), Jorgenson (1966 and 1969), Prebisch (1950), Baran (1957), Kuznets (1961), etc have developed models showing in each case the part played by agriculture in economic growth and development. In the case of Cameroon, the part played by this sector in the growth and development of the national economy can be viewed from the following angles.

Firstly, sectorial breakdown of GDP shows that the agricultural sector had been significant. Table 1.1 show sectoral shares of GDP at current prices in FCFA[2] from 1977/78 to 1987/88. From the table, it can be deduced that agriculture's share in the GDP dropped from 31.5

[1]FCFA stands for franc de la communauté Francaise Africaine. It is a legal tender (currency) used in the Francophone African countries of the Franc Zone. Its value is pegged to the French franc at 50FCFA to 1 French franc until January 1994. Whereas it varies in relationship to the US dollars and the Naira.

TABLE 1.1: Sectoral Breakdown of GDP (Value in Billion FCFA) between 1977/78 - 1987/88

SECTOR	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	AVERAG 1983-88
Agriculture												
Value	305.3	359.2	404.4	488.4	586.7	607.1	702.0	790.0	907.9	973.9	932.4	819.2
%	31.5	31.3	28.7	27.2	27.0	23.2	22.5	20.1	24.8	29.0	27.9	24.6
Manufacturing,* Electricity, Gas and Water, Construction												
Value	145.6	217.4	331.1	496.0	393.3	466.0	570.4	687.0	731.3	662.3	644.8	627.0
%	15.0	19.0	23.5	27.6	18.1	17.8	18.3	17.5	20.0	19.7	19.3	18.8
Commerce, Transport, Communication & Banking												
Value	230.2	261.1	292.3	335.9	368.6	439.5	960.0	1264.0	1276.2	1155.9	841.9	990.3
%	23.8	22.8	20.7	18.7	17.0	16.8	30.8	32.2	34.9	34.5	25.2	29.1
Public Administration and other Services												
Value	216.2	243.9	305.9	373.7	432.4	557.3	253.0	290.2	314.5	309.3	461.1	364.2
%	22.3	21.3	21.7	20.8	19.9	21.3	08.1	07.4	08.6	09.2	13.8	11.4
Import Duties												
Value	70.8	64.2	76.5	102.6	126.4	146.8	116.0	121.5	29.3	43.7	227.2	114.1
%	07.3	05.6	05.4	05.7	05.8	05.6	03.7	03.1	00.8	01.3	06.8	3.5
Oil Section												
Value	na	na	na	na	262.9	400.6	500.0	768.0	398.6	211.8	233.9	418.8
%	na	na	na	na	12.1	15.3	16.0	19.6	10.9	06.3	07.0	12.5
Total GDP at Current Prices												
Value	968.1	1145.8	1410.2	1796.6	2173.0	2618.0	3117.0	3922.0	3656.7	3342.0	3341.0	3336.1
%	100	100	100	100	100	100	100	100	100	100	100	100

*Include oil and non-oil extractive industries prior to 1981/82
na = not available
SOURCES: 1. MINPAT: Comptes Nationaux du Cameroun (1980 - 1990)

2. World Bank: Cameroon Agricultural Sector Report - Volume II, November, 1989.

percent in 1977/78 to approximately 20 percent in 1984/85 before increasing to more than 19 percent in 1986/87. Averagely, agricultural GDP constituted 24.6 percent of total GDP between 1982/83 to 1987/88. The declines witnessed between 1982 and 1984 were largely due to the discovery and exploitation of oil and also the prolonged droughts of 1982 to 1985 which affected agriculture adversely.

A second way of showing the importance of the agricultural sector is through the amount of foreign exchange earned by this sector. From 1960 to 1975, the contribution of agriculture to the total export earnings was stable around 70-75 percent, but after 1975, it began to fluctuate. Table 1.2 shows that the share of agriculture to total export earnings fell from 87 percent in 1977/78 to less than 30 percent between 1982 and 1985. This drastic decline can be explained by the low agricultural production during this period caused principally by droughts and equally by the fact that this period corresponded to that of peak oil production in Cameroon, when emphasis and a greater portion of total resources were channelled to the oil sector. Development efforts at this time were concentrated mostly in the oil subsector.

TABLE 1.2: Share of Agricultural Exports (In Percentages)

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88
Non-Agricultural Exports	13	24	38	60	70	72	72	73	64	58	52
Cocoa and Cocoa Products	36	31	20	13	9	9	10	10	12	16	14
Robusta and Arabica Coffee	28	25	23	14	9	11	11	10	14	15	22
Logs and Wood Products	12	11	11	7	5	4	3	3	4	5	4
Ctton and Cotton Products	4	3	4	3	3	2	2	2	2	2	2
Other Agricultural Products	7	6	4	3	4	2	2	2	4	4	6
Total Agricultural Products	87	76	62	40	30	28	28	27	36	42	48
Total Exports	100	100	100	100	100	100	100	100	100	100	100

SOURCE: World Bank: Cameroon Agricultural Sector Report, Volume II, November, 1989.

The increasing role of agriculture to the economy of this country since 1986/87 to present can also be portrayed by considering budgetary allocations to the various sectors between 1979/80 and 1991/92. Only the national budget and that of the primary sector (basically agriculture) have been considered here.

Table 1.3: Budgetary Allocation to the Primary Sector from 1979/80 to 1991/92. (Values in Million FCFA)

Year	Total Budget	Primary Sector Budget	Percentage Primary Sector to Total Budget
1979/80	186600	6034.3	3.2
1980/81	246000	7104.3	2.9
1981/82	310000	8145.2	2.6
1982/83	410000	11094.0	2.7
1983/84	520000	13416.6	2.6
1984/85	620000	16370.1	2.6
1985/86	740000	18924.8	2.6
1986/87	800000	22931.2	2.9
1987/88	650000	22631.3	3.5
1988/89	600000	20906.0	3.5
1989/90	600000	23477.3	3.9
1990/91	550000	23404.4	4.3
1991/92	545000	25243.0	4.6

SOURCE: Ministry of Finance (MINFI): Finance Law (1979/80-1991/92)

These three examples show that agriculture is of paramount importance to the economy of Cameroon. The role of this sector has been increasing since 1986/87 to its level of the 1970s when it was the engine of growth of the economy. Thus, it is necessary that the government adopts policies that will ameliorate production and productivity in the agricultural sector in order to avoid the occurence of the Malthusian Trap[3].

1.2 PROBLEM STATEMENT:

The economic boom enjoyed in Cameroon since 1978 had been short-lived. Since 1985, the fall in the US dollar dominated prices of Cameroon's major export commodities (oil, coffe, cocoa, cotton, etc) and the depreciation of the US dollar have exposed major structural weaknesses in the economy and have plunged it into a deep unprecedented economic, financial and political crisis[4].

[3] Malthus (1798) postulated that food production would continue to grow in an arithmetic progression whereas population was growing at a geometric progression and thus, a bleak future for humanity.

[4] The value of Cameroon exports as well as those of other less Developed Countries (LDCs) are measured in terms of the US dollars. Any change in the value of the US dollar therefore affects export earnings of LDCs.

Between 1985 and 1987, Cameroon's export price index fell by 65 percent for oil, 24 percent for cocoa, 11 percent for coffee and 20 percent for rubber, causing an overall 47 percent deterioration in terms of tade. The balance of payments registered a current account deficit of about 8.8 percent of GDP in 1986/87 compared to a surplus of 3.9 percent in 1984/85 (Ntangsi, 1991).

Although the immediate cause of the crisis was external shocks, the sudden collapse of the economy brought to the surface a number of internal structual problems which had been concealed and aggravated by the fortuitous oil boom. These structural problems resulted from the type of policies which were either adopted or not adopted in the past.

The problems encountered in this sector originated from the agricultural policy that was highly correlated to the political system which was characterised by centralisation, political balance and an alliance between the regime and the elite. A highly centralised government meant a highly centralised agricultural policy making process that gave rise to a paternalistic approach to agricultural development under which the

administration had been deciding what was good for the farmers. Political balance meant that agriculture was invariably constrained by the need to mediate the conflicting interests of various actors to minimize opposition to the regime. The alliance between the regime and elite groups[5] meant that the interests of these groups were considered more pressing than those of the peasantry who formed the bulk of the agricultural population.

One of the constraints on agricultural growth has to do with the balance in the allocation of resources between agriculture and other sectors as well as between the peasant and the estate (public) subsectors. Since independence, the sectoral balance has been heavily against agriculture. Within the agricultural sector, resources have been concentrated in the estate sector, although it accounted for not more than 10 percent of total agricultual output. The results have been disincentives for farmers and increased rural-urban migration and thus a falling agricultural population.

There have been heavy taxation of the agricultural sector since independence and this constitutes one of the major constraints to agricultural growth. Pricing

[5]The elite groups include those at the presidency, the bureaucracy, the military, the business elite and the traditional rulers.

policies have been adopted that have amounted to a direct and indirect taxation of agriculture. Direct taxation has been in the form of export duties and indirect taxation in the form of withdrawals by the National Produce Marketing Board (NPMB). Indirect taxes have generally been heavier than export taxes, especially in years of high world prices. During the period 1970-1985, they varied between 24 percent and 76 percent for cocoa with an average of 48 percent, and between 35 percent and 76 percent for robusta coffee with an average of 49 percent (Ntangsi, 1990). While a small part of the withdrawals have been returned to farmers through input subsidies and other transfers, the larger part has been transfered to the general state budget.

Direct state intervention in the economy had constituted the greatest obstacle to agricutlural development. The creation of public enterprises and parastatals in Cameroon was officially justified on economic and moral grounds. Economically, some activities were considered as strategic and thus could only be efficienctly managed by the public sector due to the incapability of the private sector in mobilising the capital, technology and management skills required. The National Produce Marketing Board (NPMB) as an example of an agricultural parastatal, was entrusted with the

responsibility of marketing of cocoa and coffee together with cooperatives. Through the marketing of these crops, NPMB also played the functions of stabilizing producer prices, the taxation of farmers and the financing of agricultural development. Other state interventions in agricultural marketing have been in the context of inputs and local foodstuffs. Fertilizer, pesticides and small farm equipment were given to farmers at subsidized rates. The National Fund for Rural Development (FONADER) managed credit allocation to farmers and food marketing was understaken by the Food Marketing Mission (MIDEVIV) with the aim of reducing urban food prices. In all the cases, marketing costs have been higher than for private traders and deliveries were unnecessarily delayed and in some cases not made at all. Worst still deliveries were often made to people for non agricultural purposes and at times for free.

Poor implementation of policies constituted a lost to the economy. Implementation is an essential part of policy making in as much as how it is carried out effectively change policy. In Cameroon, the limited resources allocated to agriculture were generally not used efficiently. Expenditure figures concealed numerous uncompleted and abandoned projects and agricultural development programmes which were not implemented as

planned. Poor implementation had not always been due to only unforeseen technical and other problems but also to vested interests that were opposed to adopted policy.

Inappropriate institutional and macroeconomic environment equally constituted a constraint to agricultural growth in Cameroon. The institutions that make and manage policy are as important for agricultural development as the policies themsevles. In Cameroon, there have been institutional proliferation since the 1970s. This has led to overlapping of functions to the detriment of agricultural development.

Agricultural management, consisting of proposing, analyzing and executing policy had been inefficiently undertaken. This had resulted to wastage particularly by the public enterprises. Extension services were fragmented and this led to a struggle between ministries to increase their share of public resource allocations by expanding their activities. The consequence was the proliferation of extension institutions. Stagnant technology for many crops in the face of increasing rural-urban migration has been another severe constraint to agricultural development.

1.3: JUSTIFICATION OF STUDY:

In view of the above distortions in the

macroeconomic, institutional and regulatory environment, the agricultural sector has been faced with problems and the economy has been depending too much on oil since 1978. With oil production already declining, the economy will once more have to revert to agriculture to provide the major impetus for economic growth and development and particularly food production for the growing population.

The Structural Adjustment Programme is a comprehensive policy reform of the existing policy framework and a response to the country's structural problems and external shocks. Given the fixed parity between the FCFA vis-a-vis the French franc, external adjustment through the devaluation of the FCFA was not possible without the agreement of the member countries of the franc zone and France until January 1994. Instead, SAP in Cameroon as different from that of other countries, particularly Nigeria, had been taking place within the context of a fixed exchange rate. It had been based on internal adjustments with emphasis on increased competition, efficiency and a reduction of costs and prices in the economy. More specifically, SAP had been aimed at redefining the role of the state away from direct intervention in the production of goods and services towards a greater reliance on the private sector with the functioning of free market forces. It has also

aimed at removing the distortions in the macroeconomic, institutional and regulatory environments by introducing simplicity and neutrality in the pattern of relative incentives and reducing the anti-export bias, strengthening the country's economic management and ultimately restoring the major macroeconomic equilibra in the medium and long terms[6]. Since its implementation in Cameroon in 1988, the current debate has centred on its effects on the various sectors of the economy. In particular, it has become increasingly important to critically examine how SAP has affected Cameroonian agriculture and consequently rural life. This is more especially so in the face of mounting criticisms from several quarters pointing out the adverse effects of the programmes that come under the umbrella of SAP. Success or failure of the programmes depend to a large extent on the effectiveness of the implementation of the policies and the policies themselves.

Despite the fact that SAP has affected the economy of Cameroon as a whole and the agricultural sector particularly, research work on the effects of the programme on the agricultural sector is scanty. This study is thus aimed at bridging this knowledge gap and is

[6] This means restoring a balanced budget, a positive current account balance in the Balance of Payments, a bearable level of indebtedness and a positive growth in GDP.

structured to answer questions such as;

(i) how was the agricultural sector managed before the adjustment programme?,

(ii) what actually is contained in the SAP package and specifically to the agricultural sector in Cameroon?,

(iii) how has SAP affected agricultural production, productivity and growth?,

(iv) to what extend has the programme been successful?, and a host of others.

1.4 OBJECTIVES OF STUDY

The main objective of the study was to assess the achievements so far obtained under the structural adjustment programme with particular reference to the agricultural sector. The specific objectives of the study were:-

i) to examine agricultural policy before and during the structural adjustment programme;

ii) to determine the performance of the sector before and during SAP;

iii) to determine structural changes in terms of input mix before and during SAP in the agricultural sector, and

iv) to assess the implications of the programme for agricultural development policy and planning.

1.5 HYPOTHESES

Two hypotheses were tested in this study.

(i) There have been declines in agricultural production and productivity in Cameroon since the inception of SAP.

(ii) There have been no differences in input mix before and during SAP.

1.6 PRESENTATION OF THE THESIS

The rest of the thesis is represented in the following sequence. Chapter two is a review of Literature on the theoritcal concepts of agricultural policy in Cameroon, SAP and its policies and some brief literature on the impact of SAP on agricultural production and productivity in other countries. In chapter three, the various forms of analytical techniques used for this study are specified. Empirical results are presented and interpreted in chapter four and finally, in chapter five, the summary of findings, implications, recommendations, conclusion and limitations of study are presented.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION:

This chapter on the review of related Literature is focused principally on two interrelated aspects; theoritical considerations and a perspective of empirical work on the impact of structural adjustment programme on the various sectors of the economy and particularly the agricultural sector. Existing theory is examined within the context of agricultural policy and specifically, the evolution of agricultural policy in Cameroon with the structural adjustment programme forming part of this evolutionary process. Most literature on the structural adjustment programme concentrates more on the policies themselves than on the effects of these policies. Little empirical work has been undertaken in this area of study which seems relatively new particularly to sub-saharan African countries.

2.2 AGRICULTURAL POLICIES

Agricultural policy must form an integral part of a sound national economic policy, which must be aimed at promoting economic stability, efficiency and to raise the real incomes and living standards of the agricultural population (La-Anyane, 1969). Like other national economic policies, agricultural policy depends on certain political, economic and social objectives. One of the

objectives is the maintenance of the maximum number of persons engaged in agriculture and the discouragement of the migration of school leavers from the rural areas to towns. A second objective is the diversification of the production of export crops and the maintenance of a certain degree of self-sufficiency in the production of foodstuffs. The combined effect of these two objectives is to encourage the conservation of foreign exchange within the economy. A third objective is to raise the incomes of the farming community and to improve the efficiency of agricultural production and marketing. Another objective is to close the gap between agricultural production and the demand for foodstuffs from a rapidly increasing population.

The formulation of agricultural policy is very complex. It must endeavour to combine the effects of policies in other fields of ecomomic activity within the framework of political objectives which are be subject to changes. Policies relating to industry, international trade, taxation, subsidization, labour, credit, banking, social services, education, medicine, the law and so on, have all important implications for the determination of the level of agricultural activity. Apart from political changes, the process of economic development is itself a dynamic process and agricultural policy must therefore,

necessarily be dynamic; recognising the need for evolution and change. Agricultural policy should concern the land, labour, capital or investment, enterpreneurship, production, prices, farm incomes and marketing. This should also consider education, nutrition and research, and the general welfare of the people in, and associated with the agricultural industry. Essentially, agricultural policy is initiated by the government for one or both of two reasons; to benefit consumers and/or to provide gain to producers (Heady, 1962).

2.3 EVOLUTION OF AGRICULTURAL POLICY IN CAMEROON (POLICIES BEFORE SAP).

Two phases of agricultural policies in Cameroon could be identified with time periods as the basis of classification into colonial and post-colonial agricultural policies.

2.3.1 Colonial Agricultural Policies

These were policies before 1960. The colonial governments (The Germans from 1884 to 1916, the French and British from 1916 to 1960) laid more emphasis on export crops with indigenous food production receiving little attention. Food to feed the non-agricultural population.

(Europeans, African Labourers and carriers) was obtained through a system of forced requisitions from chiefs in an attempt to ensure a reliable food supply and to keep wages low (Guyer, 1978; Henn, 1978).

During the German rule, some measures to stimulate the creation and expansion of plantations were undertaken. Large expanses of fertile land from natives without or with little compensations were appropriated and turned into plantations. Taxation, forced labour, etc. were used to ensure that there was abundant and cheap supply of labour (Rudin, 1968, Henn, 1978) and a network of transportation and marketing facilities were developed to serve the plantation areas by linking them to the coast.

In the British territory, more private plantations to produce bananas and palm oil were opened and in 1946, the Cameroon Development Corporation (CDC) was opened. Extension was carried out by the Department of Agriculture, Cooperatives and Community Development. Marketing of exports was undertaken by marketing boards.

In the French territory, emphases were laid on peasant production. This necessitated the extension of roads and railways into main peasant producing areas. Extension Services were undertaken by extension institutions with the most important being the "Secteurs

de Modernisation" - (SEM). Emphasis was also laid on research by the French. High yields for cotton and rice today in Cameroon are to be largely attributed to these research efforts.

2.3.2 Agricultural Policies since Independence (1960).

Cameroon has experienced a rapid evolution of agricultural policies and institutions since independence. This evolutionary process may be divided further into four phases, each being defined by a major orientation in policy or strategy (Ntangsi, 1990). The first phase, running from 1960 to 1968, was marked by a continuation of French and British colonial agricultural policies and institutions. The second phase, from 1968 to 1978 was a period of institutional proliferation. The third phase, running from 1978 to 1986, was a period of the oil boom. The fourth phase that began in 1986 was due to the combined effects of powerful external shocks and emerging internal structural problems which plunged the country into a deep economic, political and financial crisis forcing the government to engage in the IMF/World Bank stand-by and structural adjustment programmes. An analysis of each phase will be presented identifying the economic factors underlying the changes in policy

orientation. But many policies that were adopted may be difficult to be fully justified on the basis of purely economic criterion alone. Political influences will be integrated into economic facets in the analysis.

2.3.2.1 The First Phase: 1960-1968.

This period saw a continuation in the French and British agricultural policies and institutional structures, reflecting the country's dual heritage. Until 1972, Cameroon was ruled under a federal system with two federated states (East and west Cameroons), each with its own secretariat of state for Rural Development. In the East, basic extension services continued to be carried out by the SEM, the marketing of export crops by the Caisse de Stabilisation and research largely by French institutions. In the West, extension services continued to be provided by the Department of Agriculture, Cooperatives and Community Development, the marketing of export crops by the Marketing Boards and research by the Department of Agriculture. To coordinate the agricultural development efforts of the two states, the Department of Agriculture and Rural Animation was created in 1964 under the Federal Ministry of Planning.

The organisational structure of the two colonial systems differed significantly. Whereas marketing Boards

had monopoly over the export of products in West Cameroon, the Caisse de stabilisation entrusted this role to Private Licensed buyers. As already noted, the French provided higher extension services than the British. Yet, both systems were based on the so-called Diffusion/Modernisation Model. The model had three main features; it centred on peasants as the primary agents for agricultural development, it involved the transformation of peasant farming through the progressive diffusion and adoption of innovations with the assistance of extension agents and finally, it relied only on limited government intervention (through research, extension, availability of inputs, etc) to change peasant behaviour - giving autonomy in decision making. This contrasted to the autocratic approach adopted during the early colonial period based on the use of coercion to change peasant behaviour. The first Cameroon five years Development Plan (1961 - 1965) and to some extent, the second plan (1966 - 1970) implicity adopted the diffusion/modernisation approach focusing on peasants and on state actions (such as research, technology, development and extension) needed to transform them into modern farmers.

The creation of the Department of Agriculture and Rural Animation in 1964 under the Federal Ministry of Planning to coordinate the agricultural development

efforts of the two states, marked the begining of a process of harmonisation of the two colonial systems. The SEM were gradually phased out from 1965 in favour of a less intensive system, somewhat closer to the community development system in the West. When the country switched from multipartism to a one party system in 1966, the process of harmonisation was intensified. With the transition from a federal to a unitary state in 1972, harmonisation was completed. The SEM were formally abolished and the two secretariats of state for Rural Development were replaced by a unified Ministry of Agriculture which adopted an extensive system of extension.

2.3.2.2 The Second Phase: 1968 - 1978

The trend towards a unified system of extension between 1964 and 1972 was overshadowed in 1968 by a new agricultural development strategy based on the expansion of the modern sector. This was based on:

i) The expansion of the estate sector (public sector);

ii) Rural settlement projects to move the population from densely populated to sparsely populated areas;

iii) Specialised crop development corporations (societés de developpement specialisés) charged with organising and supervising the production of

specific crops grown by small farmers; and

iv) Integrated Rural Development projects stimulating production as well as providing social services. A presidential decree in 1968 provided the government with the legal basis for implementing these new structures. The decree established development authorities, (societés de developpements) and development Corporations, (missions de developpements)[7]. By 1970, a total of ten development agencies have been created; during the third Development Plan, (1971 - 1975) fourteen more were created and twenty new ones were identified during 1976 - 1980 but most of them were not implemented (Ntangsi, 1990). These development agencies could be broadly classified into five categories.

One category covered Integrated Rural Development (IRD) projects such as WADA (Wum Area Development Authority), SODENKAM (Societé du Développement de Haute Nkam), etc. A second category regrouped large scale plantation projects and thus, CDC was nationalised in 1976 and new estates created to diversify production and

[7] The difference between development authority and development corporation is that the former refers only to parastatals at infant stage but the later refer to well developed parastatals.

to serve like pilote centres for the spread of modern farming methods among farmers. A third category included development agencies operating at a national level and offering certain vital services to farmers either in the form of inputs (credit, agricultural chemicals, fertilizer and small equipment) at concessionary or subsidised rates (FONADER - Fund National de Developpement Rurale); or in the form of marketing services (MIDEVIV - Missions de Developpements des Semences et de Cultures Vivrières); or in the form of cooperative services (CENADEC - Centre National de Developpement des Enterprises Cooperatives in the Centre and South Provinces, UCCAO - Union Centrale des Cooperatives Agricoles de l'Ouest in the West, NWCA - North West Cooperative Association in the North West, etc); or in the form of developing agricultural machineries (CENEEMA - Centre National d'Etude et d'Experimentation des Machinisme Agricole). A fourth category included specialised sectoral agencies (or crop development agencies) that organised and supervised the peasant production of specific crops. These included SODECOTON (Societé dé Développement de Coton) for cotton; SEMRY (Société d'Expansion et de Modernisation de la Riziculture a Yaoundé), UNVDA (Upper Nun Valley Development Authority), and SODERIM (Société de

Développement de la Riziculture dans la Plaine de Mbo) for rice, etc. A fifth and last category of development structures emerged in the form of regional or provincial development agencies. Among them were; MIDENO (Mission de Developpement de Nord-Ouest) for the North West Province, Zapi-EST (Société Regionale de Developpement des Zones d'Action Prioritaire Intègrees de l'Est) for the East Province, etc. These reflected a trend away from centralisation towards regionalisation of development planning and have been charged with coordinating and re-inforcing the activities of all development institutions in each region.

The second phase in the evolution of agricultural policy in Cameroon has six basic features. Firstly, the government sought to increase agricultural productivity through the establishment of a sizeable "Modern sector" involving the expansion of the modern plantation sector and the creation of managed or directed agricultural production systems (MAPS) under which, in contrast to the diffusion/modernisation approach, the farmer was expected to follow a set of technical practices with no decision making autonomy. In fact, the third National Development plan was baptised as "the productivity plan" because it was felt that the expansion of the Modern sector would increase productivity in agriculture. Secondly, the

peasant and the liberal diffusion/modernisation approach as a basis for transforming agriculture was rejected. Government resources were shifted away from the traditional peasant sector into the estate sector and the modern peasant sector (served by the MAPS). Thirdly, this was characterised by increasing indirect taxation of cocoa and coffee farmers to raise part of the resources needed to finance the modern sector. Fourthly, there was increased government intervention in agriculture not only because of the expansion of the agro-industrial sector but also because the government got involved in activities which hitherto had been carried out by the private sector (e.g. agricultural input acquisition and distribution (FONADER) and the marketing of traditional foodstuffs (MIDEVIV)). Fifthly, agricultural extension became fragmented, characterised by two parallel systems; one provided by the Ministry of Agriculture (the traditional extension system) and the other by integrated Rural Development institutions resulting in an overlapping and conflicting of functions and competences. Lastly, but not the least, the creation of SEMRY, UNVDA and SODERIM for rice, SOCAPALM (Société Camerounaise du Palme) for palm oil, CAMSUCO (Cameroon Sugar Comapny) for sugar, etc. also marked the starting point for a food input substitution strategy aimed at ensuring food self-sufficiency.

2.3.2.3 The Third Phase 1978-1986

This phase was the period of the oil bonanza. Table 2.1 shows the evolution of petroleum production and exports from 1983/84 to 1986/87.

Table 2.1: Petroleum Production and Exports (In Billions FCFA) between 1983/84 and 1986/87

	1983/84	1984/85	1985/86	1986/87
Production:	596.9	836.3	548.7	293.9
Exports:	465.5	694.3	457.0	242.6

SOURCE: Maison Lazard et Compagnie, December 1987 Page 13.

The sudden availability of massive financial resources made it possible for the government to lighten tax burden on agriculture. But the boom also resulted in the neglect of badly needed reforms and in a disturbing surge in public sector consumption. Although Cameroon was reputed for its fiscal conservatism, for keeping a tight lid on government expenditures and for having ran budget surpluses routinely during the 1960s and 1970s, the country succumbed to dramatic increases in public expenditures during the oil boom. Government expenditures increased from 49.1 billion FCFA in 1971 to

189.0 billions in 1979, 224.9 billion in 1980, 443.8 billions in 1981, 494.2 billions in 1982 to 813.7 billions in 1985 (Ntangsi, 1990). A small part of these increases benefited agriculture. During the period 1979-1982, when world prices for cocoa and coffee declined and the NPMB reserves ran short, input subsidies to farmers were partly financed from oil revenues. Furthermore, the country's road infrastructure which was substantially improved during the oil boom (especially the Yaounde - Douala and Bafia - Bafoussam trunk A roads) has helped to reduce agricultural marketing costs.

2.3.2.4 The Fourth Phase: since 1986

Since 1986, the drop in the US dollar prices of Cameroon's major export crops (especially oil, cocoa and coffee) and the sliding nature of the US dollar have exposed structural problems in the economy and have plunged it into crisis.

The government responded by launching the IMF/World Bank austerity and structural adjustment programmes in 1988. Thus, agricultural policy during this phase is essentially the Stabilisation and the Structural Adjustment Programmes.

2.4 THE STRUCTURAL ADJUSTMENT PROGRAMME (SAP)

2.4.1 Generalities About SAP

Structural Adjustment to changing conditions has been practised the world over for a very long time, even thought it hasn't always been called by the name Structural Adjustment. In recent years, however, structural adjustment programmes have been initiated in a large number of developing countries. What distinguishe these programmes from economic policy making in earlier eras that they involve many individual reform measures put together in a single package, they worked out in explicit consultation with international agencies and they tied to additional foreign loans.

Adjustment programmes usually are initiated because of an inability by a country to service adequately an accumulated foreign indebtedness, which may have been brought about by a combination of past borrowing policies, changes in the world market comditions (particularly in the prices of exportable commodities) and inappropriate domestic policies (Yagci, Kamin and Rosenbaum, 1985; Donovan, 1984). Once a programme is formalised, its goals often encompass inflation control as well as improvement in the external accounts. Economic growth per se usually is not an immediate

priority, but it is assumed that the reforms will lay the basis for better growth prospects in the medium or long term.

The precursors of the structural adjustment programmes were the IMF stabilisation agreements. These agreements still are important sources of external resources for countries experiencing financial difficulties. The agreements emphasized macroeconomic reforms, particularly in the areas of fiscal and monetary policies, exchange rate policy and trade policy. Nevertheless, these kind of policies have implications for agriculture and sometimes the policy instruments are very specific to agricultrue, as the case of the 36 percent tax on traditional agricultural exports that was implemented in the Dominican Republic in 1985 as part of an IMF agreement (FAO, 1991).

To gain an appreciation of the overall level of activity in the adjustment and stabilisation programmes, it may be noted that the IMF alone initiated 77 programmes in sub-saharan Africa in the five years 1980-1984 including both stand-by loans, of one year's duration, and extended financing facilities of three year's duration (Addison and Demery, 1985). The total value of those loans was about 6 billions US $.

Adjustment programmes that are primarily

agricultural have not been so numerous, but they are growing in importance. In fiscal years 1979 through 1985, the World Bank and IDA (International Development Agency) signed 34 sector Adjustment loan agreements in 25 countries world-wide, the majority of which had at least an agricultural component. The value of those loans was in excess of 3.5 billions US $. Of these 34 loans, 26 went to Africa and Latin America, and the majority went to low-income recipients (FAO, 1991).

Because of their comprehensive character and the diversity of specific policy measures used, it is difficult to develop a taxonomy of structural adjustment programmes. In general, it used to be said that they differed from stabilization programmes in that the later focuses only on aggregate demand management whereas the former emphasizes the supply side as well. This distinction could not hold because measures like exchange rate changes and trade policy reforms have strong effects on both supply and demand through the price mechanism. However, it is true that structural adjustment programmes at least the sectoral ones - give much more emphasis to macro-level policy measures as opposed to purely micro-instruments.

While the programmes themselves do not fit into a neat taxonomy, it is possible to categories the

adjustment strategies followed and the types of specific measures. A useful three-way classification of adjustment strategies has been developed by Yagci, Kamin and Rosenbaum (1985): Expenditure reduction, Expenditure switching and External financing. The first category involves attempts to reduce excess demand and the second attempts to promote production of tradeable goods and services as opposed to production of purely domestic items.

However, this classification is not comprehensive. The programmes also include measures that are aimed at increasing efficiency, regardless of the tradeable status of the product, and also measures designed to increase domestic savings, and thus help release capital - a constraint to growth. Increased efficiency often is sought for example, in the operation of public enterprises and in the regulatory actions of the government. Thus, a five-way classification is needed to cover all the main strategies pursued in these programmes. This includes; aggregate demand management, resource reallocation, increasing foreign savings; increasing domestic savings and increasing economic efficiency in the use of resources (FAO, 1991).

2.4.2 Structural Adjustment Policies

Once a strategy has been identified for a structural

adjustment programme, there are many different kinds of policies that can be implemented to carry out the programme. Most of the policies utilized have both a macroeconomic and a sectoral expression. For example, pricing policy at the macroeconomic level means primarily exchange rate and wage polices. At the level of the agricultural sector, pricing policies means administered output prices, irrigation charges and other administered input prices, rural wage policies, tariffs including the implicit tariffs on foods imported by government agencies, and optionally, interest rates on agricultural credit.

The policy measures employed in these programmes can be grouped into seven categories as follows: Monetary and financial policy, fiscal policy, pricing policy, trade policy, institutional measures, land policy and studies to define future policies. Some specific measures may be placed in more than one category as in the case of interest rates and tariffs which represent both pricing and trade policy.

In agriculture, there are several policies that are widely employed in structural adjustment and many others that are more particular to the country concerned. The more widely used ones include raising real producer prices of agricultural outputs (used for example in

Bolivia, Kenya and Togo); reducing subsidies on inputs especially fertilizer, irrigation and credit (used in Turkey, Malawi, South Korea, Pakistan, Nigeria, etc); reducing the operating costs of parastatals or diversifying them (used in Panama, Malawi, Ivory Coast, Nigeria, etc.); and implementing programmes of land surveys, land tilting, and/or sales of public lands to small farmers (used in Thailand, Jamaica, proposed for the Dominican Republic). Cameroon's SAP has employed all except the last one. The general thrust of output pricing policies imply that the domestic terms of trade have deteriorated from agriculture's view point which is often the case, but the question often remains as to whether administered price structures should be left in place or whether trade and exchange rate policy should be allowed to determine the general domestic agricultural price levels, in a context of liberalised domestic price formation.

A related question is the need for, and the design of targetted food subsidies for the lower income groups, to avoid significant decreases in their economic welfare as a consequence of implementing the new producer pricing policy. Often, the structural adjustment programmes are lacking in transitional measures to ease the impact of adjustment on those who can least afford it. But

recently, these are being taken care of by the Social Dimension of Adjustment (SDA) or the so-called "adjustment with a human face". There are conflicts and trade-offs among the various policies. A policy such as trade liberalisation may favour a more efficient allocation of resources in the long-run, but in the short-run, it may aggravate the balance of payment situation, which the programme as a whole is trying to improve. In the economy-wide context, Yagci, Kamin and Rosenbaum (1985) have pointed out a number of major trade-offs of this kind including devaluation versus reduction in inflation, credit contraction versus reduction in the trade deficit. The existence of trade-offs indicate the need for careful articulation of priorities of the programme and also of careful analysis to understand the multiple consequences of each policy instruments.

2.4.3 Objectives and Approach of SAP in the Cameroon Ccontext.

2.4.3.1 Objectives of SAP

The broad objectives of the structural adjustment programme in Cameroon can be summarised in four points (World Bank, 1989).

(a) To re-establish a positive rate of per capita income growth.

(b) To reduce progressively the constraints which hinder a general opening of economic opportunities, through fostering increased competition both at the foreign and home fronts and reducing the inefficiency of domestic markets.

(c) To re-orient the role of the state from that of direct intervention in the economy to one of facilitating the operations of the private sector; and

(d) To re-orient public services towards programmes which improve the well-being and productivity of all Cameroonians, taking into account the social dimensions of the adjustment programme.

2.4.3.2 Approach of SAP

The above objectives were aimed to be achieved through a series of measures that will:

(a) Stabilize and restructure public finances over the medium term through improved programming and budgeting of government resources, better control over government salaries, improvements in the productivity and management of the civil service and an increase in non-oil tax revenue;

(b) Restructure and rehabilitate the public enterprise sector;

(c) Restructure the Banking sector, including improved

monetary and credit policies;

(d) Stabilise the finances of the agricultural marketing structures for the principal export crops (coffee, cocoa, cotton, etc), liberalise progressively trade in these crops, and create programmes to increase food security and to promote non-traditional agricultural exports;

(e) Deregulate internal commerce with a view towards lowering the domestic costs structure and rationalizing external trade regulations and effective rate of protection;

(f) Improve incentives for petroleum exploration and production;

(g) Reorient policies in the health and education sectors, especially towards primary level, to improve human resource development; and

(h) Establish specific programmes to reduce the social costs of adjustment.

Many of the above objectives were likely to require three to five years for implementation to be completed. This was particularly the case for public enterprise reform, the banking sector and administrative reforms of the public service. Thus, SAP was considered as a medium and long-term strategy for economic recovery (World Bank, 1988).

2.4.4 Policies Specific to the Agricultural Sector in Cameroon.

Expatiating on the objectives thus stated is important in order to show the intensity of reform under SAP in the agricultural sector. The government's development objectives for agriculture emphasized food security, promotion and diversification of exports and increasing rural incomes. To attain these objectives, the government has adopted policies to support traditional farmers and livestock owners, promote the creation of modern medium-sized farms and to increase the use and transformation of domestic agricultural products. The reform programme had emphasized both price and non-price incentives.

In the domain of pricing and marketing policies, there had been privatisation of the marketing of food and cash crops. Government has reduced its involvement in the production and marketing of the few basic commodities in which public enterprises are currently involved. For example, rice marketing had been liberalized and responsibility for rice production and marketing has also been privatised and the palm oil industry (SOCAPALM) has been restructured for eventual privatisation. Domestic production of rice, palm oil and meat products suffered from competitive imports. In response, the government

has imposed additional tariffs on imports of rice, meat products, palm oil and sugar to offset the effect of export subsidies and dumping from surplus countries.

For major export crops, the government has taken measures aimed at reducing intermidiary costs, in order to cut down the deficit from exporting these crops as from 1988/89 crop season. The NPMB has been abolished and had been replaced by a small successor organisation - the National Cocoa and Coffee Board (ONCC - NCCB). The inter-annual stabilization fund of NPMB had been replaced by a seasonal stabilization fund. The difference between the two funds is in the function they served: the inter-annual fund was aimed at stabilizing producer prices for a number of years whereas the seasonal fund is aimed at stabilizing producer prices within a certain year only. Because this was not sufficient, a supporting policy of suspending export taxes and lowering of producer prices has been implemented. There has been the institution of a floor producer price for coffee, cocoa, cotton among other policies. The government also opted for increasing the price differential between superior and inferior quality arabica coffee in order to increase the competiveness of this product in the world market.

There was the intension of liberalising the system.

As a first step, the government introduced more competition in the North West region where inefficient cooperatives and the marketing board had a monopoly over the marketing of coffee by allowing private traders to enter the market. Thus, there has been competition between private traders, cooperatives and the marketing board both in the internal and external marketing of coffee. This has been extended to other regions and for other crops.

The Cocoa Development Corporation (SODECAO), the Cotton Development Agency (SODECOTON), the Rice Development Corporations (UNVDA, SEMRY, SODERIM, ETC) and the Cameroon Development Corporation (CDC) have been restructured among other agricultural parastatals.

The government having recognised its excessive interference in the administration of cooperatives and in the delivery of inputs as the major cause of inefficiency, enacted the cooperative law in February 1993, disengaging itself from cooperatives in order to enhance their autonomy and had recognised the public support agencies. The governing legislation has been revised to deregulate the cooperative. The role of public support agencies has been redefined to provide more effective technical support to cooperatives. A reform approach to privatise the distribution of inputs and to phase out input subsidies has been implemented.

The extension services has been streamlined to become more cost effective, including the harmonisation of services between parastatals and government ministries and the adoption of the Training and Visit (T&V) extension system on a nation-wide-basis. Research institutions are being restructured and reinforced to provide a better linkage with extension services. In addition, a programme to privatise veterinary services has been implemented.

In the exploitation of forest resources, the government has been aware of the inappropriateness of the policy in the granting of concessions and licences for forest exploitation and exportation, and the poorly trained staff. The Tropical Forest Action Plan (TFAP) had been launched to take care of these problems and to recommend to the government policies appropriate for forestry exploitation. Norms and standards on wood products are being introduced to enhance the marketability of wood exports. The forestry code has been revised to provide a legal basis for promoting agro-forestry and for integrating local populations in the protection of national parks and reserves.

Generally, Agricultural parastatals are being rehabilitated so as to render them more productive and efficient. An Inter-ministerial Commssion in collaboration with a Technical Commission for public and

Parastatals rehabilitation is charged with the process. This involved the idenfication of enterprises for privatisation and for restructuring for those to remain in the government portfolio. The strategy has been to maintain in the state portfolio only enterprises that are strategic and to disengage from those that are not, either through privatisation or liquidation. So far, of the 67 enterprises on which decisions have been taken, 28 have been maintained in the state's portfolio, 21 have been (or are being) liquidated and 18 are under privatisation (Ntangsi, 1991). Performance contracts have been (or are being) signed between the government and the management of Enteprises maintained in the government portfolio. This is to ensure accountability in the management of these Enterprises. Autonomy in the management of enterprises has been granted.

2.4.5 The Social Dimensions of Adjustment (SDA)

The present crisis led to a sharp reduction in per capita incomes and private consumption during the last two years preceding 1989 by about 24 percent and 15 percent respectively (World Bank, 1989). In an attempt to address the budget deficit, the government sharply reduced expenditures on services that are crucial to the provision of basic needs of the poor such as primary health and education. There had been rampant

retrenchment of employees both by the public and private sectors. SAP involves the disengagement of the public sector from productive activities as well as public sector withdrawal from price support for major exports crops. These measures have surely created unemployment and other negative effects to society.

Zuckerman in 1988 preferred the use of "newly poor" and "chronic poor" to identify these groups of people directly affected by the adjustment programme. The "newly poor" are those direct victims of structural adjustment. They might be retrenched civil servants or employees laid off by public and private enterprises as a direct consequence of structural adjustment measures. The "chronic poor" are those who were extremely poor even before an adjustment programme was undertaken and they have been made even worse off by the adjustment programme. SDA came up as a mechanism to assist the vulnerable groups that are badly hit by the adjustment programme (both the newly poor and the chronic poor). The government's SDA programme is supported by the World Bank and France through the CCCE (Caise Centrale Pour la Cooperation Economique) and was elaborated to deal with the population, health, social security, education, training, employment, the role of women in development and the institutional framework. A particular emphasis

is placed on services aimed at primary health care, retraining of individuals who have lost their jobs, identification of labour intensive methods for carrying out public works and the establishment of permanent household surveys to measure social conditions. The National Employment Fund (NEF) had been created to take care of these.

2.4.6 Structural Adjustment Lending (SAL)

This is a World Bank programme introduced in 1980 in response to the balance of payments problems of developing countries sterming from the second oil shock,[8] and from domestic policy weaknesses. Initially, structural adjustment lending was expected to last three to five years for a particular country. The initiation of SAL was to assist countries prepared to undertake a programme of adjustment to meet an existing or avoid an impending balance of payment crisis (World Bank, 1981). Three features differentiate this programme from normal World Bank lending and from occasional emergency programme lending. Firstly, it is a fundamental instrument for the dialogue between the Bank and the

[8] The second oil shock refers to the falling prices per barrel of oil in the world market including a slump in prices of agric products and fluctuating dollar value during the 1970s.

country on various aspects of development policy and on the nature and scope of changes to be supported. Secondly, it provides finance over a number of years in the direct support of specific policy reforms. Thirdly, it provides foreign exchange to finance imports not linked in advance to specific investment programmes.

Since its inception in the 1980s, it has become increasingly important in the Bank's operations. It now accounts for slightly more than 10 percent of the portfolio loans and nearly 25 percent of annual lending (World Bank, 1988). SAL since 1988 is increasingly giving way to Sector Adjustment Loans (SECALs). Both types have been relatively quick-disbursing. SALs have contained comprehensive macroeconomic policy undertakings and sectoral reforms while SECALs have mainly emphasized in such areas as trade, agriculture, industry, public enterprises, finance, energy and education. Adjustment lending is increasinly going to low-income African countries and to highly indebted middle-income countries.

The scale of an adjustment loan is determined by four factors (World Bank , 1988):

(i) The country's need for external capital.

(ii) The amount of other foreign lending in the planning stage.

(iii) The country's debt servicing capabilities; and

(iv) The country's absorptive capacity for quick-disbursing funds, in areas related to the purpose of the loan - IDA and the World Bank SAL have ranged from US $5 million (Malawi for small holder fertilizer) to US $352 million (Brazil for export development). Yagci, Kamin and Rosebaum (1985) argued that the costs - benefit criterion which is a basic economic factor to be considered in determining the scale of SAL have been ignored by the World Bank.

The Cameroon government signed a structural adjustment loan with the World Bank in July 1989. The amount was equivalent to US $150 million (about 47.8 billion FCFA). This was at the Bank's interest rate and with a grace period of five years. The loan had a 17 year's duration. It was to be released in three tranches of $50 million each depending on some conditionalities. These were based on in the progress made with the implementation of the programme and specifically on;

(i) Elimination of price controls for most goods except basic ones recognised by the Bank and Fund;

(ii) Elimination of Import Licence requirements for goods not subjected to quantitative import restrictions;

(iii) Reforming the public enterprise sector including

the signing of performance contracts between the government and the enterprises concerned;

(iv) Liquidating depressed banks (Cameroon Bank, Cameroon Development Bank and FONADER) and restucturing key commercial banks (SCB, SGBC, BIAO, etc);

(v) Reducing government expenditure, through retrenchment of workers and the lowering of wage rates and fringe benefits;

(vi) Redefining the role of the NPMB in order to permit the private sector to assume progressively the responsibilities for internal and external marketing of export crops,

(vii) Modifying the forestry tax regime and revising the forestry code to allow for rational exploitation and long-term conservation of forestry, etc.

2.5 SOME LITERATURE ON THE IMPACT OF SAP IN OTHER COUNTRIES.

Over the years, several views have been expressed by a cross-section of people in sub-saharan Africa regarding the impact of the structural adjustment programme on various sectors of the economy. However, most of the views expressed are based on evidence from casual observations rather than empirical analyses.

Balogun and Alawa (1990), in their study on the impact of SAP on the livestock subsector in Nigeria, remarked that SAP has had adverse effects. The most notable of the effects is the escalation in the prices of inputs employed in this sub-sector. They argued that SAP was to complement existing government programmes aimed at boosting domestic livestock production, and thus a package of incentives should be given to livestock farmers so as to encourage them to produce in the face of escalating input prices.

Assessing the impact of SAP on small ruminants (sheep and goats) production in Nigeria, Osuagwu (1990), observed that SAP has positively affected the number of sheep and goats slaughtered in Bodija abattoir. According to him, the number rose by about 35 percent with the implementation of SAP. However, there had been shifts in input use from more expensive to less expensive and less nutritious feed.

Fabiyi and Imodu, (1990), in a study of the impact of SAP on rural life, observed that farmers are no longer getting adequate economic returns on their investments, due to the depreciation in the value of the Naira in the foreign exchange market. The deregulation of interest rates, credit squeeze and the removal of subsidies have had adverse effects on agricultural production and farm

incomes in Nigeria.

Ojo (1990), found that SAP has stimulated increased production of export crops like cocoa beans, palm produce and coffee in Nigeria. In fact, he argued that SAP has led to the production of these crops almost doubling. The volume of exports has accordingly increased. He also pointed out that SAP has had a positive impact on raw materials production and thus, domestic industries using these are now able to get supplies locally.

Quizon and Binswanger (1986), using the "Response Model" in India showed that SAP has resulted in increasing the income inequality among agriculturalists.

Behram and Deolalikar (1989), using the "Before/after" approach in analysing the impact of SAP on the poor in Jamaica concluded that the immidiate impact of SAP is adversity. The poor suffer undue hardship than any other social group in society during adjustment periods.

Wolf (1990), argued that the most worrisome aspect of SAP is the widespread tendency of the programme to be accompanied by an acceleration of inflation. This had tended to impose considerable hardships on the people and, sometimes, even stiffle the pace of economic progress.

Kirkpatric and Onis (1985) argued that slow pace of

growth particularly in the agricultural sector and deterioration in the living conditions of rural people have resulted from SAP.

Selowsky (1990), pointed out that results of policy reform often come only slowly and that because of initial pains, evidence showed that in most instances like in India, the process of structural adjustment has hardly begun, and too often, the effects have not been maintained. Hesitation and procrastination impede recovery and greatly extend the period of adjustment and its attendant hardships. This explains why the envisaged supply response inevitably lags behind expectations.

In arriving at these conclusions, several methodological techniques were adopted. The basic approach used in assessing the impact of SAP is descriptive statistics either to review specific targets set or to compare mean values of selected economic parameters in the pre-SAP and SAP periods. This method is generally referredto as the "before/after approach". This approach is easy to apply and most handy, especially in generalised economic indicators like living standards where evaluative parameters like real wage/income, quantity/pattern of food consumption, purchasing power and so on are compared. This approach was used by

Balogun and Alawa (1990) and they considered as variables livestock production, input prices, etc. Osuagwu (1990) used the same approach in his study and the number of goats and sheep slaughtered, the overall number produced, price of beef, etc were used as variables. Fabiyi and Imodu (1990); Ojo (1990); etc used a similar approach in their various studies and with returns on investments, depreciation rate of the Naira, interest rates; volume of cash crop production and exports, foreign exchange earnings, prices of cash crops (both Free on Board-FOB and producer prices), etc, respectively used as variables.

The other commonly used approach is the time series projections where estimates based on such projections are usually tested to see whether significant shifts have occurred during adjustment periods compared with the pre-adjustment periods. This method is usually referred to as the "counterfactual" approach, where attempt is identified whether the adjustment period values of indicators differ from the secular trend by separating the counterfactual from adjustment policies. Behrman and Deolalikar (1989), like the "before/after" approach, the "counterfactual" method can not dlearly establish casual effects of SAP. In the attempt to resolve the casual effect problem, the "Response Model" gained wide-spread

acceptance. This is an econometric model which attempts to isolate the cause and effect of SAP on a specified sector of the economy. This approach has been useful for examining effects of agricultural policies (price reforms), especially in countries where agriculture constitutes a large share of the GDP. A typical example is Quizon and Binswanger (1986) in India, with focus on income distribution. The model has detailed output supply, factor demand and output demand equations for the agricultural sector and prices and quantities that would clear the markets. A major weakness of this approach is that it has limited links with the rest of the economy as

the non-agricultual sector is usually treated as exogenous. The model is often referred to as a limited general equilibrium model.

CHAPTER THREE

METHODOLOGY

3.1 BACKGROUND TO CAMEROON

Cameroon is one of the countries in Central Africa although the Western part falls in West Africa. It has a land area of about 485,000 square kilometers and had a population of approximately 12.8 million by early 1993. This is very unevenly distributed with a population density ranging from about 175 inhabitants per square kilometer in the Western province to roughly 6 in the Eastern province (the National Population Census, 1987). The country shares boundaries with the Republic of Tchad to the North, the Central African Republic to the East, Congo to the South-East, Gabon and Equitorial Guinea in the South and the Federal Republic of Nigeria to the North-West and South-West.

Cameroon is being referred to as the " Microcosm of Africa" by many writers because of its complex ethnic composition and extreme geoclimatic diversity. It is the only African Country to have been colonised by three powers; Germany, France and Britain. It is also the only African country with French and English as official languages. About 240 ethnic groups, speaking more than 24 languages or dialects have been identified, making Cameroon a "racial crossroads of Africa".

The country can be divided into five major geoclimatic regions. From South to North, there is an area of mashes and mangrove forests bordering on the Atlantic ocean, a region of Plateau and dense forests, followed by a higher Plateau region, a savanah and steppe region and the western border of the country is a mountainous region hosting the highest mountain in West Africa (Mount Fako).

The predominant economic activity is agriculture. Agriculatural development is managed by six ministries, the Ministry of Agriculture (MINAGRI), the Ministry of Planning and Regional Development (MINPAT), the Ministry of Livestock, Fisheries and Animal Husbandry (MINEPIA), the Ministry of Trade and Industrial Development (MINDIC), the Ministry of Finance (MINFI) and the Ministry of Technology and Scientific Research.

3.2 DATA COLLECTION

This study was based principally on secondary data. These have been obtained from the Ministries of Agriculture, Planning and Regional Development, Trade and Industrial Development, Livestock, Fisheries and Animal husbandry, Finance and from that of Technological and Scientific Research. Other sources of information had been the resident missions of the World Bank, the United Nation's Development programme, (UNDP), the International

Monetary Fund (IMF), the Food and Agricultural Organization (FAO) and the Caisse Centrale Pour la Cooperation Economique (CCCE) in Yaounde. Data was also obtained from the Technical Commission for the rehabilitation of public enterprises and parastatals formed in 1988 by a presidential decree to monitor the implementation of the structural adjustment programme, particularly the rehabilitation of public enterprises and parastatals. These had been supplemented by information collected through interviewing the members of the commission to varify some of the data that had been obtained from documents. Data were collected for the entire period of the study, i.e from 1980 to 1992. Primary Data for the various variables is contained in the appendices.

3.3 VARIABLES ON WHICH DATA WERE COLLECTED

Macroeconomic variables have been used in analysing the impact of SAP on the agricultural sector. These are agricultural GDP, exports, imports and production of food and cash crops.

Information on the various inputs used in the agricultural sector particularly land, labour, capital (fertilizer, credit and equipment) was used. Agricultural performance indicators used have been grouped under productivity indicators, growth indicators and stability

of growth indicators as was used by FAO in 1975 in analysing agricultural performance in some selected countries.

3.3.1 Productivity Indicators

Productivity here refers to resource productivity and was measured by the use of per unit values and precentages. Indicators or variables used include:

(i) Agricultural GDP per head of total population;

(ii) Agricultural GDP per head of agricultural population;

(iii) Agricultural GDP per hectare of total land area;

(iv) Agricultural GDP per hectare of agricultural area;

(v) Agricultural GDP per franc CFA spent on agricultural equipment;

(vi) Agricultural GDP per franc CFA of agricultural credit;

(vii) Agricultural GDP per kg of fertilizer used;

(viii) Cash crop production per capita of total population;

(ix) Food production per capita of total population;

(x) Value of cash crop production as a percentage of value of total agricultural production; and

(xi) Agricultural GDP as a percentage of total GDP.

3.3.1.1 Definition of terms:

- Agricultural GDP as used in the study is the value of agricultural products produced within Cameroon irrespective of who was involved in its production.
- Total land area refers to the total area excluding area under inland water bodies.
- Agricultural area refers to arable land under permanent crops, temporary meadows for mowing of pasture and land temporarily fallowed (less than five years).
- Agricultural credit refers to the value of agricultural credit provided by government financial institutions (FONADER and later Credit Agricole du Cameroun) for agricultural purposes.
- Agricultural equipment in this study refers to the value of tractors, ploughs, sprayers, chain saws, coffee pulpers, bicycles, motor vehicles etc provided by the government to farmers at subsidized rates.
- Cash crop production per capita of total population represents cash crop productivity when the total population is considered. This shows approximatively what each person contributes to total cash crop production.
- Food crop production per capita of total population measures the quantity of food crop produced by each

person in Cameroon on the average.

- Agricultural population refers to those directly involved in agriculture, be them peasant/small scale farmers or large scale farmers.

3.3.2 Growth Indicators

Morgenstern (1963), defined economic growth as being the increase in the "real" output of the economy over time whereas Kuznets (1961) defined it as a sustained increase in any variable over a considerable period of time. Both definitions considered growth as quantitative increases in the variables considered. Agricultural growth is measured in this study by using changes in:

i) The value of agricultural GDP over time,

ii) The value of agricultural exports and imports over time (both food and cash crops),

iii) The value of agricultural production over time (both food & cash crops),

iv) Food self-sufficiency ratios; and

v) The value of input use over time (Fertilizer, Agricultural equipment and agricultural credit particularly).

3.3.3 Stability Indicators

Stability refers to the degree of fluctuations in economic growth. This shows to what extent growth in the various variables is sustainable. Values less than 5

percent means stable and sustainable growth, values between 6 and 10 percent mean relative stability and thus relative sustainability; and those above 10 percent, means instability and thereby unsustainability (UNCTAD 1972). This was measured in the study with the aid of variations in the growth of:

i) Agricultural GDP,

ii) Cash and food crop production,

iii) Agricultural exports and imports,

iv) Cash and food crop exports and imports and

v) Input use (particularly fertilizer use, agricultural equipment use and agricultural finance).

3.4 ANALYTICAL TOOLS

Three analytic tools have been used in analysing the data collected for this study.

3.4.1 Descriptive Statistics

Simple descriptive statistics like means, medians, percentages and curves have been used in analysing some phemomena in the study. These are important particularly in describing productivity and growth and this has been the crux of this study as stated in objective two of the study.

3.4.2 Indices

Since the study involved time series data, variables were converted to a base year as a standardization process in order to actually appreciate changes that have taken place. Relative value indices were used and 1986 was considered in the study as the base year.

3.4.3 Regression Analysis

This was used in the study to explain variations in agricultural GDP. In effect, agricultural GDP has been regressed on the amount of fertilizer, value of agricultural equipment and the amount of agricultural credit used. These three independent variables (fertilizer, agricultural equipment and agricultural finance) were used because policy changes have a direct effect on them. In fact, one component of SAP had been directed towards non-subsidization of agricultural inputs thereby making them the most binding constraints. Regression analysis was used in the study purposely for analysing structural changes over time in input mix of the agricultural sector as stated in objective three of the study. Details on the analysis of variance aspect of the variables has been given particular importance in the study as this shows clearly structural changes in terms of resource use mix.

3.5 SPECIFICTION OF THE MODELS

Four sets of models have been used in the study; a first set had been used for productivity measures, a second set for growth measure, a third for stability of growth measure and finally, a fourth for structural changes measure or for the analysis of the sector as a whole.

3.5.1 Productivity Models

Per unit values have been obtained by using the following conversion formulae:

For Average productivity;

$$Pr_i = \frac{Y_i}{X_i} \quad \text{---------- (1)}$$

with Pr_i = Physical per unit value in year i.

X_i = Volume of inputs in year i and

Y_i = Value of output in year i

For Marginal productivity,

$$Pr_i = \frac{\Delta}{\Delta}\frac{Y_i}{X_i} \quad \text{.....(2)}$$

$$but \Delta Y_i = Y_i - Y_{i_{-1}} \quad \text{....(3)}$$

$$\Delta X_i = X_i - X_{i_{-1}} \quad \text{....(4)}$$

where Pr_i = as defined in (1) above,

ΔX_i = change in the volume of inputs in year i

ΔY_i = change in the level of output in year i

X_i & Y_i = as defined in (1) above,

X_{i-1} = Volume of inputs in year i lagged by a year and Y_{i-1} = Value of output in year i lagged by a year. The per unit values have been standardized by applying indices. The year 1986 was used as the base year for the standardization process. The choice of 1986 is because of two reasons. Firstly, 1986 represented a period of economic normality, i.e. neither peak nor a recession and secondly, it was the most recent year before SAP and without economic hardship being portrayed in people's attitudes.

The relative value index is defined by

$$Qi = \frac{Pi \quad Yi}{Po \quad Yo} \times 100 \quad \text{---------} \quad (5)$$

where Qi = Productivity index in year i,

Pi = Price in year i

Yi = as defined in (i) above,

Po & Yo = Price and output at base year (1986).

3.5.2 Growth Models

A simplified growth model has been used in the study.

$$g = \frac{Yi - Yi_{-1}}{Yi_{-1}} \times 100 \quad \text{----------} \quad (6)$$

with g = rate of growth of variable concerned,

Yi= as defined in (1) & (2) and

Yi_{-1} = Yi lagged by a period.

Food self-sufficiency has been calculated using the formula

$$FSSRi = \frac{F_{Pi}}{F_{Pi} + F_{mi} - F_{xi}} \times 100 \quad \text{---------- (7)}$$

where FSSRi = Food self-sufficiency ratio in year i

F_{Pi} = Food production in year i,

F_{mi} = Food imports in year i, and

F_{xi} = Food exports in year i

3.5.3 Stability Model

Fluctuations in growth have been measured by using the following formula employed in the handbook of International Trade and Development Statistic (UNCTAD, Geneva, 1972, Page 217);

$$F=\frac{100}{n}\sum\left(\frac{X_{ij}-X_j}{X_j}\right)^2 \ldots\ldots (8)$$

where F = Annual percentage deviation from the trend (in this study, the mean of various observations has been considered as the trend).

Xij = Value of variable j at year i

Xj = Simple arithmetic mean of variable j

n = number of years covered (n = 13 in the study i.e from 1980 to 1992).

3.5.4 Structural Model

Regression model combined with the Chow test method were used to test structural changes that have occured in the agricultural sector during the SAP period. Three regressions were run as Chow (1960) did in testing for equality between two sets of coefficients in two linear regressions. One from data set covering 1980 to 1987 (Pre-SAP years), a second for data set from 1988 to 1992 (the SAP years) and a third for the combined period, i.e 1980 to 1992. The regression models were as follows:

$$Y_{ai1}=\beta_{i1}+\beta_{i2}X_{i2}+\beta_{i3}X_{i3}+\beta_{i4}X_{i4}+\epsilon \quad \ldots\ldots (9)$$

$$Y_{ai2}=\alpha_{i2}+\alpha_{i2}X_{i2}+\alpha_{i3}X_{i3}+\alpha_{i4}X_{i4}+\mu_i \quad \ldots\ldots (10)$$

$$Y_{ai3}=a_{i1}+a_{i2}X_{i2}+a_{i3}X_{i3}+a_{i4}X_{i4}+\varepsilon_i \quad \ldots\ldots (11)$$

where Yaij = Value of agricultural GDP for regression j and for each year i. (j = 1, 2 & 3).

βij, αij & a_{ij} are parameters to be estimated.

X_{i2} = Value of fertilizer used,

X_{i3} = Value of agricultural equipment used,

X_{i4} = Value of agricultural credit used and

ϵi, μi & εi = Stochastic disturbances for the various regression equations.

The Chow test for structural changes was used to test for structural changes during the different periods. A formulation for the calculation of the various variables involved is presented in appendix 1.

3.5.5 Specification of Functional Forms that were used for Analysis:

Three different functional forms; linear, logarithmic (double logarithmic) and semi-logarithmic forms were tried. This was to avoid problems of specification errors and serial correlation that emanate from wrong functional forms being used. The functional form which gave the best fit was chosen for analysis. The best fit criterion was based on:

(i) the value of the coefficient of multiple determination and the adjusted coefficient of multiple determination,

(ii) the signs of the estimated coefficients which were expected to be all positive from a priori economic knowledge,

(iii) the standard error of the estimated coefficients and

(iv) the statistical significance of the estimated coefficients.

However, the functional forms were expressed as:

(a) Linear forms. As specified in (9), (10) and (11).

(b) Logarithmic forms:

$$\log Y_{ai1}=\log\beta_{ij}+\sum \log\beta_{ij}X_{ij}+\epsilon \ldots\ldots (12)$$

$$\log Y_{ai2}=\log\alpha_{i1}+\sum \log\alpha_{ij}X_{ij}+\mu_i \ldots\ldots (13)$$

$$\log Y_{ai3}=\log a_{i1}+\sum \log a_{ij}X_{ij}+\varepsilon_i \ldots\ldots (14)$$

where all variables remain as defined in (9), (10) & (11).

(c) Semi-logarithmic forms:

$$Y_{ai1}=\log\beta_{i1}+\sum \log\beta_{ij}X_{ij}+\epsilon_i \ldots\ldots (15)$$

$$Y_{ai2}=\log\alpha_{i1}+\sum \log\alpha_{ij}X_{ij}+\mu_i \ldots\ldots (16)$$

$$Y_{ai3}=\log a_{i1}+\sum \log a_{ij}X_{ij}+\varepsilon_i \ldots\ldots (17)$$

with all variables as defined above.

3.5.6 Limitations of the Models

These have been limited in terms of indicators used. The accuracy and reliability of the indicators have beenlimited by the kind and quality of basic data published by the ministries and the international organizations. In particular, because of poor istical services, data as in agricultural GDP were likely less reliable than for others as in agricultural inputs. The use of many sources of information had led to conversion problems. The international institutions publish their data in US dollars but the ministries document information in FCFA. In order to harmonise data, US dollar was converted to FCFA. This has led to a little loss of validity as annual exchange rates which represented averages have been used instead of daily exchange rates which should have been the case. This is indicated in appendix four.

Specifically, the use of indices has two basic shortcomings; firstly, all commodities are considered equally important and thus, those with higher prices have been more influential. Secondly, the various commodities were not measured using the same units and thus inaccuracy in the use of indices. Time series data also have some problems inherent in it. It does not consider quality of land and shifts in land use within crops and equally does not measure changes in quality of products over time.

CHAPTER FOUR

EMPIRICAL RESULTS AND DISCUSSIONS

4.1 INPUT PRODUCTIVITIES

The impact of the adjustment programme can be evaluated by the use of input productivities as stated in chapter three. These measure performance of the sector during the various years of the study. In economics, there are two categories of input productivities; marginal and average productivities. Marginal productivity of inputs is concerned with output changes due to per unit changes in input use. This concept is more relevant in identifying efficient and inefficient units of resources as the real effect of each additional unit of input can be determined. Average productivity of inputs on the other hand refers to the total output at any particular instance divided by the total volume of inputs used in the production of that output. It does not show the effects of each unit of input accurately and therefore cannot be used in identifying inefficient units in a bundle of inputs. However, in this study, more importance is laid on average productivities. This is because by the nature of the study, annual variations in input use are not based principally on the profit maximisation principle that predominates economic analysis which focuses mostly on marginal value

judgements. Annual Marginal productivities of some inputs for some years show negative values and economically, these inputs were being wasted as they contributed negatively to total output. Overall performance in such cases meant reductions in the total output levels which in some cases had not been true.

4.1.1 Average Productivity

The average productivity for the various inputs considered very crucial to agricultural production have been measured in the study. This is contained in Table 4.1 in pages 83 and 84.

4.1.1.1 Average productivity of land

Land used to be one of the most common inputs in agricultural production in developing countries but of recent, it has become very scarce and therefore a binding resource (MINAGRI, 1991). This is due especially to population pressure and the need of land for other purposes. In Cameroon and during the period under consideration, total GDP per hectare of total land area reached a maximum of about 7857FCFA in 1986. Agricultural GDP per hectare of total land area has been increasing on the overall up to 1989 when it reached some 2171FCFA. Between 1990 and 1992 , agricultural GDP per hectare of total land had been decreasing, reaching a

minimum of about 1617FCFA in 1992. Agricultural GDP per hectare of agricultural land is more accurate as a reflection of land productivity in the agricultural sector than the consideration of total land. On the whole, it has been increasing since 1980 to 1989 and the reverse has been the case since 1989 till 1992. Average agricultural GDP per agricultural land was about 108042FCFA/ha between 1980 and 1992. The falling agricultural land productivity since 1990 can be partly explained by a decline in the application of other agricultural inputs like fertilizer, chemcicals, etc as a consequence of the SAP policies. Particularly, the subsidy removal component of the programme had been a direct and immidiate cause of this decline. Columns (5), (6) and (7) of table 4.1 in pages 83 and 84 show average land productivities during the years under consideration.

4.1.1.2: Average productivity of labour

In peasant farming which constitutes the greater proportion of agricultural production in Cameroon, labour and land used to be the most abundant resources for agricultural production. Arthur Lewis in 1962, considered labour as the surplus factor in peasant

agriculture and therefore attributed a zero marginal productivity value to it in his model of growth[9]. In the past, there was a continuous emigration of labour from the agricultural sector to other sectors of the economy and from the rural areas to urban centres. The SAP policies in Cameroon have aimed at reversing the trend and this seems to be yielding no fruits as youths, particular, are continuously migrating to towns whereas the aged after retirement are reluctant of returning to their villages and a majority of them prefer to establish businesses in urban areas or work as guards.

Total GDP per capita which measures the general performance of the economy shows that the Cameroonian economy has been performing well since 1980 to 1986 with an annual GDP per capita of about 349689FCFA in 1986. However, after 1986, things have not been going well for the country. Particularly, as from 1990, GDP per capita fell below the average of 1980 to 1992. Agricultural GDP per capita attained its maximum in 1987 and since then has been falling. Agricultural GDP per capita of agricultural population which measures the average productivity of agricultural population and which is of

[9] Arthur Lewis (1962) considered that at least Marginal Productivity of Labour in the traditional sector should be less than that in the capitalist sector so that there can be recruitment of the surplus labour from the subsistence sector by the capitalist or modern sector.

paramount importance in the study shows the same trend. Two factors can explain this phenomenon; increasing agricultural population and declining agricultural GDP. The latter has been more influential in explaining the falling agricultural GDP per capita of agricultural population. The fall in export earnings which had been one of the causes of the crisis has been aggravated by the SAP policies. The shifting from cash to food crops production which are autoconsumed and not sold has contributed to the falling agricultural GDP. In effect, SAP has led to an increase in informal activities to the detriment of formal ones and thus, the falling macroeconomic aggregates. Falling prices of both food and cash crops have also been a contributing factor to the decreasing per capita GDP and agricultural GDP. Population has been on the increase although there has been a slight drop in its growth rate from about 5.3 percent in 1987 to about 2.9 percent in 1992 for total population. Agricultural population growth rate on the other hand had been increasing. Averagely, it increased at the rate of about 3.3 percent between 1980 and 1987 but this increased to about 4.5 percent between 1988 and 1992.

Per capita cash crop production of total and agricultural populations have been on the decline since

the implementation of SAP in 1988. Cash crop prouction per capita of agricultural population increased from about 27658 FCFA in 1980 to about 65093 FCFA in 1987 before falling to about 54094 FCFA in 1988 and this has continued and finally attaining about 37939 FCFA in 1992. In fact, average cash crop earnings per capita of agricultural population between 1980 and 1992 had been more than for 1990, 1991 and 1992. The explanations are two fold. Firstly, the falling producer prices which is a direct consequent of falling free on board (FOB) prices. Producer prices for cocoa dropped from 450 FCFA/Kg in 1987 to 200 FCFA/Kg in 1992 and that for cotton fell from 140 FCFA to 95 FCFA during the same period. Secondly, a fall in the overall volume of cash crop production in Cameroon. Cocoa production fell from 132000 metric tons in 1988 to less than 90,000 in 1992 and Arabica coffee production fell from about 23706 tons in 1987 to below 14000 in 1992 (DEAPA, 1993). The SAP policies encouraged crop diversification and this has resulted to resources shifting from the cash crop subsector to the food crop subsector. Studies carried out by the Direction des enquètes agro-économiques et de la planification agricole - DEAPA in early 1993 showed that in 1987, about 679,130 people were involved in cash crop production but this number reduced to less than 550,

000 in 1992, whereas during the same period, those engaged in the food crop subsector increased from about 1,166,000 to more than 1,500,000. The probable reason for this shift of resources is that people are becoming more cautious of their food security than for cash as this may not even be paid to them.

Despite the shift of resources in favour of the food crops subsector, there have been slight falls in food crop earnings per capita of total and agricultural populations. In effect, food crop earnings is a function of two variables; price and quantity produced. Prices for food crops in Cameroon had fallen seriously. A study carried out in 1992 by MIDEVIV on the marketing of food crops in Yaounde, showed that the same bunch of plantains that costed 1500 FCFA in 1986 was only about 500 FCFA by October, 1992. This applies to other foodstuffs and for other towns. Production of food crops has increased but at a lesser rate than the price fall. The overall effect on earnings is a slight increase. But because agricultural population has increased tremendously, agricultural GDP per capita is bound to fall. Columns 1 to 4 and 12 to 14 of Table 4.1 in pages 83 and 84 show details about productivity of labour during the the various years of the study.

4.1.1.3: Fertilizer productivity

Before the adjustment programme, the heaviest subsidized agricultural input was fertilizer. It was distributed to farmers at token rates through government controlled channels; the Marketing Board and Cooperatives. This system gave the opportunities to people with political power to have access to fertilizer and at times free of charge. Subsistent farmers paid highly for this but deliveries were always late or never made at all. The privatisation and complete withdrawal of subsidies from fertilizer has some effects on its productivity. As indicated in Column 8 of Table 4.1, in pages 83 and 84, agricultural GDP per Kg of fertilizer used had been fluctuating between 1980 and 1987 but overall, it increased from about 5160 FCFA per Kg of fertilizer used in 1980 to about 5900 FCFA in 1987. With the introduction of SAP in 1988 and the subsidization component being among the first packages to be implemented, fertilizer productivity increased probably because it was not available and people began seeing how costly it was to buy at the full market price. Average productivity rose sharply in December, 1988 to an encouraging 13513 FCFA per Kg, fell to about 7259 FCFA in 1989 and had subsequently been falling with that of 1990, 1991 and 1992 being less than the average between 1980

and 1992. One of the possible reasons for this continued fall in the agricultural GDP per Kg of fertilizer use is the falling GDP itself. As already explained, both total GDP and agricultural GDP had been falling since 1989 due primarily to low prices for goods and services, and particularly agriculltural products. With farmers paying fully for fertilizers, the expectations were that there will be increased productivity but the actual observation is far short of expectations. The tight financial situation in Cameroon since 1989 seems to be having a negative effect on agricultural modernisation, particularly fertilizer use. Many farmers cannot afford spending the little cash in their possession as they are never sure whether their products will be sold. This is particularly severe with cash crop producers who were the main consumers of fertilizers in large quantities. The increasing taxation policy of the government on businesses has resulted to high prices for agricultural inputs and particularly fertilizer and this had been a detering factor to fertilizer use. In 1987, about 164,435 tons of fertilizer was used by farmers but by 1992, only about 145,000 tons were used and mostly in cooperative farms (MINAGRI, 1993). A study undertaken by Nyemba in 1993 on the fertilizer subsector reform programme at village level in the Western Province of

Cameroon showed similar results, i.e. falling fertilizer productivity at village level.

4.1.1.4 Agricultural equipment productivity

Agricultural equipment as defined in chapter three includes simple farm tools like hoes, axes, cutlasses, etc. to highly complex machineries like tractors, ploughs, drillers, combined harvesters, etc. used in preparing the soil and in harvesting. It also includes equipment for storage, transportation and processing of agricultural products like bicycles, carts, vehicles, engine saws, refrigerators, coffee pulpers, etc. Before an adjustment programme in 1988, agricultural mechanisation was managed jointly by CENEEMA (Centre National d'Etudes et d'Experimentation du Machinisme Agricole) engaged in agricultural engineering, ONCPB (Office National de Commercialisation des Produits de Base - the National Produce Marketing Board) and Cooperatives engaged in the distribution of these equipment to farmers and/or farming regions at subsidized rates. With the coming of SAP, CENEEMA has been liquidated, ONCPB restructured and the government disengaging itself completely from cooperative management and the removal of subsidies from agricultural equipment. The resulting consequences have been a sporadic fall in

the usage of agricultural equipment particularly heavy machines that were hitherto provided by the state. Expenditure on acquisition of these equipment has declined from 5.5 billion FCFA in 1987 to less than a billion in 1992. Productivity per FCFA spent on agricultural equipment has increased; stepping up from about 170 FCFA in 1986 to more than 760 in 1992. This is a direct consequence of a very limited number of agricultural equipment used by farmers. In fact, there have been a shift from expensive farm tools to cheap rudimentary ones. The expectations were that overall average productivity of these equipment should fall but the reverse is the case. The explanation for this apparent contradiction is that the rate at which agricultural GDP has fallen is far less than the rate at which agricultural equipment used have decreased. Column 9 of Table 4.1 in pages 83 and 84 shows more details about agricultural equipment use productivity during study period.

4.1.1.5 Agricultural credit productivity

As indicated in Table 4.1, it is imperative that agricultural credits were given to farmers at a very low token rates of interest by FONADER (Fond Nationale de Développement Rurale). This corporation was bankrupt by

1988 because of massive disbursement of funds for purposes not related to agricultural development and the non-repayment of these loans. The loan deliquency rate was high for both loans acquired for agricultrual and non-agricultural purposes particularly by those of the elite population who had political power. In fact, prior to 1988, loan disbursement was highly correlated to political rather than economic influences. The liquidation of FONADER that began in 1989 and is still in process today, gave way to a successor organisation - Credit Agricole du Cameroun (CAC). Ownership is however not entirely public (the government has only about 30 percent of the share capital) and management is entirely commercial and undertaken not by government agents. Credit Agricole gives all types of loans but some preference is given to farmers. In fact, its operation is like that of any other commercial bank in Cameroon. Because of the difficulty involved in getting loans today, the tendency for rational use has developed among farmers. This has resulted to a reasonably high agricultural credit use productivity as indicated in table 4.1 in pages 83 and 84.

Generally, it can be concluded that SAP has had a negative impact on average productivity of the various agricultural inputs considered in the study. However, it

TABLE 4.1: **Average Productivity of Inputs**

Year	Total GDP Per Capita (FCFA)	Total GDP Per Capita of active Population (FCFA)	Agric. GDP per Capita (FCFA)	Agric. GDP per Capita of Agric. Population (FCFA)	Total GDP Per land area (FCFA/HA)	Agric. GDP per land Area (FCFA/HA)	Agric. GDP per Agric. Land (FCFA/HA)	Agric. GDP per Ferti lizer used (FCFA/Kg)	Agric. GDP per FCFA of Agric.Equip-ment used
1980	168000	426558	48177	158927	3030	869	58355	5160	297
1981	208798	523303	56741	184644	3860	1049	70447	5689	369
1982	246126	616922	66459	216255	4669	1261	84661	5681	366
1983	289410	741643	67124	218417	5625	1305	87619	4448	313
1984	337417	864682	74137	241237	6865	1508	101299	5229	268
1985	339471	869822	79565	258893	7246	1698	113482	6272	197
1986	349689	881557	86822	277900	7857	1951	130352	5988	171
1987	310663	795928	90177	293504	7224	2097	140115	5935	176
1988	298810	758800	83391	269169	7179	2003	133869	13513	530
1989	284922	718374	87574	278402	7065	2171	145097	7259	659
1990	269496	690568	71126	225286	6891	1819	120776	5287	564
1991	235732	604081	62471	196885	6202	1644	109147	5029	461
1992	234812	578717	60814	184671	6357	1646	108332	5282	766
Average 1980-92	274873	697766	71891	231092	6159	1617	108042	6213	395

Source: Computed from Survey Data

TABLE 4.1: Cont'd

Year	Agric. GDP Per FCFA of Agric. Credit Used	Cash Crop Population Per Capita (FCFA)	Cash Crop Production Per Agric. Population (FCFA)	Food Crop Production Per Capita (FCFA)	Food Crop Production Per Agric. Population (FCFA)	Agric. GDP as a % of Total GDP	Cash Crop Production as a % of Agric. GDP	Food Crop Production as a % of Agric. GDP
1980	345	8491	27658	24880	81041	28.7	17.6	51.6
1981	352	10485	34121	29583	96267	27.2	18.5	52.1
1982	591	13693	44556	34019	110696	27.0	20.6	51.1
1983	608	16169	52613	31680	103086	23.2	24.1	47.2
1984	657	18536	60315	35289	114829	22.0	25.0	47.6
1985	410	20131	65504	37539	122147	23.4	25.3	47.2
1986	299	18816	60226	42794	136975	24.8	21.7	49.3
1987	346	19999	65093	42854	139480	29.0	22.2	47.5
1988	12950	16759	54094	37664	121572	27.9	20.1	45.2
1989	5774	18138	57660	36846	117135	30.7	20.7	42.1
1990	312	11362	35989	34299	108639	26.4	16.0	48.2
1991	278	11915	37552	34335	108212	26.5	19.1	55.0
1992	275	12494	37939	36085	109578	25.9	20.5	59.3
Average 1980-92	1784	15153	48717	35221	113051	26.4	20.9	49.5

Source: Computed from Survey Data

has not been easy to measure these with perfection taking into consideration the fact that inputs used are inter-related and individual productivity levels may not truely reflect what has actually taken place or is taking place.

Table 4.2 in page 86 shows the relative values of the variables analysed in this sub-section of productivity measure. 1986 is chosen for the base year for reasons already stated in Chapter three. From the table, the various changes due to the policy changes can be appreciated with a relatively higher degree of accuracy. As an observation, only Agricultural GDP per FCFA spent on agricultural equipment has been better off with SAP due to reeasons already stated.

TABLE 4.2: **Relative Value Productivities**

YEAR	TOTAL GDP Per Capita	Agric. GDP Per Capita	Total GDP Per Active Popul.	Agric. GDP Per Active Popula.	Total GDP Per ha total Land	Total GDP Per Hactare Agric. Land	Agric. GDP Per Total Land	Agric. GDP Per Agric. Land	Agric. GDP Per FCFA of Agric. Equipment	Agric. GDP Per Kg of Ferti-lizer	Agric. GDP Per FCFA of Agric. Credit
1980	48	55	48	57	39	39	45	45	174	86	115
1981	60	65	59	66	49	49	54	54	216	95	118
1982	70	77	70	78	59	60	65	65	214	95	198
1983	83	77	84	79	72	72	67	67	183	74	203
1984	96	85	98	87	87	88	77	78	157	87	220
1985	79	92	99	93	92	92	87	87	115	100	137
1986	100	100	100	100	100	100	100	100	100	100	100
1987	89	104	90	106	92	92	107	107	100	99	116
1988	85	96	86	97	91	91	103	103	310	226	4331
1989	81	101	81	100	90	90	111	111	384	121	1931
1990	77	82	78	81	88	87	93	93	330	88	104
1991	67	72	68	71	79	78	84	84	270	84	93
1992	67	70	66	66	81	80	84	84	448	88	92

SOURCE: Computed from Survey Data

4.1.2 Marginal Productivity Measure

In Microeconomic theory, marginal values are used in determining optimum production of firms. Generally, marginal value analyses are more important in equillibrium analyses than average value. However, since the study is far from determining equillibrium combinations of inputs, marginal values analyses are not treated in details. Table 4.3 in page 88, summarises the marginal productivities of the various inputs during the study period. It shows that during this period, the marginal productivities of some of the inputs have been negative. This means that agricultural production has been taking place in the third stage of the production function, using the jargon of economic theory. The sector had gone beyond the required level which is supposed to be in the second stage of production with falling but positive marginal productivity. The difficulty involved in establishing true marginal values individually for the various inputs emanates from the fact that all the inputs are correlated and is the joint effect that actually detemines the level of agricultural GDP. This is beyond the scope of this study.

TABLE 4.3: Marginal Productivities of Inputs

Year	LAND (FCFA/ha)	LABOUR (FCFA/person)	FERTILIZER (FCFA/Kg)	AGRIC. EQUIP. Per/FCFA	AGRIC. CREDIT Per/FCFA
1980	58355	156927	5160	297	345
1981	-	1250746	11242	-2205	392
1982	-	1427536	5643	353	-250
1983	-	305970	617	61	3417
1984	-	729231	-419840	140	1354
1985	2531428	618182	-95969	63	103
1986	-	549065	4588	91	106
1987	-	1127414	5309	318	-308
1988	-	-312950	456*	12*	16*
1989	-	471084	1114	-359	759
1990	-3318604	-1292913	-7863	4105*	-65
1991	-	-636719	10181*	-509	-2203
1992	-	4924	-185	-2	35

SOURCE: Computed from Survey Data.

* - Both inputs and Agricultural GDP are reducing and thus, the marginal productivities though reducing are positive.

Mathematically, this is correct, but economically, it does not make sense.

4.2 GROWTH RATES OF VARIABLES

One way of measuring agricultural performance generally, is the consideration of growth rates of the variables concerned. Specifically, the effects of a policy change can be evaluated by taking into consideration rates of growth of the variables affected by the change. This is particularly important as relative changes can be assessed from growth rates. Table 4.4 in page 108 illustrates growth rates of the various key variables considered in the study during the study period in percentages.

4.2.1 Total GDP Growth

The GDP of Cameroon which represents a summation of all goods and services produced within the frontiers of Cameroon during a period of time usually a year and measured in FCFA, had been increasing until 1986. This high rate of growth could be attributed to the oil sector which was the leading sector in the economy during this period. In fact, it was the engine of growth of the economy. Since 1987, GDP had been falling. It registered the highest fall in 1991; dropping from about 3207 billion FCFA in 1990 to about 2886 billions in 1991 in absolute terms and recording a negative growth rate of about 10 percent. This again can be explained by the

sudden fall in oil production coupled with low prices of oil per barrel in the world market. The decline could equally be explained by falling export earnings from agricultural products. Fig. 4.1 in page 91 shows the evolution of total GDP in Cameroon between 1980 and 1992. The growth rates of this major macroeconomic aggregate is presented in column 1 of Table 4.4. in page 108.

4.2.2 Agricultural GDP Growth

As already defined in chapter 3, agricultural GDP represents a sum total of all agricultural products produced within Cameroon during a specified time period. As presented in Table 4.4 in page 108, agricultural GDP registered the highest growth rate in 1981 of 20.7 percent. Between 1981 and 1987, it grew at an average encouraging rate of 13.6 percent, recording the least rate in 1983 due essentially to the 1981 to 1982 droughts. In 1988 at the commencement of SAP, agricultural GDP recorded a negative growth rate of 4.5 percent due principally to falling world prices of agricultural exports which resulted to stock accumulation. However, by 1989, prices were declining the more and the accumulated stocks were released thereby increasing agricultura GDP by 8.4 percent. In 1990 and 1991, agricultural GDP continued to fall. The collapse

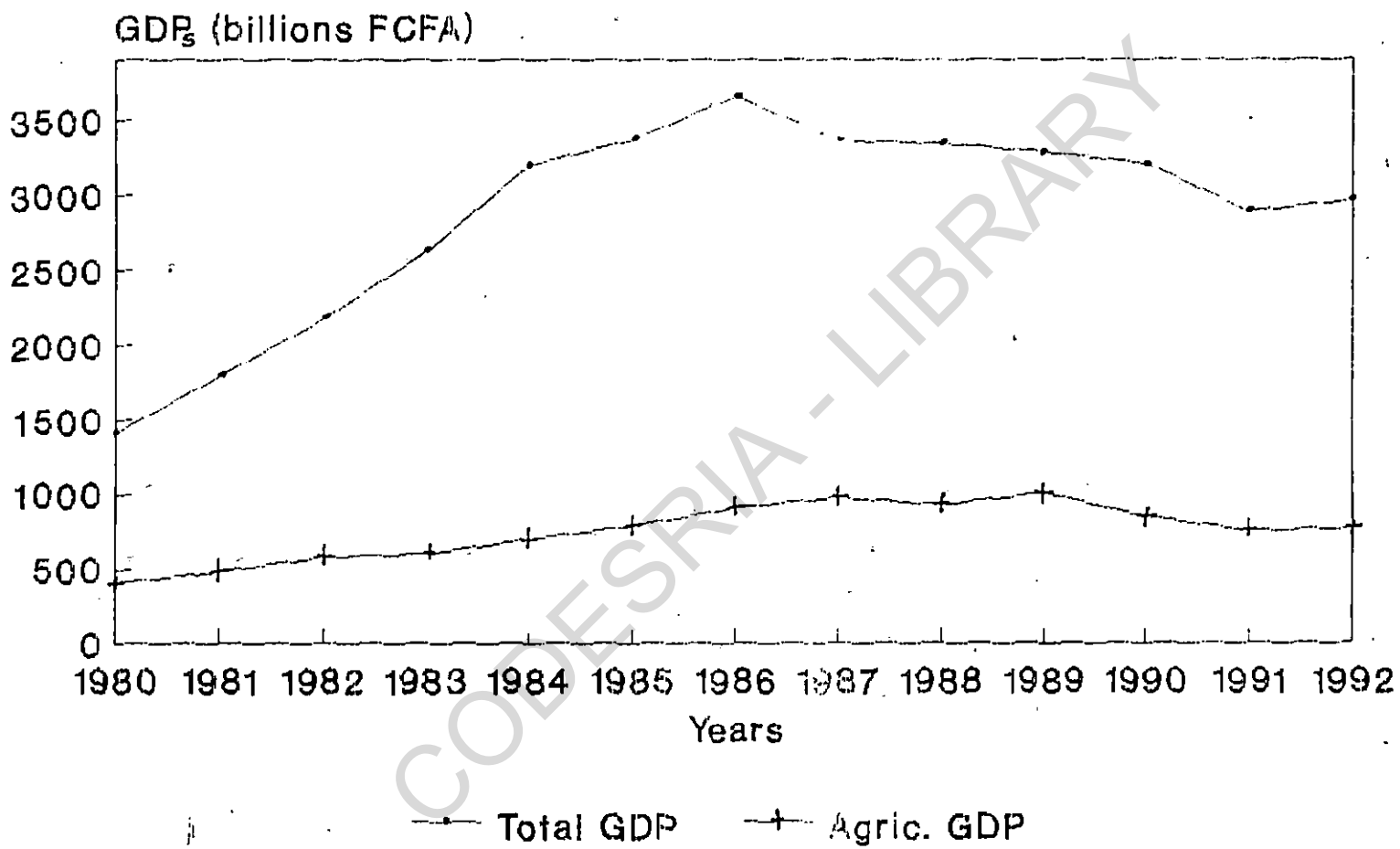


Fig 4.1: Evolution of Total and Agricultural GDP between 1980 & 1992

of so many agricultural corporations resulted to the above falls. Fig 4.1 in page 91 illustrates the evoulution of agricultural GDP in Cameroon between 1980 and 1992.

4.2.3 Agricultural Exports Growth

This represents both cash and food crop exports. Table 4.4 in page 108 indicates the annual growth rates of export earnings from agricultural products in Cameroon in column 3. It recorded negative growth rates between 1980 and 1982. This was due to the climatic hazards of this period. The prolonged droughts adversely affected both the food and cash crops subsectors. Between 1983 and 1985, export earnings from agricultural products increased. The low prices of cash crops in 1986, 1987 and 1988 resulted to the holding of stocks by exporters thereby leading to a fall in export values as cash crops constituted a greater part of agricultural exports. In 1989, it was clear that the low price trend was to continue and stocks were released. The immediate consequence was an extraordinarily large growth rate of 39 percent. This could not be sustained as producers of cash crops were discouraged from production due to unsold produce and eventually low producer prices which could not enable them even to break-even and to subsist with

their families. Because of measures taken within the SAP context, farmers are once more encouraged to resume production. However, the 4.6 percent growth rate recorded in 1992 was principally from cotton exports as SAP seems to have boosted cotton produciton in Cameroon. The Cotton Development Corporation (SODECOTON) is presently the most financially viable agricultural parastatal still under the government portfolio. Fig. 4.2 in page 94 shows in a graphical form, the trend of export earnings from the agricultural sector in Cameroon between 1980 and 1992.

4.2.4 Growth of Agricultural Imports

Generally, agricultural imports into Cameroon are principally processed foodstuffs and agricultural equipment. As indicated in Table 4.4 in page 108, expenditure on imports of the agricultural sector increased from about 29.3 billion FCFA in 1980 to 80.5 billions in 1986 recording an average growth of rate of 16.7 percent. In 1987, it recorded a negative growth of 16.7 percent and was a deliberate action taken by the government to reduce food imports but this policy was not sustainable because of the cheapness of these imports. High import duties could not solve the problem. Averagely, between 1981 and 1992, agricultural imports

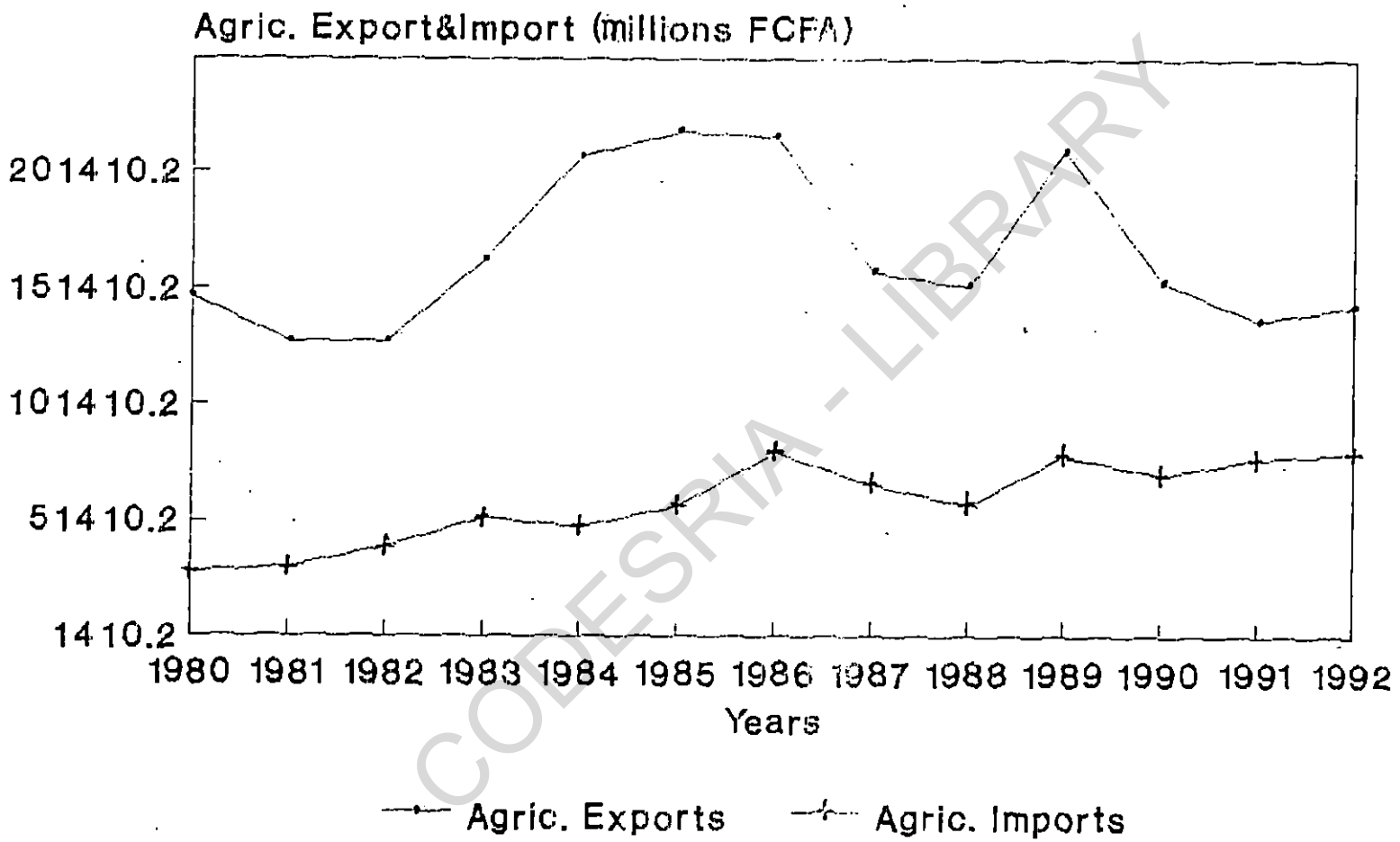


Fig 4.2: Evolution of Agricultural Exports & imports between 1980 & 1992

into Cameroon increased at a rate of 10.5 percent, far above the rate of growth of agricultural exports. The explanation was that Cameroonian products were very costly in foreign and domestic markets due to an over-valued currency before January 1994, whereas imports were cheaper. The devaluation policy adopted by some neighbouring countries particularly Nigeria, of recent was the major cause for imports increasingly flooding Cameroon markets. Fig. 4.2 in page 94 illustrates the evolution of agricultural imports into Cameroon between 1980 and 1992.

4.2.5 Cash Crop Production

The impact of SAP on the cash crop sub-sector has been on the overall unfavourable. Judging from the growth rates as indicated in Table 4.4 in page 108, averagely, between 1981 and 1987, production of cash crops increased at the rate of 17.7 percent whereas, the implementation of SAP in 1988 resulted in production falling averagely by 4.3 percent between 1988 and 1992. However, the greatest decline was reached in 1990 with a negative 35.4 percent growth rate and this was the immediate consequence of the austerity measures. In 1991 and 1992, cash crop production had been increasing modestly at a rate less than the average between 1980 and

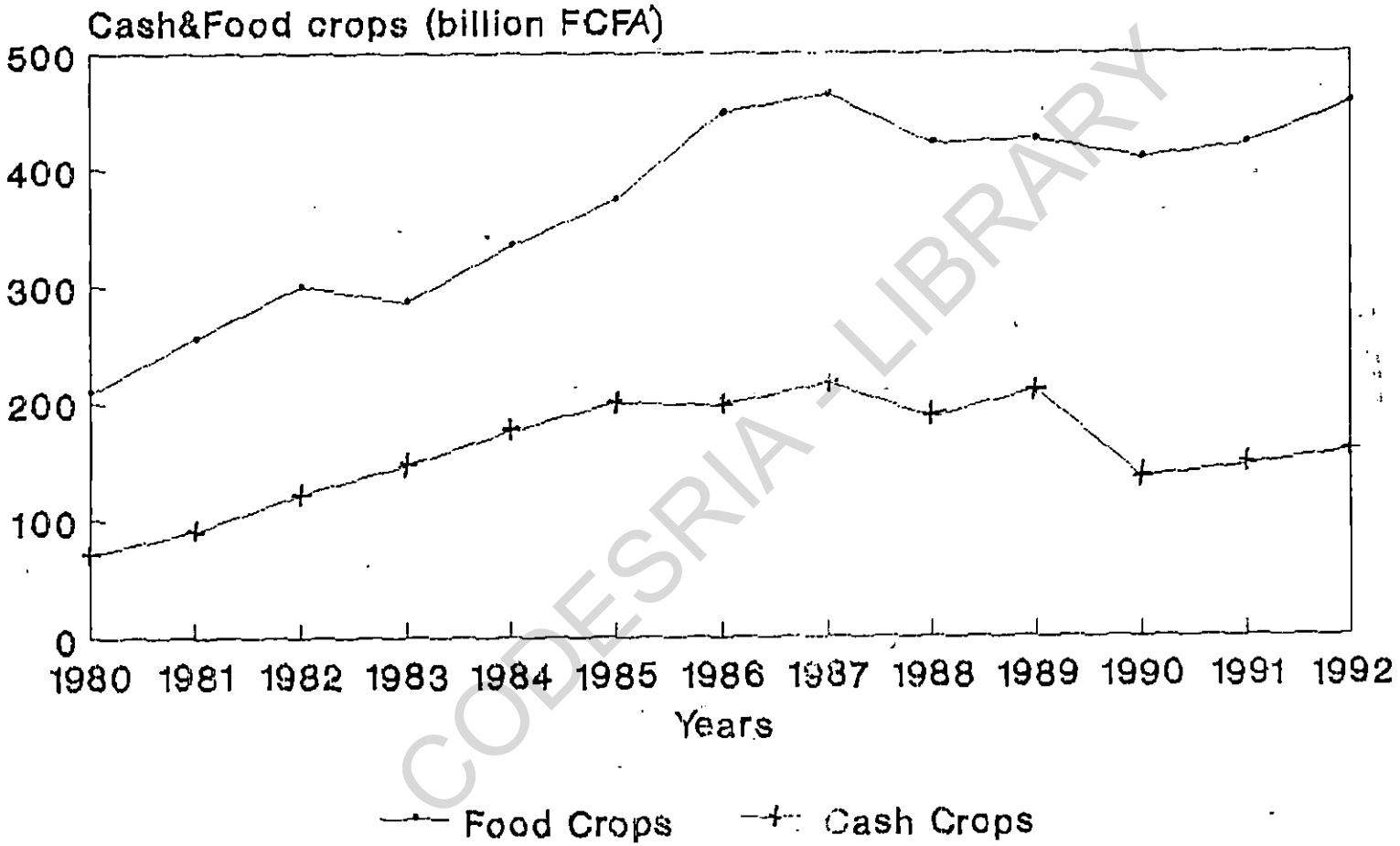


Fig 4.3: Cash and Food Crop Production
between 1980 & 1992

1992. In absolute terms, the evolution of the production of cash crops in Cameroon is presented in Fig. 4.3 in page 96. It shows a high rate of variation.

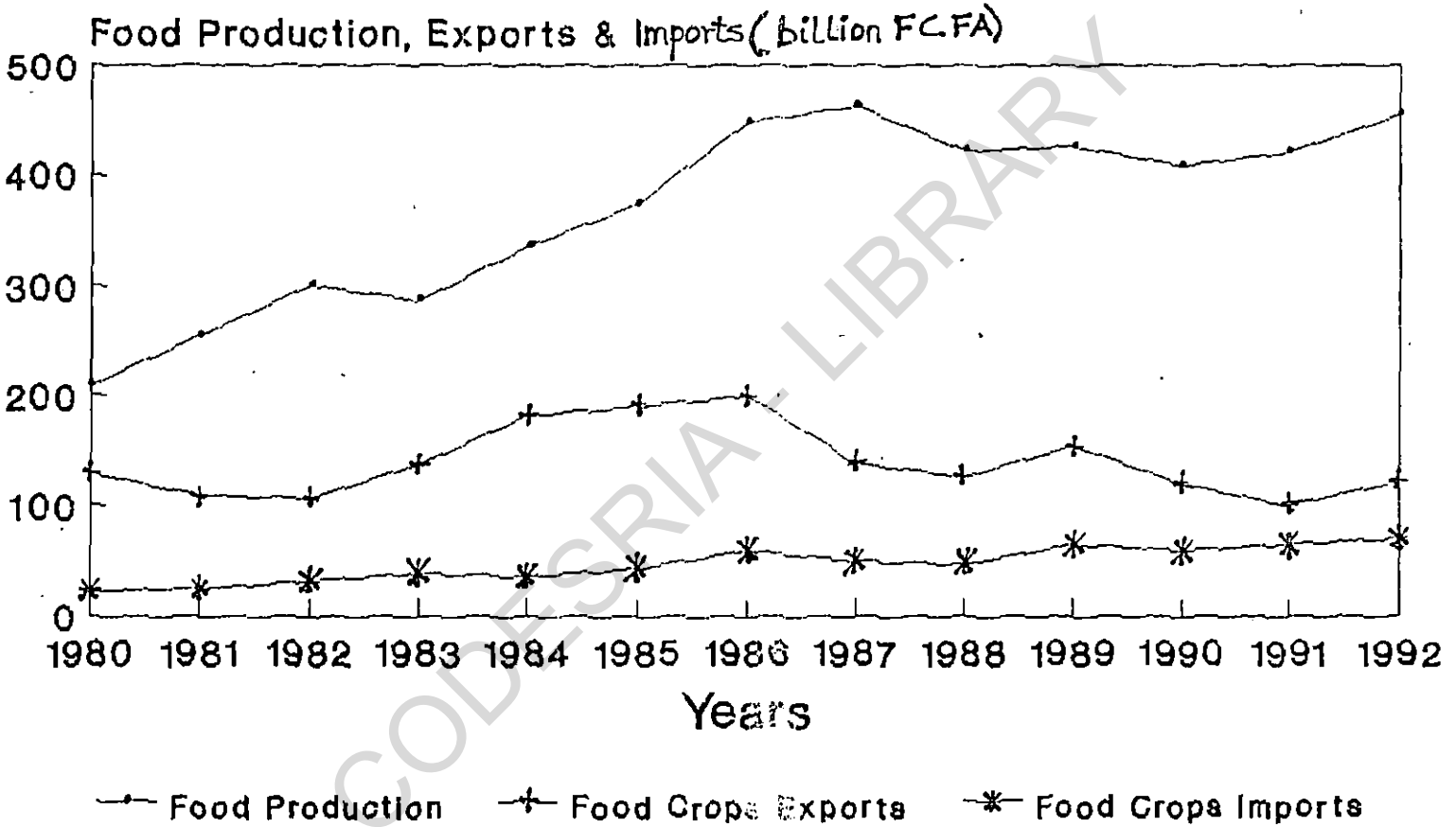
4.2.6 Food Crop Production

Between 1980 and 1992, food crop production in Cameroon registered an average growth rate of about 7.2 percent as indicated in Table 4.4 in page 108. However, during some years, growth was more than this average. As in other variables, between 1980 and 1986, annual growth rates of food crop production were more than the average for all the years except that of 1983. In 1983, the impact of the droughts was reflected by a negative growth rate of 4.6 percent. During the SAP period, food production growth had been less than the average for the 13 years of the study. On this basis, it may be said that the impact of SAP on the food crop subsector though less unfavourable than for other subsectors, had not effectively been encouraging. In Fig. 4.3 of page 96, the evolution of food crop production is illustrated.

The cash and food group subsector have a direct impact on agricultural exports. They are equally directly affected by input use.

4.2.7 Food Self-Sufficiency Ratio

Cameroon is one of the countries of sub-saharan Africa remarked for sustaining high food self-sufficiency. Averagely, between 1980 and 1992, the ratio had been 144.8 percent. This is determined by three factors; food production, food exports and food imports. From the formula in chapter 3, food exports far exceeded food imports in all the years of the study and this explains why the food self-sufficiency ratio is that high for all the years. A high ratio does not indicate that there had been no food shortages in Cameroon. The three northern provinces suffer from malnutrition yearly due to poor transportation network between the south and the north, as due to climatic factors, the north cannot produce enough food for the high population of this region. However, as shown in Table 4.4 in page 108, the food self-sufficiency ratio has fallen during the SAP period. This has resulted to the structural and chronic poor living even below the minimum food requirements. Fig. 4.4 in page 99 shows in a graphical form, the relationships between food production, food exports and imports during study period.



Fig·4·4: Food Crop Production, exports and imports between 1980 and 1992

4.2.8 Agricultural Population Growth

This is the variable that had been positively affected by the adjustment programme. As seen in Table 4.4 of page 108, agricultural population has been growing at a rate more than that of the total population. Averagely, between 1980 and 1992, agricultural population grew at the rate of 4.1 percent as against 3.2 percent for total population. This is contrary to development theory which states that during the process of economic development, structural changes occur in the economy leading to agricultural population growing at an inferior rate than total population. This reversal can be explained by reasons related to the adjustment programme. Massive retrenchment of workers by both the public and private sectors swore up agricultural population. Liquidity scarcity during the adjustment period also acted as a stimulant to increasing agricultural population. Shifts of population to the agricultural sector had been in favour of food crop production. In table 4.4, it is seen that agricultural population growth rate had been higher during the programme than before the programme. Averagely, between 1988 and 1992, it registered a growth rate of 4.5 percent as against 3.7 percent between 1980 and 1987. With the problem of scarcity of money in circulation becoming more acute,

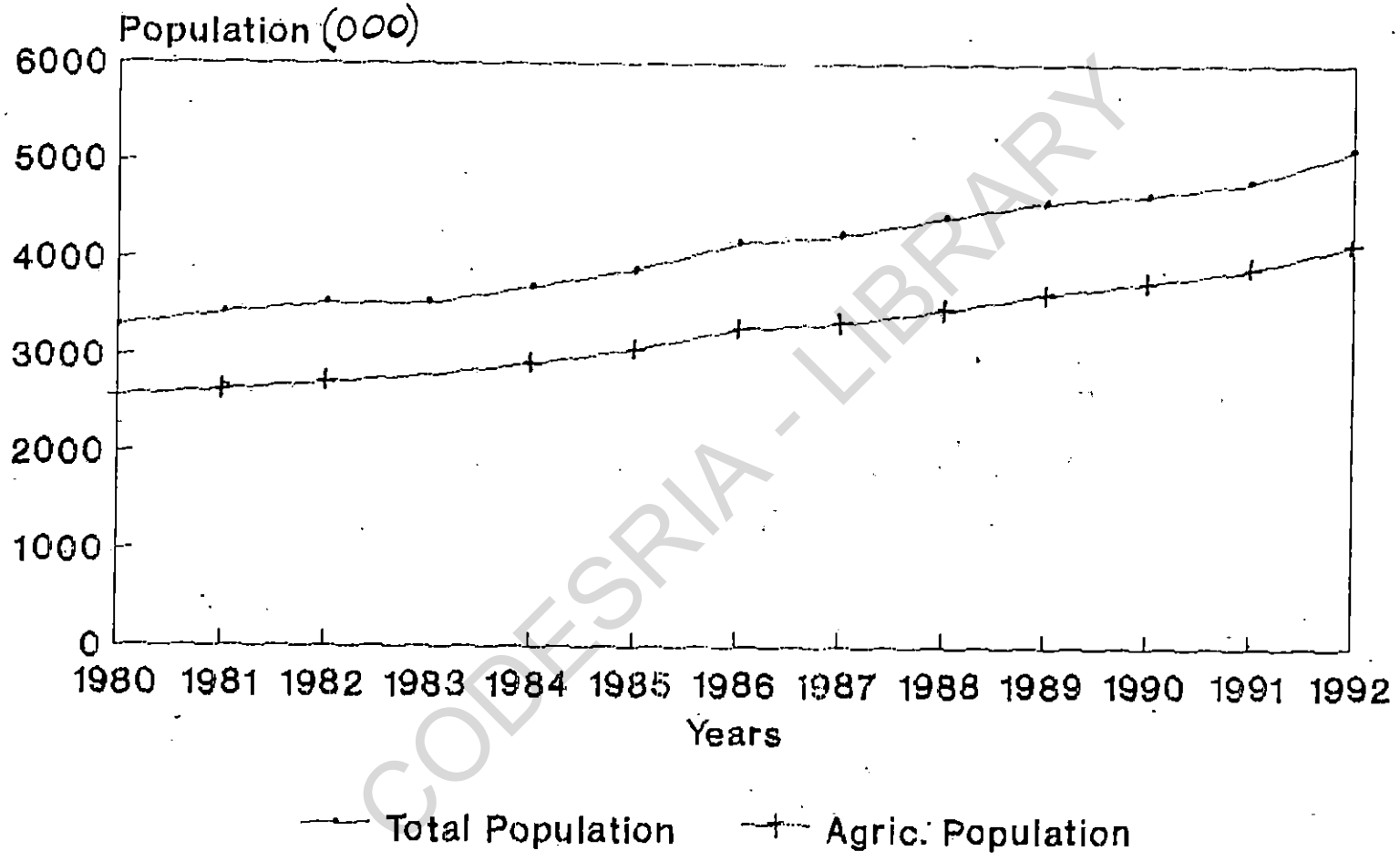


Fig 4.5: Total and Agricultural Population (Active population only)

people are turning towards producing food for subsistence and thereby depending less on buying food. Fig. 4.5 in page 101 shows the relationship between total population and agricultural population during study period.

4.2.9 Fertilizer Growth Rate

Before the SAP period, fertilizer use recorded high growth rates particularly during 1981 and 1982 because farmers applied fertilizer intensively to offset the adverse effect of droughts which occured during this period and adversely affected their production levels. During the SAP period, and immediately with the removal of fertilizer subsidy in 1988, there was a decrease in fertilizer use by about 50 percent because private businessmen thought they could maximise profits by charging exorbitant prices and also because of increasing government taxes. Farmers responded by boycotting purchases in 1989 because of high prices. In 1988, the government under pressure from farmers had to intervene and a maximum price for fertilizer was fixed far below the market price and businessmen were threatened to forfeit their stocks if the policy was not followed. Thus, in 1989, there was a high growth in fertilizer usage. The government could not continue monitoring fertilizer prices as it was besieged by more pressing

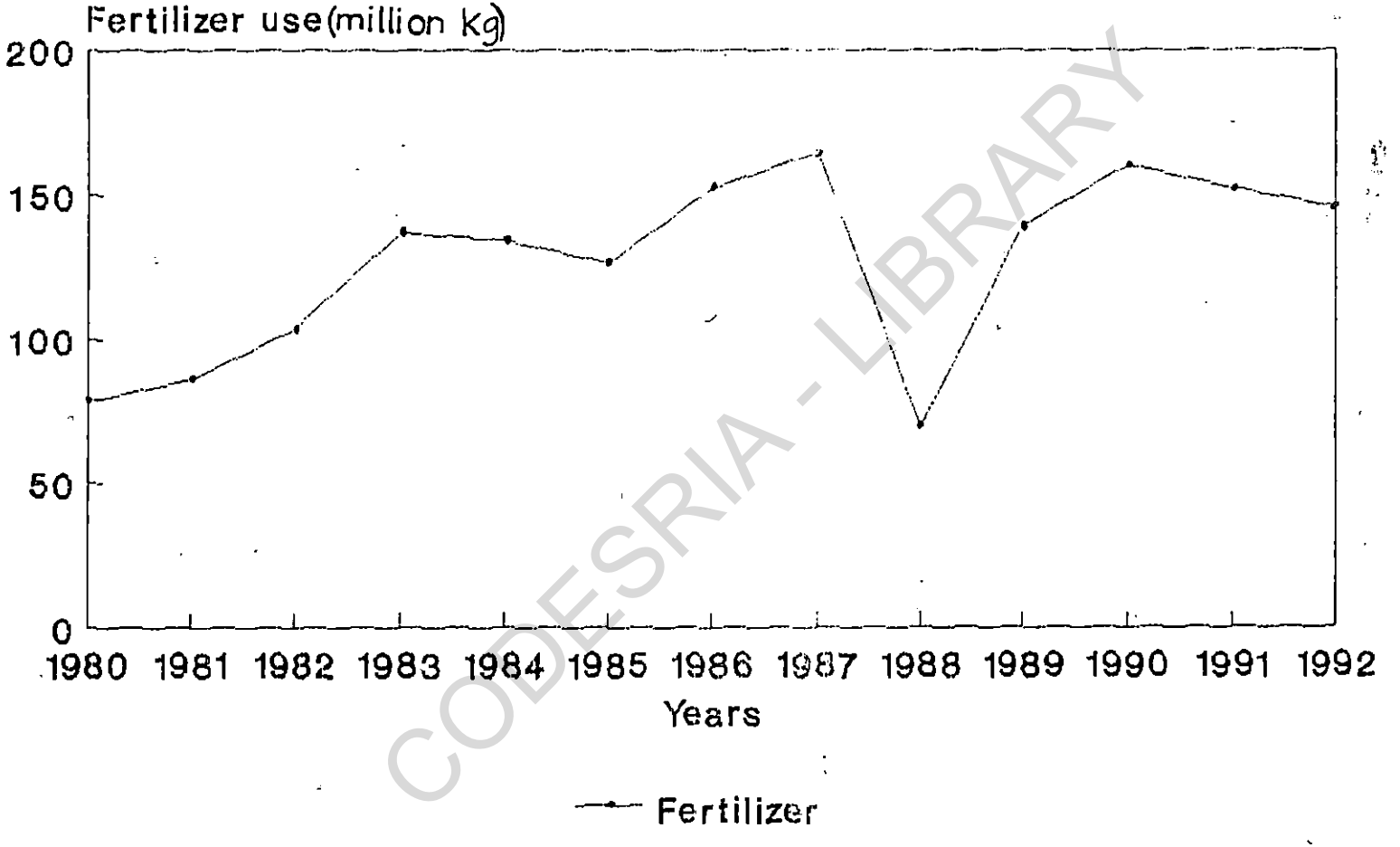


Fig 4.6: Fertilizer use between 1980 & 1992

problems like unemployment, elections, salary payments, etc. Businessmen started increasing prices and eventually, it was far above the ceiling price. This has resulted to the negative growth rates recorded during 1991 and 1992. Table 4.4 in page 108, column 8 shows the movements in fertilizer usage growth rates during 1980 to 1992. Fig. 4.6 in page 103 shows the evolution of fertilizer usage during study period.

4.2.10 Growth of Agricultural Equipment use

From Table 4.4 in page 108, it is observed that the use of agricultural equipment has been increasing positively before the adjustment programme; increasing at an average rate of 23.3 percent but decreased during the adjustment period, averaging a negative 22.5 percent. This could be explained by the fact that before SAP, some equipment was provided by the government free of charge while others were sold at subsidized rates. This way, many farmers could benefit by using them but with the removal of subsidies from agricultural inputs in 1988, very few farmers could afford buying a majority of these equipment. The non-regular payment of salaries had worsen the situation as a majority of people cannot plan well in advance. Fig. 4.7 in page 105 illustrates the evolution of expenditure on agricultural equipment during study period.

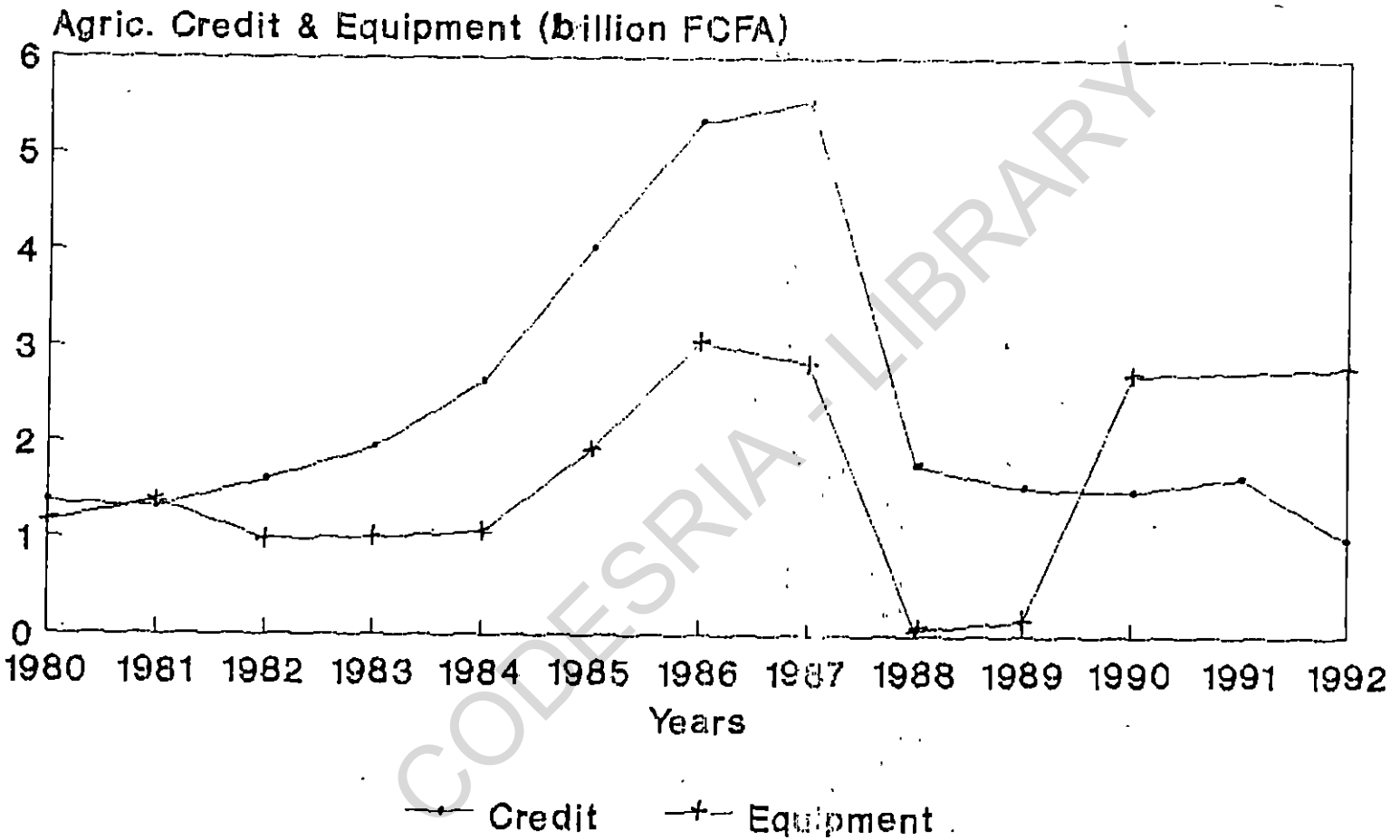


Fig 4.7: Agricultural Equipment Expenditure and Credit use between 1980 & 1992

4.2.11 Agricultural Credit Growth

This is one of the most important variables that affect agricultural production in any society. Farmers need loans to buy their farm requirements and for other family commitments outside agriculture. In this study, only agricultural credit given by a government institution is considered. Column 10 of Table 4.4 in page 108, shows that the government has been disbursing credits to this sector reasonably at an increasing rate until 1986. Between 1980 and 1986, credits to agriculture from government sources (particularly FONADER), was increasing encouragingly and averaged 22.6 percent. In 1987, FONADER was facing financial difficulties and this resulted to a negative rate of growth of credits to the agricultural sector. In 1988, FONADER was set for liquidation and thus, the little agricultural credit accorded. In 1990 with the birth of Credit Agricole du Cameroun, agricultural credits swollen, attaining a record growth rate of about 1450 perent. The impact of SAP on agricultural credits had been that it has facilitated credit disbursements to farmers if they meet the required collateral requirements of the financial institutions. This is contrary to what existed before SAP when credits, though given at subsidized interest rates, were not always given to those

fulfilling the conditions and thus, the resulting high loan deliquency rate. Fig. 4.7 in page 105 illustrates graphically the evolution of agricultural credits during study period.

4.3 STABILITY OF GROWTH OF MAJOR VARIABLES

As defined in Chapter Three, stability of growth measures the variation with respect to the mean of the various variables in percentages. This measures performane in terms of sustainability of growth. From Table 4.4 in page 108, the values show that agricultural population had been the most stable and thus sustainable during the study period with only about 2.3 percent deviation from the mean. Food self-sufficiency has been also relatively stable, recording an instability rate of only 3.6 percent. Growth in agricultural exports, food production, fertilizers use, Total GDP and agricultural GDP have been relatively stable. Growth in agricultural imports and cash crop production have been relatively unstable. Agricultural equipment and credit have been the most unstable variables recording stability rates of 38.1 and 35.6 percents respectively. The unstable variables are those that are highly volatile to policy changes. Particular measures are therefore needed for maintaining sustainable growth in these variables.

TABLE 4.4: Annual Growth Rates and Stability of growth of Major Variables

YEAR	Total GDP	Agric. GDP	Agric. Exports	Agric. Imports	Cash Crop Production	Food Crop Production	Food Self-Sufficiency Ratios	Fertilizer use	Agric. Equipment	Agric. Credit	Agric. Population
1980	-	-	-	-	-	-	205	-	-	-	-
1981	27.4	20.7	-13.3	06.5	21.9	21.9	150	09.5	-02.8	18.5	02.6
1982	20.9	20.2	-00.003	26.9	34.0	18.0	134	20.3	20.1	-28.4	02.6
1983	20.5	03.5	27.2	32.3	21.0	-04.6	152	32.2	21.1	00.6	02.5
1984	22.0	15.6	27.4	-07.1	20.0	16.6	177	-01.7	34.8	07.0	04.7
1985	05.5	12.6	05.1	17.3	14.0	11.6	164	-06.1	53.6	80.5	04.9
1986	08.4	14.9	-00.8	40.9	-01.6	20.0	145	20.3	32.3	57.6	07.0
1987	-08.1	07.5	-26.8	-16.7	10.0	03.6	168	08.4	04.0	-07.3	01.8
1988	-00.1	-04.5	-04.2	-13.9	-13.4	-09.2	123	-50.0	-68.2	-97.4	04.2
1989	01.6	08.4	+37.2	+37.2	11.7	01.0	126	101.8	-12.4	143.1	04.8
1990	-02.4	-16.2	-26.8	-10.4	-35.4	-04.0	117	15.0	-02.6	1449.7	03.5
1991	-10.0	-09.6	-10.8	+09.7	07.9	03.0	109	-05.0	10.7	01.4	03.4
1992	02.5	00.2	04.6	+03.3	07.9	08.1	112	-04.6	-39.8	01.3	06.8
AVERAGE (1981-92)	07.1	06.1	1.7	10.5	08.6	07.2	144.8	11.7	04.2	135.5	04.1
Stability of growth (%)	6.0	6.6	3.9	8.9	7.6	4.7	3.6	5.9	38.1	35.6	2.3
Stability of growth for pre-SAP years (%)	15.7	18.2	11.2	11.9	7.8	8.9	1.6	10.2	33.6	39.2	21.4
Stability of Growth for SAP years (%)	35.5	26.2	16.8	25.2	15.8	10.7	2.9	12.6	26.6	57.6	07.4

SOURCE: Computed from survey Data.

Stability of growth rates of the various variables for the pre-SAP years show high degree of instability for the but are relatively more stable than during the programme. This is due to inconsistency in policy implementation.

4.4 ECONOMETRIC ANALYSIS OF STRUCTURAL CHANGES IN THE AGRICULTURAL SECTOR IN CAMEROON

The esssence of development policies can be stated in terms of mobilizing limited resources in order to generate structural changes necessary to stimulate a sustained growth of the economy. The term structure in economics has many meanings. In the context of this study, economic structure is used to refer to the complex relationships that exist between inputs and output. This is derived from Keynesian macroeconomic models which constitute the major quantitative model of economic systems. Agricultural structural adjustment in Cameroon as already explicity discussed in Chapter One and Two was and is aimed at revamping the sector through generating structural changes that will improve production and productivity and thereby stimulating growth of the national economy. This section of the study examines the existence of structural changes in this sector by testing for the constancy of the parameters of the econometric models formulated in chapter three and equally changes in

input mix in agricultural production. This method had been used by Kwanashie in 1984 in testing for structural changes in the Nigerian economy.

The various functional forms (linear, semi-logarithmic and double logarithmic) were used in the estimation process but because the semi-logarithmic form gave the best fit based on the criteria specified in section 3.5.5 of Chapter Three, it has been chosen for analysis. The Ordinary Least Square estimation method (OLS) was used because it is simple to deal with and also it gives direct results. Empirical results of estimated parameters are presented in table 4.5 of page 112 for the three regression equations and Analysis of Variance (ANOVA) is also reported in Table 4.6 of page 115.

4.4.1 Results of Estimated Parameters

The results of the estimates showed that the equations in the semi-logarithmic forms were well specified and therefore, this functional form was chosen for analysis. This was based on the fact that all the coefficients have the expected signs and the explanatory variables contributed positively to Agricultural GDP or in other words, these variables were rightly chosen.

The high values of the coefficients of multiple determination (R^2) and adjusted coefficient of multiple

determination (R^2), showed that the data fitted well in the equations and particularly, the semi-logarithmic functional forms chosen for analysis. These high values equally showed that the correct explanatory variables have were chosen for the various regressions.

In regression 1, the t-value associated with the estimate of the constant term, is significant at 1 percent level of significance for a one-tail test. The t-values associated with the estimates of fertilizer (X_2) and agricultural equipment (X_3) are significant at 5 percent level for on-tail tests. The t-value associated with the estimate of agricultural credit (X_4) is significant at the 10 percent level. In regression 2, the t-values associated with the estimates of the constant term and agricultural equipment are significant at 5 percent level but that for agricultural equipment is true only for a one-tail test. The t-values associated with the estimates of fertilizer and agricultural credit are significant at 1 percent level for one-tail test. In regression 3, the t-values associated with the estimates of all the parameters of the various variables are significant at 1 percent level but that for agricultural equipment holds true only for a one-tail test. It should be noted that if a test is significant at 1 percent then it will automatically be significant at 5 percent and at

TABLE 4.5: The Estimated Parameters from OLS Method.

Regression No.	N	Constant term	$LogX_2$	$LogX_3$	$LogX_4$
1	8	4491	283.4	171.2	71.06
		$(2.93)^*$	$(1.98)^{**}$	$(2.26)^{**}$	$(1.91)^{***}$
		$R^2 = 97.6\%$ & $\bar{R}^2 = 95.7\%$			
2	5	1451	235.2	18.4	87.98
		$(2.90)^{**}$	$(3.86)^*$	$(2.13)^{**}$	$(3.39)^*$
		$R^2 = 94.3\%$ & $\bar{R}^2 = 77.4\%$			
3	13	5450	529.9	117.2	127.27
		$(3.44)^*$	$(3.45)^*$	$(2.73)^*$	$(3.40)^*$
		$R^2 = 70.0\%$ & $\bar{R}^2 = 60.0\%$			

N = Number of observations (in this study, it corresponds to the number of years).

* = t-values significant at 1%,

** = t-values significant at 5%,

*** = t-values significant at 10%

X_2 = Value of fertilizer,

X_3 = Value of agricultural equipment,

X_4 = Value of agricultural credit,

R^2 = Coefficient of Determinantion and

$\bar{R}^2$ = Adjusted Coefficient at 10%

SOURCE: Established from regression results print - out.

10 percent levels. The above observations show that all the variables significantly explained the variations in agricultural GDP before and during SAP. However, to test for strcutrual changes during the study period, the Chow test method was used and this required a detail analysis of variance in order to know precisely the various magnitudes of variations attributed to regression and to error terms in the various regressions.

4.4.2 Analysis of Variance of Agricultural GDP

Variation in agricultural GDP was decomposed into variation due to regression and to random disturbances for the purpose of the test. The results obtained by using the semi-logarithmic functional forms are presented in table 4.6 of page 115.

From the ANOVA Table, it is observed that in all regressions, variations in agricultural GDP have resulted mostly from variation in the explanatory variables. This shows that the explanatory variables used in the study are the most deterministic factors in explaining variation in agricultural GDP in Cameroon. However, some other factors such as land, customs, traditions, etc. explain to a lesser extent agricultural GDP variation. In regression one, about 2.5 percent variation in the dependent variable is explained by random variables. In

regression two, about 6 percent is explained by the random variables whereas in regression three, as much as 43 percent of the variation in agricultural GDP is explained by variables not considered in the models. In Table 4.6, the influence of the various variables are shown. For the first period, that is before SAP, fertilizer was the most important factor in explaining variation in agricultural production. It contributed about 85 percent to the changes observed in agricultural GDP.

During the SAP years, it has been agricultural finance (credit) that has contributed greatest to variation observed in agricultural GDP; explaining about 69 percent of the variation. During the entire study period (1980-1992), agricultural finance was the most important variable in explaining changes in agricultural production; explaining more than 55 percent of the total variation in agricultural GDP.

using the formulation in appendix 1, calculated F-ratio was found to be 15.74 and this is more than critical F-values even at 0.5 percent level of significance and thus is significant at 1, 5 and 10 percent levels which are the most widely used in test of significance. The conclusion drawn from the test is that there have been significant structural changes in the

TABLE 4.6: Analysis of Variance: (Values in Millions of FCFA)

Rgression 1:			
Source of Variation	DF	SS	MS
Regression	3	272054	90685
Error	4	6797	1699
Total	7	278851	
Individual Variables:			
LogX2	1	231859	
LogX3	1	39104	
LogX4	1	1091	
Total	3	272054	
Regression 2:			
Source of Variation	DF	SS	MS
Rgression	3	43272	14424
Error	1	2594	2594
Total	4	45866	
Individual Variables:			
LogX2	1	8253	
LogX3	1	5250	
LogX4	1	29769	
Total	3	43272	
Regression 3:			
Source of Variation	DF	SS	MS
Regression	3	298187	99396
Error	9	127625	14181
Total	12	425812	
Individual Variables:			
LogX2	1	100594	
LogX3	1	33414	
LogX4	1	164179	
Total	3	298187	

SOURCE: Established from regression result print-out.

Computed F-ratio = 15.74 to 2 decimal places.

DF = Degrees of freedom

SS = Sum of squares
MS = Mean square.

agricultural sector in Cameroon and thus, the hypothesis on structural stagnation of input mix before and during SAP is rejected. The changes in terms of improvements or not of input productivities is beyond the scope of this test. Since the major policy during the study period had been the structural adjustment programme, it can be said with a reasonable high degree of accuracy that structural adjustment in Cameroon has led to structural changes in the agricultural sector in terms of input use mix. The first section of this chapter has elaborately analysed the performance of the sector in terms of input productivities, growth and stability of growth and need no repetition here.

CHAPTER FIVE

SUMMARY OF FINDINGS, IMPLICATIONS, RECOMMENDATIONS, CONCLUSION, LIMITATIONS AND SUGGESTIONS FOR FURTHER STUDIES

5.1 SUMMARY OF FINDINGS

The major objective of this study was to evaluate the achievements so far registered in the agricultural sector in Cameroon under the adjustment programme. This had been done by comparing performance of the sector before adjustment (precisely from 1980 - 1987) to that during adjustment (1988 - 1992), that is, the before and during approach has been used in the study. This necessitated the examining of agricultural policy before and during the adjustment period and the identification of the success and failure elements of the programme. This section presents the findings of the study in summary form.

5.1.1 Productivity of Inputs

The two types of productivities, average and marginal productivities were considered in the study but emphasis have been placed on average productivity because it reflected to a higher degree annual productivities in

the agricultural sector. Land productivity has been found to have declined since the inception of SAP. Total GDP per hectare of total land area decreased from 7857FCFA in 1986 to about 6357 FCFA in 1992. Agricultural GDP per hectare of agricultural land which is a better measure of agricultural productivity than total GDP per hectare of total land, declined from 145,097FCFA in 1989 to below 110,000FCFA in 1992. Land formerly used for cash crop production had been converted to food crop production.

Labour productivity has equally been found to have fallen since SAP came into play. Agricultural GDP per capita of agricultural population reached a maximum of about 293,504FCFA in 1987 before the programme was implemented. It dropped to less than 190,000FCFA in 1992 in absolute terms, representing a decline of more than 35.3 percent in relative terms. Total GDP per capita fell during the same period from about 310663FCFA to 234812FCFA in absolute terms, representing a fall of about 24.5 percent. Based on these, agricultural GDP per capita of the agricultural population has been more adversely affected than the rest of the economy. Within the agricultural sector, cash crop production per capita of agricultural population fell by about 41.7 percent between 1987 and 1992 whereas food crop production per

capita of agricultural population fell by about 21.4 percent during the same period. This shows that per capita cash crop production has been more adverseley affected than the per capita food production.

Fertilizer productivity increased sharply in 1988 to about 13513FCFA per kg from its level of 5935FCFA per kg in 1987 representing a 127.7 percent increase. It fell to less than 5282FCFA per kg in 1992 showing that there have been fluctuations in fertilizer productivity during the SAP period.

Average productivity of agricultural equipment has increased. In 1987, agricultural GDP per franc spent on agricultural equipment was 176FCFA but this increased to about 766FCFA by 1992, representing an expansion rate of more that 355 percent in relative terms.

Agricultural credit productivity on its part increased sharply from 346FCFA in 1987 to 12950FCFA in 1988. This however fell drastically and by 1992, it was barely 275FCFA.

5.1.2 Growth of Variables

As one time president of the World Bank, Barber B. Conable put it in 1991, structural adjustment programmes are aimed at increasing productivity and stimulating growth. The growth rates of major variables considered

in the study showed that SAP had adversely affected instead of stimulating growth in the agricultural sector in Cameroon. Total GDP of Cameroon grew at a positive rate of 17.5 percent between 1980 and 1986. it grew at a negative rate between 1987 and 1992, registerring the greatest fall in 1991 with a negative growth rate of about 10 percent. Agricultural GDP on its part, recorded the highest fall in 1990 with a negative growth rate of about -16.2 percent.

Agricultural exports recorded an average growth rate of about 1.7 percent between 1980 and 1992. During the pre-SAP years, growth rate averaged a positive 2.7 percent but during the SAP years, it averaged zero percent. Contrarily, agricultural imports growth averaged a positive 14.3 percent during the pre-SAP years but recorded an average 5.2 percent growth during the SAP years. This showed that the current account balance of the agricultural sector has been worsening during the SAP period.

Cash crop production had been adversely affected by the adjustment programme. Production fell by about 4.3 percent between 1988 and 1992 with the greatest fall reached in 1990 when it fell by about 35.4 percent. Food crop production has been increasing but at a slower pace than before the programme. This has resulted to a

reduction in the food self-sufficiency ratio during the years of the programme.

The impact of SAP on the growth rate of agricultural population has been favourable. Agricultural population has grown at the rate of more than 4.5 percent between 1988 and 1992 as against a rate of 3.7 percent between 1980 and 1987. It grew at a rate higher than for total population.

Fertilizer, agricultural equipment and agricultural credits use have been affected differently. Fertilizer use had not been significantly affected by the programme. Average growth rate of fertilizer use was about 11.9 percent between 1980 and 1987 but this dropped slightly to about 11.5 percent between 1988 and 1992. Agricultural equipment use recorded a negative growth of about 22.5 percent between 1988 and 1992. Agricultural credit has grown at an enormous rate during the SAP period.

5.1.3 Structural Changes in the Agricultural Sector

Results of the test undertaken in this study showed that there have been structural changes in the agricultural sector during SAP in terms of the relative importance of the various inputs used in agricultural production. Before SAP, fertilizer was the most

important factor in explaining variations in agricultural GDP. It contributed about 85 percent to the variation in agricultural GDP. During SAP, it has been agricultural credit and this has been explaining about 69 percent in the variation of agricultural GDP.

However, the response of the sector to the policy changes has been slow and albeit negative. This could be explained by many factors. The will to change has not been matched by the ability to effect the change by the government. The period of adjustment has been characterised by both financial and political crises and these have made it difficult for reforms to be undertaken as needed. The contradiction between the IMF short-term stabilization programmes and the medium and long-term adjustment policy of the World Bank has created confussion in implementation of the various packages of the programme. The problem of over-valued currency until January 1994, has equally resulted to a slow response of the sector to these policy changes. The international environment for primary products producers has been generally unfavourable. The roles of international organisations in the adjustment process are not well spelt out, particularly the Food and Agricultural Organisation apperently plays no active role in the adjustment process.

Nevertheless, SAP has contributed favourably to a limited degree to the economy of Cameroon. Privatisation has encouraged accountability and therefore efficiency in resource management. Liberalisation of the economy has encouraged competition and subsequently, better quality of goods and services. Of particular importance to agriculture, the high unemployment rate and low wages in the urban centres is forcing youths to turn to agriculture.

5.2 IMPLICATIONS OF THE PROGRAMME FOR AGRICULTURAL DEVELOPMENT POLICY AND PLANNING

The structural adjustment programme which has as main objective reducing state intervention in the economy and thereby encouraging competition, business incentives and efficiency in the use of resources, has some implications for agricultural development. Firstly, agricultural trade liberalisation, except for some strategic products (rice, sugar, vegetable oil and maize), means that agricultural products will have to face competition from other countries both internationally and domestically. Necessary measures will have to be taken to ensure success for Cameroon products even in domestic markets. Secondly, because of

the stabilization component of the programme, farmers will have to assume the full costs of inputs as subsidies have been phased out. Other less costly measures will have to be adopted to help farmers. Thirdly, farmers can now market their products (cash crops particularly), without passing through the marketing board. The elimination of export taxes except for timber is a further stimulant for this operation. Farmers could easily form cooperatives to take care of this as the new cooperative law enacted in February 1993, gave autonomy to cooperatives. Fourthly, the relatively liberal investment code of November, 1990 gave opportunities for the opening of agricultural related enterprises and thus a local market for agricultural products. Fifthly, the intensive extension services of the past have been abolished and farmers have to do with little or no extension services as the T & V system adopted will not be effective because of the inability of the government to recruit sufficient extension agents. Sixthly, the democratisation process that accompanied the adjustment programme entails participation of the peasantry in government functioning through electing abled persons who could defend their interests at higher levels. The peasantry through the ballot boxes now constitute a strong political force in Cameroon. Multipartism, which

is also a child of the adjustment programme is of importance to the agricultural population. Through their various parties, they could force a point through to the the government.

5.3 RECOMMENDATIONS BASED ON FINDINGS FROM THE STUDY

Cognisance of the fact that SAP had not fully achieved its purpose due particularly to the problems identified in chapter five, some recommendations could be made for further consideration in the persuance of the programme and in ameliorating performance of the agricultural sector.

Firstly, considering the fact that agricultural credit is the most determining factor in agricultural production, the government should encourage rural banking programmes so that banking activities be carried to rural areas or to the rural people so that savings could be mobilised for agricultural modernisation. Credit Agricole should increase branches and more preference should be given to farmers. The collateral requirements of banks should be reduced for agricultural loans.

Secondly, there should be consistency in the design and implementation of adjustment programmes in order to generate the credibility required for the effectiveness of economic policies. Economic agents must be made to be

able to perceive that the government targets and instruments are mutually compatible and that they will not be subjected to unpredictable swings. Appropriate incentives and signals must be in place to guide decision making towards efficient resource allocation.

Thirdly, fiscal measures, adjustment and stabilisation policies should be reconciled. This is necessary in order to pre-empt many of the conflicts. This could be done by recognising important issues before formulating fiscal policies. In effect, it should be recognised that adjustment policies require trade-offs and thus, detailed analyses should be made before designing any policy.

Fourthly, the role of international orgnanisations should be recognised and specified. In addition to the IMF, the World Bank and the CCCE, the Food and Agricultural Organisation should be invited to participate fully in the programme as this organisation deals directly with agriculture. These organisations should increase adjustment lending packages and these should be tied to sectors rather than projects. The complementarity existing between these organisations and domestic reforms should be recognised. Sound domestic reforms without sufficient external financing may jeopardize the adjustment process by unduly reducing

consumption levels in the short-run and thereby undermining political sustainability of the programme. Similarly, external financing without sufficiently strong domestic reforms would simply add to debt accumulation without enhancing the long-run growth prospects of the country.

Fifthly, the parastatals and public enterprise sub-sector should be made more performant as the crisis in the financial sector have been caused mainly by mismanagement in this subsector. In addition to the measures already taken, enterprises still maintained in the public portfolio should be allowed to compete with private enterprises even in the areas of strategic goods and services. There should be full granting of financial autonomy and accountability in management of these Enterprises. The major reason that caused public enterprises to run into financial problems stemed from the fact that management and operation were not clearly seperated from political considerations. In many cases, such blured seperations resulted in diffuse and conflicting objectives and the dominance of political considerations which were not encouraging to the management of enterprises. Equally, there should be coordination within the government itself. The multiplicity of government bodies had always led to

confusion, duplication and excess control. Supervisory agencies should be formed to monitor excessive government interference.

Sixthly, the impact of the adjustment programme on the poor should be mitigated. Schemes aimed at lowering costs of food, targeting food supply to vulnerable households and raising the employment and income generating capacity of the poor should be implemented. These include subsidizing commodities and services that are generally needed by the poor (health services and primary education), retraining schemes particularly for the poor, provision of special credit assistance to the poor, etc. These compensatory schemes should not only provide short-term assistance but also to improving and expanding infrastructure to ensure better efficiency and effectiveness of these schemes even in the long-run.

5.4 CONCLUSION

Evidence from the study suggests that the adjustment programme has had rather mixed overall effects. For many of the variables considered, their growth rates fell during the first five years of the implementation of SAP except for agricultural population and food crop production. The programme has been relatively more successful in reducing the deficit in the current account of the Balance of Payments but

this has resulted from import compression rather than from export expansion. However, this positive effect has been insignificant to reduce the debt burden; effectively, the debt service ratio has risen rather than fallen.

The overall effect of the adjustment programme on the agricultrual sector in Cameroon has been unfavourable. In fact, the programme has had a deleterious effect on investment in agriculture. The peasantry had been hard hit by the programme. The adjustment programme cannot positively affect agriculture unless the government plays a greater, albeit redefined role in adjustment: where there is more public investment in agricultural technology, infrastructure, human capital; etc. in order to generate a supply response. Policy reforms should be made more credible to the private sector, programme implementation improved and there should be a better governance and more political stability for any policy to be effective.

5.5 LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FURTHER STUDIES

An adequate assessment of the effects of the adjustment programme on the agricultural sector in Cameroon is constrained by deficiency of data. It was

particularly difficult to have information on employment and issues related to finances. However, in cases where data existed, it was difficult to isolate the impact of adjustment from other changes particularly political changes. The period of adjustment is too short for the effects of some changes to have worked through the sector. In the study, effects of the adjustment programme have been assessed by comparing performance of some critical agricultural variables before the period of adjustment to their performance during the programme. But this approach is limited by the fact that the period prior to adjustment had not been the same with that during the programme because of changes in internal and external circumstances. More importantly, adjustment had been brought about by a prior pattern of development which proved to be unsustainable. An alternative approach had been comparing actual targets formulated at the time of programme preparation, to what had been implemented as of the time of study. This was not available in quantitative terms. Another factor that had been of an obstacle in this study is that the various measures included in the programme had not all been implemented. The main reasons had been inherent in the design of the programme, unforeseen internal and external developments, political opposition and over-ambitious

targets. By its nature, agricultural production tends to vary significantly from year to year and it had been difficult to seperate the impact of adjustment from that of changes due to climatic variations like flooding which had been causing havoc nearly yearly in the northern provinces. The models used particularly for analysing structural changes have not been sophisticated enough to embody all the explanatory variables that can affect the agricultural sector and thus, could not capture fully the effects of the complex, inter-linked reforms which make up the structural adjustment programme. Data used in some cases have been averages from many sources and this vary greatly from reality. The impact of the programme on the various groups of people in society have not been measured quantitatively. Resource limitations have not allowed for a deeper exploration of the effects of the programme on agriculture.

Empirical studies on the impact of SAP on the various sectors of the economy of Cameroon are lacking. This forms a fertile area for contemporary research topics and scholars should take up the challenge. Studies could be carried out on the effects of the programme on specific crops both food and cash crop production and marketing, performance of specific corporations both small and large scale, Rural financial

institutions, parallel trade with neighbouring countries on agricultural products, effects of subsidy removal on input prices, etc.

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APPENDIX I: Formulation of the Chow Test Model

In the three regressions that have been run, variation in Yaij has been decomposed into two.

$$SST = SSR + SSE$$

With SST = Total sum of squares

SSR = Regression sum of squares and

SSE = Error sum of squares

Three SSE_s were identified; SSE_1, SSE_2 and SSE_c.

The test consisted of examining whether the parameters have changed (i.e. βij, αij and aij). To arrive at a decision, the F-statistic was computed at the α% level of significance from

$$F^{\alpha}_{K,N+M-2K} = \frac{\dfrac{SSE_c - (SSE_1 + SSE_2)}{K}}{\dfrac{SSE_1 + SSE_2}{N + M - 2K}}$$

Where α = Level of significance

N = Number of observations in period 1 which was 8 in the study.

M = Number of observations in period 2 which was 5 in the study,

K = Number of parameters that have been estimated in each regression equation (K = 4 in each regression).

SSE_1, SSE_2 & SSE_c = SSE for the 1st, 2nd and 3rd regressions respectively.

APPENDIX II: Agricultural Inputs Between 1980 and 1992.

Year	Total Population	Total Active Population	Active Population of the agric. sector	Fertilizer Use(in 000 kg)	Agric. Equipment use (million FCFA)	Agric. Credit (million FCFA)	Land Area (000 HA)	Agricultural land (000 HA)
1980	8,394,000	3,306,000	2,577,000	78,368	1,361	1,173	465,400	6930
1981	8,604,000	3,433,000	2,644,000	85,822	1,323	1,387	465,400	6930
1982	8,828,000	3,522,000	2,713,000	103,276	1,602	993	465,400	6930
1983	9,046,000	3,530,000	2,780,000	136,509	1,940	999	465,400	6930
1984	9,469,000	3,695,000	2,910,000	134,251	2,616	1,069	465,400	6930
1985	9,934,000	3,877,000	3,053,000	126,015	4,019	1,930	465,400	6965
1986	10,457,000	4,148,000	3,267,000	151,626	5,317	3,041	465,400	6965
1987	10,822,000	4,224,000	3,325,000	164,435	5,531	2,820	465,400	6965
1988	11,181,000	4,403,000	3,464,000	69,000	1,758	72	465,400	6965
1989	11,540,000	4,577,000	3,630,000	139,212	1,540	175	465,400	6965
1990	11,900,000	4,644,000	3,757,000	160,094	1,500	2,712	465,400	7008
1991	12,244,000	4,778,000	3,885,000	152,089	1,660	2,749	465,400	7008
1992	12,599,000	5,112,000	4,149,000	145,064	1,000	2,786	465,400	7008

Sources: 1 - MINPAT/DSCN: Notes Annuelles des statistiques (1980 - 1992) for information on land and population

2 - MINAGRI: Bilan Diagnostique du secteur Agricole (1991/92).

3- MINFI: Finance Law (1979/80 - 1991/92) for information on agricultural equipment use.

APPENDIX III: Major Agricultural Variables

Year	Total GDP (billion FCFA)	Agric. GDP (billion FCFA)	Total Exports (million FCFA)	Total Imports (million FCFA)	Agric. Exports (million FCFA)	Agric. Imports (million FCFA)	Cash Crop Production (million FCFA)	Food Crop Production (million FCFA)
1980	1410.2	404.4	296981	311953	147685	29339	71275	208843
1981	1796.5	488.2	290851	364172	128086	31252	90216	254530
1982	2172.8	586.7	306314	401762	128082	39649	120880	300317
1983	2618.0	607.2	407203	416869	162942	52436	146264	286580
1984	3195.0	702.0	484144	462891	207631	48720	175517	334152
1985	3372.3	790.4	577662	484867	218275	57159	199984	372915
1986	3656.7	907.9	692969	588788	216596	80513	196758	447498
1987	3362.0	975.9	587105	558265	158486	67076	216433	463771
1988	3341.0	932.4	543775	571817	151833	57776	187383	421125
1989	3288.0	1010.6	627420	532122	211001	79240	209307	425200
1990	3207.0	846.4	623805	544975	154487	71007	135212	408158
1991	2886.3	764.9	676000	519548	137746	77924	145888	420403
1992	2958.4	766.2	624000	472933	144116	80521	157407	454640

APPENDIX III: Cont'd

Year	Cash Crop Exports (million FCFA)	Food Crop Exports (million FCFA)	Cash Crop Imports (million FCFA)	Food Crop Impor (million FCFA)
1980	136221	130005	585.0	22968
1981	116052	109186	789.3	23917
1982	115555	106560	534.6	30799
1983	150617	136954	437.9	38774
1984	190959	180232	670.8	34991
1985	228829	188802	1199.6	42726
1986	203729	198300	1121.0	59533
1987	146792	137812	1116.1	49384
1988	139257	125877	767.1	45962
1989	186691	152777	1261.0	64472
1990	121556	118559	685.9	58687
1991	9380	99597	692.3	64324
1992	9485	120881	698.8	70502

Sources: 1 - MINPAT: Comptes Nationaux du Cameroun (1980 - 1992) for information on production activities

2 - FAO : Year book on Trade (1980 - 1993) for information on international Trade.

APPENDIX IV: Exchange Rate Parity

Year	FCFA Per French Franc	FCFA per Naira	FCFA per US $
1980	50	422.6	211.3
1981	50	452.8	271.7
1982	50	469.4	328.6
1983	50	544.4	381.1
1984	50	546.3	437.0
1985	50	499.2	449.3
1986	50	192.4	346.3
1987	50	75.1	300.5
1988	50	64.2	297.9
1989	50	43.5	319.0
1990	50	33.3	272.3
1991	50	27.2	282.1
1992	50	24.7	278.6

Sources:
1 - IMF: International Financial Statisics /BOP Year Book for French Franc and US $ parity. (1980 - 1992)

2 - PNUD/World Bank: Donnees Economiques et financiere sur l'Afrique for ₦ parity between 1980 and 1986.

3 - CBN: Annual Reports for ₦ parity between 1987 and 1992.