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CAMEROON,S FOOD CONSUMPTION
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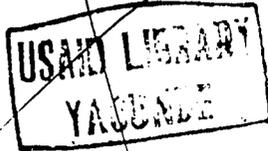
CONSUMPTION PROJECTIONS

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EXECUTIVE SUMMARY

Consumption studies for a country like Cameroon, are expected to reveal its qualitative and quantitative food needs and to provide indices on which its nutritional strategies could be based. The only nutrition study for Cameroon to which references are made was conducted in 1973. That study revealed that the Cameroonian diet is rich in carbohydrates and poor in lipids and proteins. Only 70% of the threshold animal protein intake requirements is satisfied. This is due in part to the relatively high costs of animal products and partly to taboos and social constraints against their consumption in some areas of the country. Of the 30gm/person/day recommended lipid consumption, only 52.4g/day/person are met.

Protein-caloric malnutrition was reported among 22.1% of children below 5 years, especially in the rural areas. Also 33.1% of the under five years were reported anaemic although the national per capita consumption of 36mg of iron/day is much higher than the recommended daily intake of 15.6mg. The persistence of anaemic conditions given such high iron intake is partially explained by the high incidence of malaria and sickle cell in several parts of the country. Despite this nutritional background, Cameroon, as indicated by its 6th Five Year Development Plan, assumes food self-sufficiency and consequently put forth its official food policy as "consolidating food self-sufficiency and

ensuring food security". However, she seeks to improve the nutritional status of her people through increased production, appropriate policies, intensified animal and fish production, improving food quality and reducing post-harvest losses.

This study reveals that quantitatively Cameroon's average per capita daily consumption of 1.420kg comes mainly from roots, tubers and other starchy foods as shown by the daily per capita intake of 455 grams from starchy foods, 225 grams from cereals, 213.6 grams from alcoholic drinks, 162.2 grams from fruits and 109.0 grams from vegetable . Contribution by all the other important food groups is rather small. Over 50% of what is produced is consumed by the producers. The crop products most heavily consumed, as shown by their per capita annual consumption, are plantains, cassava, maize, and millet/sorghum, in order of magnitude. Those least consumed are beans, Irish potatoes, and yams, in ascending order of magnitude.

The current per capita consumption is 10.05kg for cow meat, 2.03kg for sheep and goat meat, 1.93kg for pork, 1.33kg for poultry, 1.09kg for dairy products, 0.52kg for eggs, 2.6kg for game meat, and 9.00kg for fish. While all these are projected to increase by the year 2000, cow meat is expected to drop to 9.76kgs while game meat drops to 2.37kgs/person/year.

The major suppliers of all food crops are the South West, Centre, North West, and West provinces in that order, as opposed to the North, Adamawa, and Extreme

North provinces which supply the least. However, the three Northern provinces, the West and the North West, dominate the supply of cereals while the Centre, South West, North West, East, West, South, and Littoral, in that order, are the major suppliers of starchy foods.

Only 95% of Cameroon's food demands are satisfied and only two food groups - the starchy foods and fruits/vegetables satisfy 100% of their demand. The demand satisfaction rate for meat/fish is 74.1% with fish contributing very significantly. Projections to the year 2000 indicate high shortages for rice, wheat, and plantains. Increasing shortages are also projected for all meats, excepting poultry, whose supply is expected to increase considerably. Given such expected shortages, Cameroon is also unfortunately expected to depend on imports to bridge the demand-supply gaps. The study reveals that import demand for rice, beef, poultry and tinned meats can be cut down by raising import prices. On the other hand, domestic production could cut down the importation of beef, tinned meats, and dairy products but unfortunately will not be able to influence the importation of rice, vegetables, poultry and fruits.

In addition to the value of what is home produced and consumed, the annual per capita expenditure on food in Cameroon is 39.827 francs with most of the food budget spent on cereals, meat, fish/crustaceae/molluscs, fats and oils, and drinks/tobacco, in that order. Whereas no significant differences exist between food expenditures of households from different socio-professional groups, there are regional differences in the

expenditures of households. These arise from the feeding habits of the different agro-ecological zones and from the nature and quantities of what they produce, which together influence the food expenditure structure of their households. Neither prices nor food quality were shown to affect the structure of household food expenditures. Although the rate of food consumption by the producers is high (50%), it was shown that consumers (non-producers) in each production zone mostly depend on, spend on, and consume the food products originating from that zone - hence the consumption expenditures on each food group are high in the high production zones and low in the low production zones. However, shifts in consumption patterns have been observed in the urban centres of Yaounde and Douala where inter-regional contacts prevail between coexisting households of different regions.

Apart from rice and bread whose prices are similar in rural and urban centres, there exist considerable differences between urban and rural prices with urban prices generally higher. Differences in the retail prices of foodstuffs could be explained by transportation costs from their sources of supply, but in the major cities such differences are also due to demand and other factors. Although officially price regulations and control exist, they are ineffective and it is the forces of demand and supply that dictate food prices in the various markets. Such prices have been shown to exhibit

yearly, seasonal, daily and sometimes hourly variations. Price differences over time in the various towns generally exhibit fluctuating and rising trends for most food products. As illustrated by real and nominal prices for Yaounde, price changes over time for most commodities are basically due to inflationary forces. However, those for cereals, legumes and some vegetables could be explained by demand, supply and other factors.

Price projections show rising trends for maize, cocoyams, plantains and cassava, while declining trends are exhibited by groundnuts, bread, onions, rice and tomatoes.

Yaounde prices for plantains, maize, cassava, and cocoyams are shown to be rather rigid - they exhibit inelastic price elasticities of demand. Yam prices on the other hand are highly elastic while those for rice and beans are unitarily elastic. Apart from rice and perhaps wheat, most foodstuffs are easily substitutable. The price and substitution effects influence the consumption of most foodstuffs. Income effects are positive for rice, wheat, and honey/sugar but insignificant for most other foods except for cow meat, poultry and stimulants which have unitary income elasticity of consumption. The effect of increased income on starchy foods is negative but insignificant. Rice and bread play a substituting role in the face of price increases for other foodstuffs.

In the long run, rising food prices are expected to increase consumption expenditure. Whereas, in the short run rising prices are shown to adversely affect

the nutritional well-being of consumers and producers alike, and especially the health of the low income groups. Long-run effects are however expected to be positive to producers because of the expected increased production and sales of the food products provoked by high prices.

The recommendations that have resulted from the study to complement other already documented recommendations (section 6.1), are:

1. Appropriate efforts should be made to sustain and/or increase the supply of roots, tubers and other starchy foods which form the bulk of the food consumed in Cameroon, while intensifying and encouraging through public education, the production and consumption of other food crops with higher nutritional values.
2. Because of the regional specialization in food production, inter regional trade should be promoted in order to equalize supply and demand to ensure nutritional balance in all regions of the country. Marketing infrastructure and facilities should be improved between the supply areas and both the rural and urban consumption centres.
3. Appropriate measures should be taken to increase the domestic production of meat and fish, to bridge the present and future supply/demand gaps which have been shown to exist even in the presence of very high importation levels for these products.

4. While promoting the increased production of all food crops to bridge the expected future supply gaps, the dumping phenomenon exhibited for rice, poultry, vegetables and fruits, must be checked as it discourages domestic production efforts and incentives.

The authorities of the FAO library in Yaoundo for allowing us the use of their library facilities.

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CAMEROON'S FOOD CONSUMPTION AND CONSUMPTION PROJECTIONS

1. : INTRODUCTION

1.1 : Importance of Food Consumption Studies for Cameroon

The health, productivity and quality of life of a nation depend to a large extent on its nutritional status. The nutritional status involves both the quantity and quality of the food consumed. Quantity involves the size and efficiency of agricultural production, availability of adequate and appropriate processing facilities and technology, availability of adequate and efficient marketing facilities and distribution network, and also consumption patterns and habits that stimulate production. On the other hand, food quality refers to the quality of the diet. It may involve the tastes and preferences of the population, and the calorific, protein, vitamin and mineral content of the combination of food items in the diet that should satisfy the nutritional requirements of the population.

It is therefore reasonable for a nation to investigate the consumption patterns and habits of its various regions, in its urban and rural centres, and within its various socio-economic groups. Studies on consumption would permit Cameroon to know its nutritional needs both qualitatively and quantitatively. They would provide the indices on which the country's food nutrition strategies would be based. Such indices would reveal gaps between consumption and production so that appropriate short and long term measures could be taken to bridge them wherever they exist, in an effort to improve and sustain the nation's food self-sufficiency and assure the population of an adequate diet.

Consumption is a major motivating force behind investment. Increased food consumption is therefore expected to influence investment in the food sector and stimulate food production for both internal consumption and export. Studies on food consumption and consumption projections for Cameroon are therefore crucial at this stage of its economic and social development.

1.2 : Objectives of the Study

The objectives of this report are :

- to synthesize and evaluate existing information on food consumption patterns and prospects for Cameroon,
- reveal consumption trends, projections, and requirements,
- identify the impacts of current policies and institutions on consumption,
- to identify constraints and alternatives, and
- make appropriate suggestions and recommendations.

2 : METHODOLOGY

2.1 : Sources of Information

This study is based on available documented information on Cameroon's food consumption. The information was sought and obtained from the following public and private sources :

- The Ministry of Planning and Territorial Development
- The Ministry of Agriculture,
- The Ministry of Livestock, Fisheries and Animal Industries,

- The Ministry of Commerce and Industry,
- The Institute of Agronomic Research (IRA),
- The Institute of Animal Research (IRZ),
- The Food and Agricultural Organisation (FAO)
Yaounde,
- Societé d'Etudes pour le Developpement de l'Afrique
(SEDA), Yaounde,
- The University Centre of Dschang,
- The University Centre of Douala, and
- Other private sources.

2.2 : Relevant Literature Consulted

Documents obtained from the above sources were assembled, studied and critically compared and analysed. The principal documents consulted include reports on the following national studies :

(i) The Five Year Development Plans

The five year development plans and especially the 6th plan provide information on population distribution by province and by urban and rural centres, projections on population growth and rates of growth, projections on food demand and supply, production targets and on the general objectives of the food sector of the economy. They serve as the main reference documents for this study.

(ii) The Household Budget and Consumption Studies (September 1983 - September 1984) / 12 /

The study divides the country into six convenient study zones - the Yaounde, the Douala, the Cocoa-Tobacco, the coffee, the cotton-livestock, and the unclassified zones.

Samples from these zones were studied to provide information on the structure of annual incomes and expenses and on the various expenditure sectors. The food, drinks and tobacco sector was further broken down into nine food groups for further studies and analyses.

(iii) The Long Term Food Plan for Cameroon (1985 - 1995) / 18 /

The document provides information from studies on the availability of food in Cameroon under the following headings : Production, Importation, Stock variations with producers, Exports, Internal consumption, and food availability per individual. It gives an overview of the long term food production and consumption for the country.

(iv) The Study on the Problems of Production and Distribution of Foodstuffs in Cameroon (1986) / 3 /

This document by the Economic and Social Council provides information on the production evolution and distribution of all the major foodstuffs in Cameroon treating each one of them individually.

(v) The United Republic of Cameroon National Nutrition Survey 1978 / 24 /

The document provides detailed information on the estimates of the nutritional status of young children and their mothers, and compares the nutritional status among selected areas of the country. It also provides information on factors associated with nutritional status such as diet, socio-economic factors, health and demographic variables.

Other useful documents providing information at national level include :

- The marketing study on Foodstuffs,
- The National Fruit Plan and the National Vegetable Plan,
- The Feasibility study on grain storage and distribution in Cameroon, and
- The Master Plan of Industrialisation of Cameroon (Prices and Revenues).

Other sources of information include :

- Private studies on aspects of Cameroon's food production, consumption, Marketing and Policy,
- Research Reports and Publications on food production and consumption,
- Students dissertations and memoirs from the University Centres of Dschang and Douala, and from the University of Yaounde.

3 : DATA ANALYSES

3.1 : Introduction

The Sixth Five Year Economic, Social and Cultural Development Plan of Cameroon 1986 - 1991, states the general objectives of Cameroon's Food-Nutrition sector as :

- increasing food production at the national level so as to consolidate self-sufficiency and ensure food security, and
- improving the nutritional status of the people through the improvement of the marketing and distribution system to serve an increasing

population, taking into account provincial disparities and the poorest socio-economic classes. This will be done in accordance with the following guidelines and priority activities.

- 1 - Increasing the production of the main food crops,
- 2 - Laying down a policy for the preservation of natural resources,
- 3 - Devising a means of reducing post harvest losses,
- 4 - Intensifying the production of animal and fish products,
- 5 - Intensification of foodstuffs control through the revision of legislation on food sanitary control, and
- 6 - Taking measures to improve nutrition and food security through the improvement of food quality, implementing appropriate measures of eradicating diseases of malnutrition and ensuring access to basic foodstuff reserves for all the population.

To achieve these, the sixth plan has proposed production targets for foodstuffs in order to meet the net supply and demand situations projected for 1990/1991 in Table 1. The projections indicate a short supply for cocoyams/taro, sweet potatoes, Irish potatoes, legumes, most fruits, and fish, even when all post-harvest losses are "theoretically" eliminated. However, the overall situation promises surplus supply of foodstuffs by 1991.

Table 1 : Forecast of Production, Net Supply and Demand of Foodstuffs in 1998/1999 in (1000 tons)

Product	Production	Losses %	Net Supply	Demand	Gaps
<u>Cereals</u>	1510	-	1123	1033	+90
Millet and Sorghum	495	15	422	371	+5
Maine	590	15	506	559	+7
Rice	134	10	121	133	+32
<u>Wheat Flour and Starchy Foods</u>	3333	-	2875	2293	+583
Plantains	1224	15	1041	905	+138
Cocoyams and Yaro	237	15	201	502	-301
Cassava	1550	15	1411	502	+909
Yams	132	15	112	105	+6
Sweet potatoes	70	15	60	175	-115
Irish potatoes	50	15	51	105	-54
<u>Legumes</u>	252		228	374	-146
Groundnuts	125	15	106	192	-86
Beans-Lentils	70	20	56	120	-64
Beans	50	10	52	43	+4
Soybean	15	10	14	14	0
<u>Fruits and Vegetables</u>	1140		950		261
Danras	215	25	161	224	327
Other Fruits	90	30	63	355	-303
Legumes	235	25	177	-	-
Vegetable oils	135		122	101	-59
Palm oil	122	10	110	-	-
Other oils (cotton)	14	10	12	-	-
Sugar	30		30	30	0
<u>Total Agric. Products</u>	6317		5279	4530	
<u>Meat and Fish</u>					
Goat meat			115	115	+1
Sheep and goat meat			31	31	0
Pork			25	25	0
Chicken			24	13	+11
Milk and game			43	23	+14
Fish in meat equivalent			138	158	-16
<u>Total meat equivalent</u>			376	366	+10
<u>Grand Total</u>	6317		5655	4916	

Source : 6th Plan Pg. 11

These projections however seem too optimistic for certain food products. For instance, they forecast excess supply of locally produced rice which is apparently unrealistic given the current problems posed by the competition between imported rice that is virtually dumped into the country, and the locally produced rice. Domestic production is actually adversely affected by the current competitive situation.

3.2 : Analysis of Cameroon's Nutritional Status

Quantitatively, food consumption by the average Cameroonian is estimated at 1.428kg per day. The contribution of various food items to daily consumption is indicated in Table 2. The contribution of root, tubers and other starchy foods is most significant. Their daily intake is 455.5g/day. Other foodstuffs like cereals (with intake of 225.8g/day) alcoholic drinks (218.6g/day), fruits (162.8g/day) and vegetables (169.0g/day) are contributors of lower magnitude when compared to root and tubers. The percentage of family members consuming the various food groups, by province is presented in Table 3. It shows the relative importance of each food group to the families of the different provinces. The percentages indicated against each group serve as "indices of food availability" for the family [24]. It is the cities of Yaounde and Douala that have persistent high rates of food availability. Their indices are high for all the food categories

Table 2 : Average Per Capita Consumption of Food in Cameroon

Food Group	Consumption/ Person/Year (kg)	Consumption/ Person/day (gm)	Calories/ Person/ day (K cal)	Proteins Person/ day (gm.)	Lipid/ Person/ day (gm.)	Calcium/ Person/ day (mgm.)	Iron/ Person/ mg/day
Cereals	32.4	225.2	740	19.2	5.5	35	12
Root, tubers and other starchy foods	156.3	455.5	522	5.6	1.4	107	6
Sugar & Honey	21.5	59.0	57	0.1	-	2	-
Dry Legumes	4.0	13.0	41	2.7	0.3	13	1
Grains & Nuts	9.0	24.5	127	6.0	11.0	18	1
Vegetables	39.3	109.0	28	1.4	0.3	201	5
Fruits	59.4	162.2	115	1.7	0.5	15	2
Meats	12.2	39.6	67	6.2	5.5	3	2
Eggs	1.5	4.1	5	0.5	0.4	2	-
Milk	17.7	48.4	39	1.9	2.2	74	1
Fish/Crustaceae	21.1	35.5	24	3.4	0.4	35	2
Vegetable oils	10.9	29.3	264	-	29.3	1	-
Alcoholic Drinks	79.1	213.6	157	0.9	0.4	-	3
Stimulants	1.9	5.3	6	0.5	0.2	-	-
Spices	1.3	4.2	15	0.6	0.4	-	-
T O T A L	529.5	1427.2	2217	50.7	53.5	508	33

Source : Plan Alimentaire a Long Terme Pg. 16.

Table 3 : Percentage of Family* Members by Province, Consuming the Various Food Groups

Food Group	Central/ South	East	North	South West/ Littoral	North West/ West	Yaounde & Douala
Tubers	95	97	87	97	84	
Cereals	63	50	58	61	83	93
Beans, Seeds, & Nuts	77	57	61	66	72	75
Leafy Vegetables	43	53	40	47	35	30
Meat, Fish & Eggs	80	59	75	38	63	69
Milk	94	96	99	13	7	98
Baby Food	10	7	2	16	3	28
Fruits & Vegetables	50	49	45	46	46	80
Palm oil/other oils	77	49	31	93	89	95

Source : National Nutrition Survey 1971. Pg. 331 - 340.

* : Family here refers to adults and children 6 - 11 months old. Similar distribution exist for families of adults plus children 12 - 23 months and families of adults plus children 3 - 5 months.

excepting baby foods and leafy vegetables. Apart from the former North province whose index for tubers is as low as 17%, indices for the rest of the country range from 84 to 95%. Tubers are basically produced in the Southern provinces. Cereals, legumes, and meats appear to be available in all the provinces. Their indices of availability are over 60%. Fruits and vegetables are in short supply everywhere excepting the two big cities. Their indices range from 46 to 50%. Palm oil and other oils are available everywhere although the North and the East provinces appear to have relatively little access to them. Their indices are 31 and 49% respectively as oppose to the other provinces whose indices range from 77 to 95%. When the quality of food is considered, it is necessary to consider the daily requirement in form of energy, protein, minerals and vitamins in order to compare with actual intake. These requirements are presented in Table 4. The daily requirement per inhabitant of Cameroon is estimated to be 2455 kcal /18/. Energy intake has been estimated at 2217 kcal/day/inhabitant. This value is slightly more than the minimum security threshold of 2200 kcal per day.

The recommended and estimated actual contribution of various dietary nutrients to the total daily calorific intake is as follows /18/:

	<u>Recommended</u>	<u>Actual</u>
Carbohydrates	50 - 55%	67%
Lipids	30 - 35%	24%
Protein	12%	9%

Table 4 : Cameroon's Average Needs in Calories and other
Nutrients

<u>Nutrient</u>	<u>1984</u>	<u>1986</u>	<u>1991</u>
Energy in kcals/per/day	2455	2443	2446
Protein security needs in g/per/day	40	40	40
Calcium in mg/per/day (min)	475	474	473
(max)	504	503	501
Iron in mg/per/day	15.6	NA	NA

Source : CDDF, in Long Term Food Plan. Pg. 27.

From the above data the diet of the average Cameroonian is rich in carbohydrates but deficient in lipids and protein. The significant contribution of cereals, roots, tubers and plantain to the diet of Cameroonians account for the relatively high carbohydrate intake.

The security protein threshold for Cameroon had also been estimated at 40.1g per inhabitant per day. Meanwhile, actual protein intake has been estimated at 50.7g/day which is much higher than the minimum security limit of 40.1g. Animal protein is reported to represent 12g/day of the total daily intake [18].

In terms of meat intake, Cameroon's per capita needs have been estimated at 15.39kg per year [22]. However estimates of Cameroon's meat requirements based on the per capita estimates may be erroneous granted that a normal human being of 70kg requires about 56g of protein per

day (IHS, 1974) . Fifty per cent of this amount (28gm) should be animal protein while the rest is derived from plant sources. But 20gm per day corresponds to 51kg of fresh meat per year and not 15.39 kg as estimated above. The quantity of animal protein consumed is inferior to the security threshold in that only 70% of the recommended value of (17g/day) is satisfied. The relatively high cost of protein foods when compared to the bulky starchy foods make them less accessible to the ordinary consumer. In addition, taboos and social interdiction which do not permit an important part of the society to eat certain protein rich foods significantly lower the country's average protein in-take

Table 5 : Percentage of Children Under 5 years with Chronic Undernutrition (1973)

<u>Province</u>	<u>% of Children with Chronic Undernutrition</u>
Central South*	16.2
East	25.7
North	21.1
North West	24.2
West	31.2
South West	20.1
Littoral*	24.0
Yaounde/Douala	18.2
Urban Cameroon*	19.4
Rural Cameroon	<u>22.4</u>
Total Cameroon	<u>21.0</u>

* : Excludes Yaounde and Douala

Source: National Nutrition Survey. Pg. 37

foods contribute significantly to lower overall average daily protein intake in the country.

Consumption of lipids is estimated to be 58.4g/day/-inhabitant and the major sources are as follows :

- cooking fats and oils (52%)
- vegetable sources (34%)
- animal sources - meat, milk and eggs (14%)

Lipid consumption is generally low when compared to the recommended intake of 80g/per/day [18].

Calcium consumption per day is evaluated at 508mg/-inhabitant which is higher than 495mg recommended. The adequate intake of calcium is attributed to the relatively high consumption of legumes, roots, tubers, and fruits in the Southern provinces and of milk in the Northern provinces. These food products are rich in that element.

According to the 1978 National Nutrition Survey [24], 22.1% of children below 5 years suffered from chronic protein-calorific malnutrition. It will be recalled that based on the 1976 census of Cameroon, 16% of the total population is under 5 years. This represents about 250,000 children who are chronically under-nourished. From Table 5, chronic under nutrition of children below five years was widespread in all the provinces of the country. However, the evidence of malnutrition in the above age group of children was higher in rural areas (22.4%) than urban centres (19.4%). For example, whereas the West province topped the list with 31.2% cases of chronic undernutrition, urban centres like Douala and Yaounde had 11.8%. The better nutritional status of children in the urban centres may be attributed to the high concentration of

Table 5 : Percentage of Children Under 5 years with Chronic Undernutrition (1978)

<u>Province</u>	<u>% of Children with Chronic Undernutrition</u>
Central South*	18.8
East	26.7
North	21.1
North West	24.2
West	31.2
South West	20.1
Littoral*	24.0
Yaounde/Douala	11.8
Urban Cameroon*	19.4
Rural Cameroon	22.4
Total Cameroon	21.0

*: Excludes Yaounde and Douala

Source: National Nutrition Survey. Pg. 87

income groups with high effective demand for more nourishing items. The higher economic strength of the population of urban centres attracts the steady supply of both imported and locally produced high quality foodstuffs making them available in higher quantities than in rural areas.

Iron consumption was about 36mg/day/inhabitant as opposed to the requirement of 15.6mg/day/inhabitant. On this basis, iron intake was satisfactory. However, the National Nutrition Survey of 1978 also showed that 38.1% of children below 5 years were anaemic (Table 6). Curiously, cereals which are consumed in large quantities in the country are fairly rich in iron.

Malaria and sickle cell diseases may contribute to anaemic condition. Table 6 shows the prevalence of anaemia in children below five years in Cameroon. The evidence of anaemia is quite high in the Central South and East provinces where 53.3 and 57.6% of the children were shown to suffer from anaemia whereas the proportion was 23.1% in the North West and West provinces. For the Littoral and South West provinces the rate was 38.9%. The overall average for the country was 38.1%. Curiously, the cities of Douala and Yaounde had a 42.8% prevalence of anaemia.

Possible reasons for the observed high incidence of anaemia in Yaounde and Douala when compared to the low prevalence in the North West and West provinces are :

- the higher endemicity of malaria in these urban centres when compared to the Western High Plateau where population of malaria carrying mosquitoes is relatively low; and
- higher content of dietary iron in food available in the West and North West when compared to other regions.

Iodine deficiency which results in goitre, is highly prevalent in the East province (16.8% in mothers).

Table 6 : Prevalence of Anaemia in Cameroon by Province (1978)

Province	% of Children Aged 6 - 59 month with Anaemia
Central South*	53.3
East	57.6
North West/West	23.1
South West/Littoral*	38.9
Yaounde/Douala	42.8

* Excluding Yaounde and Douala

Source : National Nutrition Survey. pg. 107

Its incidence was 5.6 and 3.4% in the North and North West provinces respectively and 3.1% in the Central South province. All these provinces are relatively far away from the sea, the source of sea fish - a major source of iodine. Seasonal deficiencies in vitamin A and C are reported in the North province, while in the Centre, South and East provinces Vitamin B₂ and Vitamin B₁₂ deficiency is also indicated. Iron deficiency may be overcome by increased consumption of legumes and animal products (milk and meat). Adequate intake of animal products will prevent vitamin B₁₂ deficiency.

Cereal diets are rich in vitamin B₂ while regular intake of fresh fruits and vegetables will insure adequate intake of vitamins A and C. Palm oil is an important source of vitamin A. On the whole, there are shortages in the supply of these food items in some geographical regions of the country. The deficiencies can only be avoided through increase production, efficient distribution system, and adequate processing and storage for use during off-seasons, of the appropriate food items.

Given that (i) the per capita consumption for cereals has tended to increase over the years as opposed to that of starchy foods which has tended to decrease (section 3), (ii) road infrastructure has improved in the country since 1978, thus improving the food distribution situation, and (iii) that the imported volumes of meat/fish and their products have been increasing as well as the domestic production of livestock (section 3), it could be

concluded that the nutritional situation in Cameroon has generally improved since 1978, even though some parts of the country in recent years have actually suffered from acute food shortages due to hostile climatic conditions. However, a more detailed analysis of the data furnished by the consumer budget study is necessary to provide a clearer picture of the current situation.

3.3: Analysis of Consumption and Production Patterns

3.3.1. Consumption and Production Trends for Major Food Crops

Consumption patterns in the rural areas tend to follow production patterns; In most cases over 50% of the total production is home consumed, while the rest is channelled to urban centres for marketing. Table 7 summarizes the consumption distribution of major foodstuffs to the principal urban and rural centres. It shows the tonnage marketed and/or consumed in the urban and rural centres as well as the quantities consumed by the household. Estimates of the 1985 average per capita consumption of each foodstuff have been obtained by dividing the estimated total consumption by the total population. Plantains, cassava, maize, and millet/sorghum are the most heavily consumed foodstuffs on per capita basis. Their per capita consumption figures are respectively 89.17, 81.71, 46.98 and 34.22kg. Beans, Irish potatoes and yams are the least consumed, their per capita consumption figures being 7.66, 8.68 and 8.78kg respectively.

Table 7 : Consumption of Major Foodstuffs by Urban and Rural Centres (1955)

Location	QUANTITIES MARKETED AND/OR CONSUMED IN TONS												
	Millet & Sorghum	Maize	Rice	Wheat	Plantains	Cassava	Sweet Potatoes	Yams	Coco-yams	G.Nuts	Beans/Peas	Palm oil	Irish Potatoes
Yaounde	-	10500	9200	-	32000	20000	2500	1400	25800	9800	4700	-	5700
Other Towns in Centre South	-	-	3900	-	26000	11900	5500	3900	10700	4700	2500	-	4300
Eastern Towns	-	-	1500	-	10600	4600	2200	1500	4400	1900	1000	-	1700
Douala	-	34500	21400	-	44500	25000	11600	8000	34500	12400	7500	-	14200
Mbongmba	-	5500	1500	-	9500	4700	-	-	3900	1700	500	-	1600
Other Litt. Towns	-	-	3500	-	20300	10200	7000	5000	9500	4200	2100	-	3800
Garoua	10000	-	500	-	500	5300	-	-	-	1500	1400	-	-
Naroua	16000	-	700	-	700	4700	-	-	-	-	1200	-	2300
Yaounde	9500	3600	-	-	400	700	-	-	3500	7500	3700	-	-
Other N. Towns	-	-	3500	-	1700	11500	4500	600	-	-	-	-	-
Berenda	-	4500	1100	-	7700	3100	-	-	3200	1400	1700	-	1300
Other N.W. Towns	-	-	2100	-	11000	4500	7500	2000	4500	2000	-	-	-
Bafoussam	-	5400	1300	-	10000	2700	-	-	-	1500	1000	-	1800
Other West Towns	-	-	2000	-	25000	11000	-	5500	4400	4500	2200	-	1800
Kumba	-	4100	-	-	7000	3700	-	-	10400	-	-	-	4100
Other S.W. Towns	-	-	-	-	20000	2000	5000	5700	2300	-	2500	-	4500
Other Towns and Rural Areas	44500	72000	-	-	-	-	-	-	-	-	-	-	-
Total Marketed in Towns	65000	115000	57100	73690	221600	131900	30400	35500	126300	50700	32000	25000	47100
Total Marketed in rural markets	20000	35000	14900	44310	134000	24700	78000	10000	175900	35000	5000	5000	75900
Total Self consumption	250000	310000	28000	-	456600	500000	34800	40500	97900	36300	37000	55000	33400
Total Consumption	335000	450000	100000	120000	373000	100000	100000	36000	300000	130000	75000	105000	25000
Consumption per person	34.22	46.93	10.21	12.26	39.17	31.71	13.38	3.72	30.64	13.22	7.55	10.72	3.68

Source : Etude de Commercialisation de produits vivriers BP 15 - 20

The consumption trends of the major foodstuffs as identified by the 1986 National Food Marketing Study /5/ and by the 1986 National Long Term Food Plan /18/ are discussed below with the aid of the statistics provided in Tables 7 to 9. The 1981 Long Term Food Plan for Cameroon /19/ gave indications of the nature of consumption in urban and rural areas for each group of foodstuffs. These were projected to the year 2000 as shown in Table 8. The resulting per capita consumption estimates for the Cameroon population compare very closely with the estimates in Table 7. The production/consumption situation for each of the major food groups in 1985 are also discussed below. The per capita consumption figures used are presented in Table 9.

1) Cereals

The quantity of cereals consumed in Cameroon is next to that of starchy foods. Total consumption amounted to 1,015,000 tons in 1985 which gives a per capita annual consumption of 103.7kg. This is projected to about 126kg by the year 2000 (estimates from Table 8).

Millet and Sorghum

The production and consumption of these products is almost entirely located in the three Northern provinces. About 250,000 tons (74%) of the total production are home consumed while 65,000 and 20,000 tons are sold in urban and rural markets respectively. The average per capita consumption is 34.22 kilograms, which ranks it fourth among the heavily consumed foodstuffs in the country /7/. Projections by the 1981 Long Term Food Plan report indicate that

Table 8 : Projections of Total and per Capita Food Consumption by Urban* and Rural* Population

Foodstuff	Total Consumption (ton**)			Consumption per Person (Kg***)			
	Year	Urban	Rural	Total	Urban	Rural	Total
Maize	1980	48000	336000	386000			43.37
	1985	72000	382000	454000	21.42	59.42	46.37
	2000	175000	1515000	1690000			41.52
Rice	1980	20000	32000	52000			5.84
	1985	33000	54000	87000	2.82	8.40	8.89
	2000	98000	116000	214000			12.91
Wheat	1980	2000	56000	58000			9.43
	1985	44000	74000	118000	13.09	11.51	12.05
	2000	110000	120000	230000			14.30
Millet & Sorghum	1980	1000	34000	35000			39.21
	1985	1000	354000	355000	0.30	55.06	36.26
	2000	5000	395000	400000			24.13
Starchy foods (Plantains, Yams, Cassava, cocoyams, Sweet potatoes, Irish potatoes, Banana)	1980	12800000	18400000	31200000			238.20
	1985	17000000	12200000	29200000	110.07	283.09	222.68
	2000	16600000	14180000	30780000			153.82
Legumes (G. Nuts, beans, peas, soja)	1980	37000	230000	267000			30.00
	1985	57000	271000	328000	16.96	42.15	33.50
	2000	138000	397000	535000			32.27
Fruits and Vegetables	1980	26000	204000	230000			26.96
	1985	54000	236000	290000	16.06	36.71	29.62
	2000	137000	333000	470000			28.35
Sugar	1980	10000	28000	38000			4.26
	1985	12000	37000	49000	5.35	5.76	5.62
	2000	45000	65000	110000			6.63
Fats & oils	1980	17000	91000	108000			12.13
	1985	26000	108000	134000	7.73	16.90	13.67
	2000	60000	150000	210000			13.21
1985 Total Population				13,361,530	16,422,070	29,790,600	

**Urban* is represented by Yaounde and Douala Cities

Source : ** 1981 Long Term Food Plan

*** Calculated by dividing the 1985 total consumption projection by the 1985 projected urban, rural and total population while dividing consumption figures for 1980 and the year 2000 by the respective population figures of about 8,900,000 and 16,600,000 / 18 /.

Table 9 : Estimated and projected per Capita Consumption
of various Food products in Cameroon

Commodity	1985 per capita Consumption (kg/person/Year)	1985 per capita consumption (kg/person/Year)	1985 per capita consumption (kg/person/Year)	projected per capita consumption in Year 2000 (kg/person/Year)
<u>Cereals</u>	-	-	-	-
Millet sorghum	39.21	34.22	36.26	24.13
Maize	49.37	46.98	46.37	41.62
Rice	5.84	10.21	8.89	
Wheat	9.43	12.05	12.05	14.30
<u>Starchy Foods</u>	238.20	-	183.68	153.82
Plantains	-	89.17	-	-
Irish potatoes	-	8.68	-	-
Cassava	-	81.71	-	-
Sweet potatoes	-	18.38	-	-
Yams	-	8.78	-	-
Cocoyams	-	30.64	-	-
<u>Legumes</u>	30.00		33.50	32.27
G.Nuts	-	13.28	-	-
Beans	-	7.66	-	-
<u>Fats and oils</u>	12.13	-	13.67	13.21
Palm oil	-	10.72	-	-
<u>Fruits and</u>				
<u>Vegetable</u>	26.86	-	29.62	28.96
<u>Sugar</u>	4.26	-	5.62	6.63

Source : Derived from Tables 2 and 3

consumption will shift from 349,000 tons in 1980 to 400,000 tons in the year 2000. Per capita consumption using these projections dropped from 39.21kg in 1980 to 36.26 and 24.13kg in 1985 and year 2000 respectively.

Maize

About 52% of the total supply of maize comes from the three Northern provinces even though consumption is largely in the Southern provinces and mostly in urban centres. The other prominent production centres are the West and the North West provinces. Over 460,000 tons of the total production (about 65%) is home-consumed and the annual per capita consumption is 46.9kg, which ranks third among the heavily consumed foodstuffs $\angle 7 _ /$. About 115,000 and 35,000 tons are sold in the urban and rural markets respectively. It has been projected that total consumption will rise from 386,000 tons in 1980 to 690,000 tons in the year 2000 $\angle 19 _ /$. Per capita consumption of 43.37kg in 1980 therefore was expected to increase to 46.37kg in 1985 but would drop to 41.52kg in the year 2000.

Rice

Rice is produced mainly by three parastatal organisations in the North, North West and West provinces, in quantities that fall far short of the demand. Resort is therefore made to heavy importations to meet the high demand. The product is consumed in all parts of the country and the total consumption is about 100,000 tons.

More than 57,000 and about 15,000 tons are sold in urban and rural markets respectively, while about 28% is home-consumed 7/. Projections show that the total consumption will increase from 52,000 tons in 1980 to about 214,000 tons by the year 2000 19/, which raises the per capita consumption from 5.84 to 12.91kg.

Wheat

A very insignificant quantity of wheat is produced in Cameroon even though up to about 120,000 tons is consumed in the country. Practically almost all of the supply is imported. About 75,690 tons of the total consumption goes to the urban centres while 44,310 tons are consumed by the rural population. The 1985 per capita consumption was 12.05kg. The total consumption is expected to increase from 84,000 tons in 1985 to 237,000 tons in the year 2000 19/, bringing the per capita consumption to from 9.43kg in 1980 to 14.30kg in year 2000.

2) Starchy Foods

The total annual per capita consumption of starchy foods in Cameroon is as high as 223.68kgs. The rural areas consume up to 283.09kgs per person while the urban per capita consumption is 110.07kg. Projections indicate that the total consumption will increase from 2,120,000 tons in 1980 to 2,550,000 tons in the year 2000 19/. This increase does not match the projected population increase since the per capita consumption will drop from 238.20kg in 1980 to 153.82 in year 2000.

Plantains

Plantains are consumed in all parts of the country, Consumption is however more concentrated in the Southern provinces where the bulk of the production is done and to a much lesser extent in the three Northern provinces. A total of about 873,000 tons are consumed. About 52% of the total production is home-consumed while 416,000 tons is channelled away from the producing centres to other consuming centres for marketing $\angle 7 \angle$. On per capita basis, the product is the most heavily consumed item in the country - about 89.17kgs per person per year.

Cassava

Like plantains, cassava is consumed in all parts of Cameroon. Three provinces dominate its production - the Centre province which produces 27%, the South 22% and the East 14% of the country's production. Of the total quantity produced, about 135,300 tons are sold in the urban markets, 84,700 in rural markets, while 580,000 tons are consumed by the producers. The total consumption stands at 800,000 tons. It thus ranks second on the list of heavily consumed foodstuffs, and the annual average per capita consumption is 81.71 $\angle 7 \angle$.

Sweet Potatoes

A total of about 200,000 tons are produced in Cameroon and principally in the Southern provinces. Only 180,000 tons of this total production are actually consumed all over the country. The rest are lost after harvest. Very little (4,300 tons) are consumed in the

Northern provinces. The bulk of it is consumed where produced. Hence about 64,800 tons are consumed by the producers while the remainder is sold mostly in the urban centres of the Southern provinces. The annual per capita consumption is estimated at 18.38kg [7_].

Yams

The production is dominant in the West, North West and Centre provinces. About 110,000 tons are produced, of which 36,000 tons are consumed in all parts of the country although to a very small extent in the three Northern provinces where less than 1,000 tons are consumed. About 40,500 tons are consumed by the producers while the bulk of the remainder is marketed in the major towns of the Southern provinces. The annual per capita consumption is 8.78kg, which ranks among the last three on the country's consumption list.

Cocoyams and Taro

These are consumed in all part of the country although very little is produced in the North, Extreme North and Adamawa provinces. About 26% is produced in the South West, while 21% is produced in the North West province.

A total of about 300,000 tons are nationally consumed of which 126,000 tons are consumed in the urban centres while 97,900 tons are consumed by the producers. The national annual per capita consumption is 30.64kg, and it ranks fifth on the nation's consumption list [7_].

Irish Potatoes

The production of this crop is concentrated in the North West and West provinces. A total of over 85,000 tons is produced on national basis. While 33,400 tons are consumed by the producers themselves, 47,100 tons are sold in urban and rural markets respectively.

3. Legumes

The total consumption of all legumes including peas and soja beans was about 271,000 tons in 1985, representing an annual per capita consumption of 33.5kg. Projections indicate that consumption will increase to about 323,000 tons by the year 2000 [13]. But with this increase, the per capita consumption which had risen from 30.0kg in 1980 to 33.5kg in 1985 is expected to drop to 32.27 by year 2000.

Groundnuts

These are produced in almost all parts of the country and especially in the North, South West, West, North West and Centre provinces which produce 24, 22, 18, and 16% respectively. About 130,000 tons are consumed annually. Almost 50% of this is consumed in urban areas while about 36,300 tons are consumed by the producers. The per capita annual consumption is however only 13.28kg [7].

Beans

Like groundnuts, beans are produced in all provinces of Cameroon although the East, the Centre and South provinces produce very little. About 50% of the total

production is home-consumed while 75,000 tons are consumed in the whole country. The annual per capita consumption of 7.66kgs is the lowest among the major foodstuffs covered by this study [7].

4. Fats and Oils

Palm oil consumption amounts to about 105,000 tons in the North West, South West and Centre provinces which produce 24, 20, and 29% respectively. About 55,000 tons of the total artisanal production is consumed by the producers. Their production is estimated at about 69,000 tons while the remainder - 36,000 tons are produced by public companies. The annual per capita consumption is about 10.72kg [7]. While in 1985, the per capita consumption of all fats and oils amounted to only 13.67kg from a total consumption of 108,000 tons in 1985. It is also estimated that consumption will increase to 134,000 tons by the year 2000 [19] while per capita consumption will drop from 13.67 in 1985 to 13.21 in year 2000.

5. Fruits and Vegetables

The consumption of this class of food amounted to about 240,000 tons in 1980 and it has been projected that this will increase to 470,000 tons by the year 2000. The 1985 per capita consumption was 29.63kgs [19] and it is expected to drop to 28.35kg by the year 2000.

It can be observed that quantity-wise, per capita consumption is higher in the rural areas for most of the foodstuffs than in the urban centres. The same may not be true quality-wise since as earlier pointed out,

under nutrition is more evident in rural areas. The summary of production distribution of foods groups by province as at 1984 is presented in Table 10. From the table, the total production by weight, of food crop products is dominated by the South West, Centre, North West and West provinces which produce 792,060, 761,080, 707,200, and 605,900 tons respectively. The least contributors to total production by weight are the North, Adamawa, Extreme North, South, Littoral and East provinces which produce 73,530, 148,790, 203,620, 226,320, 239, 030, and 429,780 tons respectively. The North West, Extreme North, West, Adamawa and North provinces in that order, are shown to be the major producers of cereals. The Centre, South West, North West, East, West, South and Littoral provinces in that order, dominate the production of starchy foods. Most of the legumes are produced by the North West, West, Extreme North, North and Centre provinces, while the production of "other products" is dominated by the South West, West, North West and Centre provinces.

3.3.2 : Production and Consumption of Livestock and Livestock products

Livestock population

In 1986/87 it was estimated that Cameroon had the following livestock population :

Cattle	4,361,500
Sheep	2,358,100
Goats	2,917,500
Pigs	800,000
Poultry	14,000,000



Table 10 : Estimated Production of Major Food Groups by Province in 1984

Food Group	PRODUCTION IN 1000 TONS										
	Adamawa	Centre	East	Extr.North	Littoral	North	N.W.	West	South	S.W.	Total
Cereals	55.60	15.44	26.42	177.30	6.90	55.71	190.36	112.76	3.81	11.21	666.01
Starchy Foods*	79.70	611.11	351.54	0.00	180.90	0.00	353.90	303.32	194.14	609.33	2688.84
Legumes	3.49	18.53	9.32	25.32	5.13	22.82	34.24	23.02	5.57	2.52	157.06
Other products*	0.00	116.00	42.50	0.00	46.10	0.00	128.30	155.80	21.70	19.00	630.40
Total foodstuffs	148.79	761.08	429.78	203.62	239.03	78.53	707.20	605.90	226.32	792.06	4192.31

* - Starchy Foods include : Plantains, cassava, sweet potatoes, yams, cocoyams and taro, and Irish potatoes.

- Other Products include : Banana, fruits, vegetables, fats and oils.

Source : Etude de Commercialisation des Produits Vivrier : Analyse Macro Economique - 1986
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Tables 11 and 12 show the distribution and proportions of various livestock species in the different provinces of the country. The major cattle producing provinces are the Extreme North, North, Adamawa and North West provinces which account for 23.07, 14.93, 36.40 and 13.02% respectively, of the total national herd. All four provinces account for 87% of the cattle population in the country.

Sheep production is concentrated in the Extreme North (47.47%), North (10.31%), East (10.6%), North West (9.51%) and West (7.71%) provinces, which together produce 85.6% of the sheep in the country.

The majority of the goats are produced in the Extreme North (42.89%), West (19.84%), East (9.16%) and North (8.77%) provinces. These provinces produce 80.7% of the goats in Cameroon.

Before 1982, the pig population was estimated at be about 1.4 million. The African Swine fever epidemic of 1982 resulted in a lot of mortality, reducing the total population of pigs drastically. The 1986/87 estimate of 200,000 results from current effort to reinstate and improve pig production. The majority of pigs are produced in the West (26.25%), North West (23.75%), Littoral (12.50%) and South West (11.25%). These four provinces account for 73.8% of the total population of pigs in the country.

Of the 14 million poultry estimated in 1986/87, 38.93, 15.30, 15.12 and 9.52% were produced in the Centre, North West, Littoral and Extreme North provinces respectively. These provinces accounted for about 79%

Table 11 : Estimates of Livestock Population - 1986/87

Province	Cattle	Sheep	Goats	Pigs	Poultry
Extreme North	1,005,000	1,119,500	1,251,400	35,000	1,533,000
North	551,000	543,100	255,900	12,000	534,000
Adamaoua	1,527,500	139,000	34,900	2,000	134,000
East	275,500	250,000	267,200	60,000	470,000
North West	557,900	224,200	115,200	190,000	2,142,000
West	209,400	151,000	575,800	210,000	912,000
South West	11,500	30,000	53,200	90,000	275,000
South	500	102,000	171,300	25,000	269,000
Littoral	4,200	4,200	2,800	100,000	2,110,000
Centre	48,700	54,300	135,800	70,000	5,745,000
T O T A L	14,361,500	12,353,100	12,917,500	500,000	14,000,000

Source : 3^{ème} Projet Elevage. Rapport de Preparation

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Table 12 : Percentage of Livestock Produced Per Province

Province	Cattle	Sheep	Goats	Pigs	Poultry
Extreme North	23.07	87.47	48.59	4.38	9.52
North	14.95	10.31	0.77	2.25	3.31
Adamawa	35.40	5.99	4.91	0.25	1.39
East	6.34	10.50	9.15	7.50	3.41
North West	19.02	9.51	2.95	23.75	15.30
West	4.00	7.71	19.04	26.25	6.51
South West	0.27	1.27	1.02	11.25	1.96
South	0.01	4.33	5.07	3.13	1.92
Littoral	0.11	0.18	0.10	12.50	15.12
Centre	1.05	2.73	4.55	8.75	38.93
T O T A L	100	100	100	100	100

Source : Figures calculated from Table 11.

of the total population of poultry in Cameroon.

3.3.3 : Meat Production

Estimates of meat production from domestic livestock in Cameroon are presented in Table 13. From a total of 105,052 tons produced in 1986/87 the contributions of the various species were as follows:

Cattle	61.3%
Poultry	13.3%
Pigs	10.6%
Shoep	7.4%
Goats	7.3%

Ruminants accounted for 76% of total meat production in the country while the monogastric species produced 24%. An analysis of meat production by the various provinces of the country reveals that most of the meat produced originates from the Adamawa (25.01%), Extreme North North (21.32%), and North West (16.15%) provinces. The three provinces account for about 62.5% of the total meat produced in the country. Considerable quantities of meat are also produced in the West (8.67%), North (7.50%) and Centre (7.85%) provinces. The other provinces are minor producers with meat production ranging from 1.44 to 3.98% of the total production of the country.

Table 14 presents an analysis of consumption/production of meat in Cameroon in 1986/87. The meat requirements for different provinces are based on the following requirements per individual as prescribed in

Table 13 : Total Meat Production in Cameroon (1985/87) by Province and Species (tons)

Province	Beef	Mutton	Goat Meat	Pork	Chicken	Total	%
Extreme North	113,408	4,378	2,931	346	1,333	22,396	21.32
North	5,492	727	780	344	534	7,877	7.50
Adamawa	22,360	375	303	38	194	26,270	25.01
East	3,795	465	608	1,798	478	7,144	3.94
North West	11,640	118	322	2,142	2,142	16,967	16.15
West	3,991	628	1,629	1,862	912	9,111	8.67
Sub-Total	163,686	7,261	6,578	6,510	5,593	89,766	!
South West	93	73	153	923	275	1,517	1.44
South	6	25	424	395	269	345	1.26
Littoral	55	12	9	1,983	2,118	4,176	3.98
Centre	514	192	432	365	5,745	8,248	7.85
Sub-Total	668	528	1,017	4,666	8,407	15,286	!
T O T A L	64,354	7,818	7,695	11,184	14,000	105,052	!
%	61.3	7.4	7.3	10.6	13.3	!	100

Source : 3ème Projet Elevage, Rapport de Preparation Tome I Pg. 15.

Table 14 : Consumption/production of Meat in Cameroon 1986/87

Province	Population	Total Requirements (tons)	production (tons)	Balance (tons)
Extreme North	1 1 727 500	1 26 586	1 2239	1 4 190
North	1 607 500	1 9 549	1 7 877	1 1 472
Adamawa	1 422 500	1 6 502	1 26 270	1+ 49 768
East	1 475 500	1 7 324	1 7 144	1- 180
North West	1 1 221 500	1 18 729	1 16 967	1 -1 831
West	1 1 330 300	1 20 473	1 9 111	1 -11 362
Sub-Total	1 5 785 200	1 89 034	1 69 766	1 + 73
South-West	1 824 700	1 12 392	1 1 517	1 -11 175
South	1 406 600	1 6 253	1 1 345	1 - 4 913
Littoral	1 1 677 600	1 25 318	1 4 176	1 - 21 642
Centre	1 1 752 300	1 26 969	1 8 248	1 - 18 729
Sub-Total	1 4 661 200	1 71 736	1 15 052	1 -56 500
TOTAL	1 10 446 400	1 160 770	1 105 052	1 - 55 718

Source : 3ème projet Lovego, Rapport de production, Tome I Pg. 19

the 6th Five Year Development Plan of Cameroon 1986 - 1991).

- Beef, 10.05kg per year per inhabitant
- Goat and Sheep meat, 2.03kg per year per inhabitant
- Pork, 1.98kg per year per inhabitant
- Poultry meat, 1.33kg per year per inhabitant.

On this basis, the country produced 105,052 tons of meat while the total requirement was 160,770 tons. Thus the overall meat deficit was 55,718 tons. Only Adamawa province had a meat surplus (19,768 tons). All the other provinces had meat deficits. The biggest deficits were in Littoral (21,642 tons), South West (11,175 tons) and West (11,362 tons) provinces. An overall assessment of consumption and production in major meat producing provinces (Extreme North, North, Adamawa, East, North West and West) shows that there is a positive balance of 731.7 tons. On the other hand, the deficits of the Southern provinces (South West, South, Littoral and Centre) are enormous and they represent an annual deficit of about 12.1kg per person. On per capita basis therefore, the South West province tops the deficit list with 13.55kg, followed in descending order by Littoral (12.9kg), South (12.1kg) and Centre (10.7kg).

Table 15 presents projections of meat deficits in Cameroon until 2001 A.D. 13 based on requirements of an average inhabitant of 70kg as prescribed by the National Research Council (NRC) of USA 1974. These deficits will decline if present growth rates for domestic animals, wild animals and fish production as maintained.

Table 15 : Estimates of Meat Deficit and Other Animal Protein Sources (in Meat Equivalent) for Cameroon until 2001 A.D.

Year	Estimated Population	Total Domestic Meat Production (tons)	Required Production (tons)	Deficit (tons)
1985/86	9 783 000	340 742	498 933	158 191
1990/91	11 068 566	412 415	564 497	152 082
1995/96	12 523 067	506 558	658 670	152 118
2000/2001	14 168 700	619 031	722 604	103 373

Source : Rentrée Solennelle 1984/85 Pg. 17.

- NB: - Annual growth rate of human population is assumed to be 2.5%.
- Annual growth rate of cattle population is assumed to be 2.5%, exploitation rate is 10% per year, and a cow yields 175kg meat and offals represent 25% of carcass weight.
 - 5kg of milk are equivalent to 1kg of meat.
 - Annual growth rate of small ruminants population used is 5%, exploitation rate is 30%, and meat production per animal is 10kg per carcass plus offals that represent 15% of carcass weight.
 - Annual growth rate of 4% for pigs population, exploitation rate of 40% per annum yielding 70kg and 4% of carcass weight being offals.
 - Annual growth rate for poultry population of 6%, exploitation rate of 100%, and each fowl offers 1kg meat.
 - Annual growth of fish production is 5%.

Although the NCR standards may not be applicable to Africa, for comparative purposes, it could be seen that

the meat deficit estimates based on its recommendation for an adult human being (51kg/year) are over three times the value postulated by present consumption of 15.39kg of meat per year. The present estimate of meat deficit is 55,718 tons whereas it should be 158,000 tons, if the nutritional requirements of Cameroonians is considered in terms of recommended animal protein intake.

Meanwhile the contribution of animal protein from various sources in 1985/86 was estimated as follows :

Cattle	106,672 tons
Sheep & goats	22,718 tons
Pigs	28,979 tons
Poultry	11,589 tons
Fish (in meat equivalent)	124,874 tons
Wildlife	26,636 tons
Dairy products (in meat equivalent)	10,527 tons
Others	8,747 tons

From the above figures the contribution of fish to the total animal intake is of paramount importance and justifies the discussion that follows on fish.

Fish Production and Consumption

Fish is an important source of animal protein in Cameroon. The quantities consumed come from four sources :

- Industrial maritime fishing which supplied 16.27% of the total consumption in 1984/85,
- Artisanal maritime fishing which supplied 23.68%,
- Inland fishing which supplied 7.17% and
- Importation from foreign countries which supplied 52.87%.

Table 16 shows the importation and domestic production of fish in Cameroon between 1981/82 and 1984/85. Total fish consumption in Cameroon has been increasing. Between 1981/85 it increased from 59,500 tons to 73,753 tons.

A detail analysis of the data showed that domestic industrial maritime fishing has been decreasing. Between 1981/82 and 1984/85 it dropped from 23,181 to 12,003 tons. Artisanal maritime fishing continues to contribute larger amounts of fish to the total national consumption. Production has risen from 4,050 tons in 1981/82 to 17,464 tons in 1984/85. Figures for inland fishing are generally difficult to obtain. The values indicated on the table tend to be grossly underestimated. However, between 1981/82 and 1982/83, inland fishing production increased almost 3-fold.

Fish importation has been on the increase. Between 1981/82 and 1983/84, it increased from 28,050 to 40,215 tons but in 1984/85 the tonnage decreased to 38,996 although it still accounted for 52.87% of the total consumption.

Table 16 : Importation of Fish into Cameroon (tons)

Country of Origin	1983/84		1984/85	
	Quantity	%	Quantity	%
Senegal	117,880.0	130.08	117,455.0	98.7
Namibia	1,187.0	1.308	3,200.0	7.00
Mauritania	4,500.8	111.40	8,247.8	18.04
Holland	3,243.1	3.22	3,050.0	6.67
Uruguay	3,037.3	7.5911	3,082.3	6.74
Spain	304.0	2.04	2,110.4	4.62
USSR	111,091.6	123.08	5,125.0	11.21
Cuba	-	-	921.0	2.01
Japan	-	-	750.0	1.64
Angola	500.0	1.52	1,000.0	2.19
Gabon	198.411	0.50	45.611	0.10
Sweden	1,475.0	3.73	-	-
Argentina	1,475.0	3.73	730.3	1.61
T O T A L	139,497.2	100.0	145,726.7	100.00

Source : 1984/85 Annual Report, ICHIEPA, Yaounde [26]

Inland and artisanal fishing contributed about 30% of total national production that year.

The decrease in industrial maritime fish production has been attributed to the conversion of some of the fishing boats into catching of shrimps, reduction in fish species being caught, territorial water problems with Gabon and Nigeria, and the inability of the fishing boats to go into new fishing waters further in the sea. Table 17 presents the fish importation situation in Cameroon between 1983/84 and 1984/85. The biggest suppliers of frozen fish were Senegal, USSR and Mauritania, providing 30.08, 28.08 and 11.4% respectively of total fish importation in 1983/84. In 1984/85 the main suppliers of frozen fish to the country were Senegal (38.27%), Mauritania (13.04%) and USSR (11.21%).

Inland fishing is concentrated along the major rivers in the country, inland artificial lakes created by the National Electricity Company at Lagdo, Bamendjing, Mbakoui and Mape, and artificial lakes created for irrigation of rice fields by SEMRY in the North at Maga. Most of the fish is caught using traditional methods and is sold mostly in the dry form.

3.4 : Demand and Supply of Foodstuffs

Cameroon's net internal food supply satisfied 95% of her demand in 1984/85 (6th Five Year Plan). This is after making allowance for post-harvest losses which sometimes rose to as high as 30% of some foodstuff

Table 17 : Production and Importation of Fish in Cameroon (tons)

Type	1981/82		1982/83		1983/84		1984/85	
	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%
Industrial Maritime Fishing	23,181	39.95	20,958	29.95	13,895	21.21	12,003 ^a	16.27
Artisanal Maritime Fishing	4,050	5.21	5,515	2.33	11,392	17.40	17,454	23.62
Inland Fishing	4,219	7.09	12,455	13.56	-	-	5,290	7.17
Importation	23,050	47.14	29,050	43.15	40,215	61.38	38,995	52.37
	59,500	100.0	67,329	100.0	55,510	100	73,753 ^a	100

Source : 1983/84, 1984/85 Annual Report. Ministry of Livestock, Cameroon.

products : Table 18 shows that on food group basis, the country enjoys more than 100% demand satisfaction from only two groups. The satisfaction rates for starchy foods is 116% while that for fruits and vegetables is as high as 130.8%. Sugar and meat/fish have need satisfaction rates of 93.3 and 74.1% respectively while only 65.7, 49.0, and 46.8% of the demand for cereals, vegetable oils and legume groups respectively were met. Where there is excess demand for a food group, it is expected that the gap will be bridged through imports. It can be observed that for food groups that have more than 100% satisfaction, there exist short supply for some of its component products. Such shortages are expected to be met either through importation or through substitution with substitute products.

3.4.1 : Analysis According to Food Groups

Cereals

Cereals are shown to have only a 65.7% consumption satisfaction rate. Their total demand of 1,070,000 tons by far exceeds the 70,300 tons supply. The situation is worse considering that the estimates include the wheat component which is almost all imported. Furthermore, the rice component which is shown to have 111.3% satisfaction rate is also known to have a significant fraction supplied through importation. Only maize and sorghum/millet have sizable home production to back up their supply. About 348,000 of the 460,000 tons of maize demanded are supplied from home production, while 176,000 of 336,000 tons of millet/

Table 10 : Supply and Demand of Food Products in 1954/1955
(in thousands of tonnes)

Food Products	Production	% Losses	Balance of Inter- national trade	Net Supply	Demand	Food Satis- faction rate (%)
<u>1. Cereals</u>	<u>399</u>		<u>72</u>	<u>703</u>	<u>1070</u>	<u>65.7</u>
- Millet/Cornum	267	15	-	175	335	52.4
- Maize	440	15	1	349	450	77.6
- Rice	51	10	32	130	184	111.3
- Wheat & Flour	-	-	40	40	150	70.0
<u>2. Starchy Foods</u>	<u>2752</u>		<u>-</u>	<u>2340</u>	<u>12013</u>	<u>115.0</u>
- Plantains	1001	15	-	796	795	107.0
- Cocoyams and Taro	133	15	-	150	451	35.5
- Cassava	1375	15	-	1169	400	292.0
- Yams	55	15	-	32	150	51.0
- Sweet Potatoes	50	15	-	42	111	38.0
- Irish Potatoes	42	15	-	36	100	35.0
<u>3. Legumes</u>	<u>212</u>		<u>-</u>	<u>182</u>	<u>222</u>	<u>45.3</u>
- Ground nuts	99	15	-	38	107	40.7
- Beans/peas	51	20	-	41	110	34.5
- Ground	50	10	-	45	51	82.2
- Sesame	13	10	-	12	13	92.3
<u>4. Fruit and Vegetables</u>	<u>242</u>		<u>-</u>	<u>705</u>	<u>509</u>	<u>138.3</u>
- Bananas	703	25	-	527	105	233.3
- Other fruits	55	30	-	39	-	-
- Vegetables	185	25	-	139	322	55.4
<u>5. Vegetable oils</u>	<u>22</u>		<u>-11</u>	<u>72</u>	<u>147</u>	<u>49.0</u>
- Palm oil	22	10	-	-	-	-
- Other oils (cotton)	10	10	-	-	-	-
<u>6. Sugar</u>	<u>71</u>		<u>1</u>	<u>70</u>	<u>75</u>	<u>22.3</u>
<u>7. Meat and Fish</u>	<u>225</u>		<u>36</u>	<u>261</u>	<u>352</u>	<u>74.1</u>
- Meat	137	-	7	144	-	-
- Fish in meat equivalent	32	-	29	117	-	-
TOTAL	4729		103	4333	4559	95.0

Source : 5th Five year Plan, Pg. 51.

sorghum demanded is also from home production. Increased production efforts for these two cereal items coupled with efforts to cut down post-harvest losses may help bridge their demand-supply gap. The situation for rice and wheat may depend unfortunately, on importation for quite a long time.

Starchy Foods

Their satisfaction rate of 116.0% is misleading. Most of the constituting foodstuffs of this group have very low satisfaction rates. The rates are 35.5, 51.0, 38.0 and 36.0% for cocoyams/taro, yams, sweet potatoes and Irish potatoes respectively. It is the dominating rate of 292.0% for cassava that inflates the group rate to 116%. From its low demand of only 400,000 tons out of a supply of 1,169,000 tons in the face of shortages of other starchy foodstuffs, it is obvious that cassava is not a very good substitute for yams, sweet potatoes, Irish potatoes, and cocoyams. Its high supply does not appear to satisfactorily solve the starchy food supply shortage problem except that the excess supply could be profitably used for the production of livestock feed.

Legumes

This food group has only a 46.8% satisfaction rate. All members of these group are in short supply, a condition that is worsened by the accompanying high post-harvest losses. The situations for beans and groundnuts are particularly disturbing. Only 41,000 of the 113,000 tons of beans/poas demanded are supplied. This causes

concern especially as beans constitute an important source of iron which already poses health problems (anaemia) in many parts of the country. Also, only 84,000 of the 207,000 tons of groundnuts demanded are supplied even though Cameroon is ironically known to export this product. This could be possibly explained by the lucrative market that exists for the product in the Northern frontiers of Cameroon.

Fruits and Vegetables

The situation in this food group is not encouraging either, even though it is shown to have a 138.8% satisfaction rate. Again this figure is inflated by that of banana which is as high as 283.3%. Banana is produced in commercial quantities for export purposes in addition to the peasant production for home consumption. Although the demand for "other fruits" is not known, it is certain that it far exceeds the supply. The demand for vegetables is 322,000 tons as opposed to the supply of only 139,000 tons. The relatively high post-harvest losses in this group help to aggravate the situation. They are 25, 30, and 25% for banana, "other fruits", and vegetables respectively. Production, processing and conservation efforts need to be encouraged in this area.

Sugar

The sugar needs are, 93.3% satisfied. The shortage is small enough to be internally handled with slight adjustments in production in the very short-run.

Meat and Fish

Although the estimates give a satisfaction rate of 74.1% for both fish and meat, the separate demand figures and satisfaction rates for the two products are not available. However, 1985/86 estimates by NJWE (1984) /13_/, put the satisfaction rate at 68% for meat. The combined rate of 74.1% for the two products is accounted for by the contribution from fish.

3.4.2: Future Demand and Supply Gaps

1. Food Crops

Despite the expected improvement in production in attempt to meet the projected demands of the growing population, the projections for certain products show persistent gaps between effective demand and supply. Table 19 shows that the supply of maize, rice, wheat, cassava, plantains, sugar, and vegetable oils will fall short of their demand by the year 2000. The negative trends for rice, wheat, plantains and vegetable oils are not only persistent but tend to increase with time. That for "all sugar and honey" is persistent but tends to fluctuate.

The supply shortages for rice, wheat, and plantains are a cause for concern. They will be as high as 409,000, 267,000, and 180,000 tons respectively by the year 2000. The only grain surpluses are from millet and sorghum. These are not high enough to bridge the gap created by rice and wheat. Besides, the consumption of millet and sorghum has been shown to be restricted to the northern provinces. An acute shortage of cereals is thus expected in the futuro. That gap needs

Table 19 : Grand of Projected Gaps between Effective Demand and Supply of Food Crop Products 1990 - 2001

Product	Gaps (1000 tons)					
	1990/91		1995/95		2000/01	
	H ₁	H ₂	H ₁	H ₂	H ₁	H ₂
Maize	57	69	50	52	3	1
Rice	-226	-210	-240	-235	-409	-328
Millet & Sorghum	34	40	22	20	21	91
Wheat & Others	-149	-141	-200	-179	-267	-228
Yams	53	53	54	54	52	52
Cassava	55	53	42	35	14	26
Sweet potatoes	6	0	4	6	0	0
Iris potatoes	77	77	78	79	74	77
Cocoyams & Taro	59	56	49	47	42	39
Plantains	19	5	32	47	-155	-180
Sugar refined	6	0	9	13	17	24
All sugar & honey	-25	10	-53	-37	-100	-72
Dry legumes	12	12	10	12	5	6
Grains	13	19	25	26	29	35
Vegetables	70	75	113	125	142	155
Fruits	245	254	268	298	249	239
Vegetable oils		28		-8		-48

H₁ = High economic growth rate hypothesis

H₂ = Weak economic growth rate hypothesis

* = The gap does not exclude allowance for seeds and post-harvest losses.

Source : Plan Alimentaire a long term Pg. 39.

to be bridged. The supply surpluses indicated for the other food products may pose storage problems, if not accompanied by appropriate processing. This is true especially for yams, Irish potatoes, cocoyams, fruits and vegetables whose surpluses are projected to 52,000, 77,000, 42,000, 239,000, and 165,000 tons respectively by the year 2000, assuming the "weak economic growth rate hypothesis" [18].

It is hoped that future production would be stimulated so as to adequately bridge the existing gaps. Studies in the Centre province [1] indicate that the supply of food crops is already responding to demand and their production is evidently becoming more profitable than that of export crops. This is particularly the case with cocoa production which is currently facing increasing competition from foodcrops whose prices have been shown to be on the increase. Also, there are expectations that production by the increasing number of development projects involved in food production coupled with the peasant responses to price increases for foodcrops will substantially increase supply by 1990 [1].

2. Projected Gaps for Meats

The future shortage situation for meat is not promising either. Table 20 shows increasing shortages for all meats excepting poultry, from 1990 to the year 2000. Cow meat will face a shortage of 7,000 tons in 1990/01 assuming the "high rate of economic growth hypothesis".

The shortage may range from only 3,000 to 22,000 tons if the low rate of growth is assumed. Goat and sheep meat as well as pork face similar shortage situations. Their shortages are higher under high growth rate assumptions than under low growth rate assumptions. Only poultry has a promising future for the country, with surplus supplies that range from 3,000 tons in 1990/91 to 40,000 in 2000/01. These surpluses are not high enough to cover the shortages of the other meat sources.

Table 20: Trend of Projected Absolute Gaps between Effective Demand and Supply of Meats
(100 tons)

Type of Meat	1990/91					
	H ₁	H ₂	H ₁	H ₂	H ₁	H ₂
Cow meat	-7	-3	-20	-13	-37	-22
Goat & Sheep meat	-13	-11	-18	-14	-23	-15
Pork	-12	-10	-18	-15	-23	-20
Poultry	3	3	13	14	30	40

H₁ = High rate of economic growth hypothesis

H₂ = Low rate of economic growth hypothesis

Source : Plan Alimentaire a long term pg. 92

Meanwhile there is high unexploited potential domestic capacity for the production of livestock categories such as cattle, poultry, pigs, sheep, goats, and inland fish. Such capacity could be more advantageously exploited if the dumping phenomenon now experienced for poultry and other meats and meat products is controlled.

3.4.3 : Food Imports

In spite of the talk about food self-sufficiency in Cameroon, food importation still drains a sizeable portion of her foreign exchange earnings. She has depended on imports to fill the demand/supply gaps for several food crop and animal products. Table 21 presents the volumes and values of food imports between 1981 and 1985 while Fig. 1a. presents the trends for the various products over the same period. The total imports show a gentle rising trend over the years, rising from 120,000 tons in 1981 to 252,095 tons in 1985. This represents 110.1% change in tonnage from 1981 to 1985. The average total volume of imports was 170,871 tons which were valued at 29,871 million francs CFA.

Cereals and cereal products exhibited a fluctuating trend with a remarkable jump from 42,478 tons in 1982 to over 90,000 tons in 1983. The average tonnage imported between 1981 and 1985 was 85,736 tons valued at 5,241 million francs. They represented 39.3% of the total food imports during that period cereals were thus the highest food group imported then.

Fig. 1a. Trends of Food Importation Volumes (1981- 85)

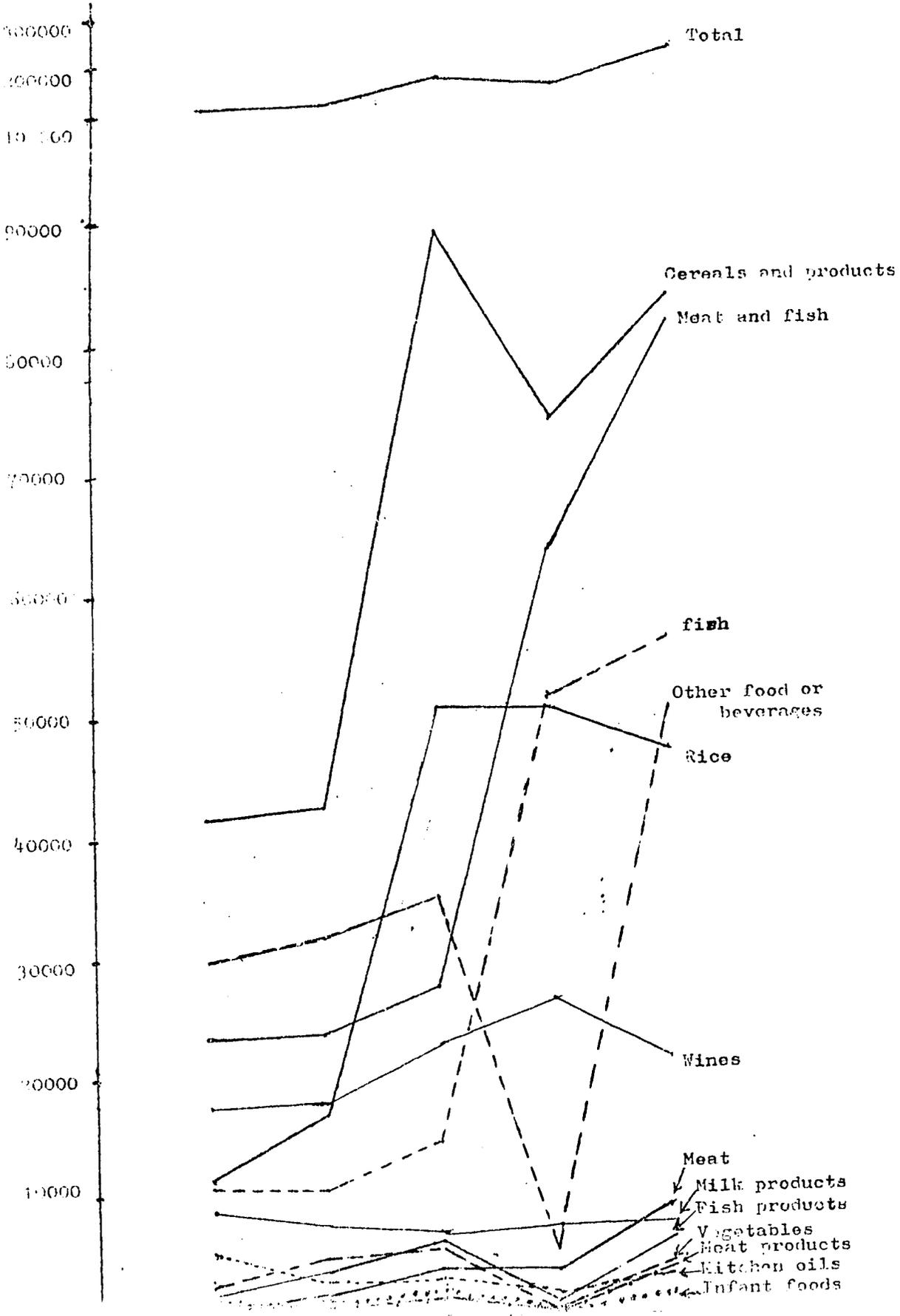


Table 21: Volumes and Values of Food Imports 1981 - 1985

	Volume in tons					Annual Average 1981-85	Value of Annual Average (million FCFA	Percent Change in 1981-85	Percent of Total 1981-85
	1981	1982	1983	1984	1985				
Meat and Fish	23 850	23 937	27 390	34 075	83 041	44 459	11 022	248.2	26.0
Cereal and Products	42 020	42 478	90 393	74 872	85 736	57 100	5 241	104.0	39.3
Rice	11 315	15 706	51 168	51 020	47 755	35 392	2 839	322.3	20.8
Kitchen oils	5 026	2 561	2 793	1 091	3 468	2 989	553	-31.0	1.7
Vegetables (Canned and Fresh)	2 704	4 032	4 061	1 295	5 740	3 728	573	112.6	2.2
Infant foods	538	640	56	617	1 141	699	650	112.1	0.4
Wine	15 771	17 606	22 680	26 379	21 401	20 767	2 757	35.7	12.2
Whisky	165	198	703	771	874	542	587	429.7	0.3
Other foods & Beverages	29 926	31 955	35 277	5 117	50 686	30 592	8 438	69.4	17.9
Meat	440	1 264	2 885	2 310	8 725	3 425	1 599	1083.0	2.0
Fish	11 186	10 496	14 291	52 601	56 137	28 942	4 449	401.9	16.9
Meat Products	1 454	899	975	701	4 033	1 612	345	177.4	0.9
Fish Products	2 240	3 772	1 256	500	5 094	2 748	601	163.1	1.6
Milk and Milk Products	8 530	7 505	6 983	7 384	8 252	7 731	3 523	-3.3	4.5
T O T A L S	120 000	123 408	134 663	174 219	252 095	170 677	39 371	110.1	100

Source : Note Annuel de Statistique, MINPAT/Direction de la Statistique et Comptabilité National, 1983, 1985.

Rice imports which were only 11,303 and 16,706 tons in 1981 and 1982 respectively, shot up and stabilized around 50,000 tons after 1983, raising the period's average to 35,592 tons, valued at 2839 million francs CFA. Rice made up 20.3% of the total food imports between 1981 and 1985.

Meat and fish which ranked third on the list of imports between 1981 and 1983, jumped to the second place after 1983 with the total imports increasing from 27,390 tons in 1983 to 64,075 and 83,041 tons in 1984 and 1985 respectively. Average importation during the period was 44,459 tons, valued at 11,022 million francs. Meat/fish importation experienced a 248.2% increase between 1981 and 1985 and represented 26.0% of the total food imports. Fish imports rose from just over 10,000 tons in 1981/82 to over 50,000 tons in 1984/85 thus moving from the sixth to the third position on the list of food imports. The average imports of fish between 1981 and 1985 were 23,942 tons valued at 4,449 million francs CFA, and representing 15.9% of the total tonnage imported during the period.

The importation of meat, meat products and fish products experienced fluctuations that ranged from 440 tons in 1981 to 3,725 tons in 1985 for meat with an average of 3,425 tons valued at 1.599 million francs. For meat products, the imports dropped from 1,454 tons in 1981 to 701 tons in 1984 only to rise again to 4,033 tons in 1985, bringing the average to 1,612 tons, valued at 845 million francs.

Similarly, fish products dropped from 3,772 tons in 1982 to as low as 580 tons in 1984, only to shoot up to as high as 5,894 tons in 1985, bringing the periods average to 2,748 tons, valued at 601 million francs. These three products respectively constituted 2, 0.9, and 1.6% of the total food imports during that period. They all exhibited fluctuating and almost horizontal trends. Milk and milk products importation had been fairly constant during that period, ranging between 6,983 tons and 8,530 tons, with an average of 7,751 tons, valued at 3.528 million francs. They constituted 4.5% of the total food imports for that period.

Table 22 presents projections of import demand and production from 1985 to 1990 under four different income growth rate assumptions.

The table shows that under the current production trend, importation will increase over the 1978-1980 average for all the food products considered excepting beef and fruits. The increases will grow at different rates depending on whether income exhibits a low, trend, or high income growth rate. Even under high future production assumptions and medium income growth, import demands are still expected to increase for all the products excepting beef, although not as high as under the current production trend. Cameroon is therefore expected to depend on importation in the future, to bridge the gap for rice, wheat, vegetables and most meats. Serious measures need therefore be taken to cut down the magnitude of the imports in order to save some of the now badly needed foreign exchange earnings.

Table 22 : Projected Food Import Demand (1000 tons)

Commodity	Average 1978/80	Low Income Growth/ Trend Production		Medium Income Growth/ Trend Production		High Income Growth/ Trend Production		High Production/ Medium Income Growth	
		1985	1990	1985	1990	1980	1990	1985	1990
		Rice	23020	48466	75600	52212	33914	64972	135064
Wheat	112715	299838	325955	302913	430929	359927	570708	-	-
Poultry	171	213	239	224	336	247	339	184	239
Beef	40	30	45	41	56	44	55	22	16
Tinned meats	1151	1435	2011	1512	2354	1689	2707	1511	2438
Fish	14613	22555	28053	23503	32677	26246	37501	-	-
Dairy	155	183	243	185	253	190	252	172	207
Vegetables	200	240	290	252	346	293	432	225	287
Fruits	126	121	117	130	131	133	141	123	150

Source : Cameroon an Export Market Profile Pg. 19.

The size of the import demand for food products can be influenced by income, prices, and the size of domestic production. Table 23 gives the import demand elasticities with respect to income, price and domestic production for some food products. The table shows that the demand for imported rice, wheat, fish, beef, poultry, tinned meats, dairy products, vegetables and fruits, increases as income increases. Such increases are more than proportionate for rice, wheat, and vegetable products. There is unitary income elasticity for beef and tinned meats implying that their import demand increases proportionately with income. Inelastic import demands are portrayed for fish, poultry, fruits and dairy products.

The import demands for rice, beef, poultry and tinned meats can be cut down by raising import prices. These products have high negative price elasticities of import demand. Increasing the import prices of the other products - wheat, fish, vegetables and fruits will not significantly affect their demand. A 1% change in their prices will lead to less than 1% change in their import demand as opposed to rice, beef, poultry and tinned meats whose import demands will drop by more than 1% if their prices are increased by 1%.

Only the domestic production increase for beef, tinned meats, and dairy products will cut down their import demands. Increases in the domestic production of rice, vegetables, poultry and fruits will not have

Table 23 : Elasticities of Income, Price and Domestic
Production for Export Demand

	Elasticities		
	Income	Price	Domestic Production
Rice	1.73	-1.24	- 0.24
Wheat	1.11	-0.99	NA (not applicable)
Fish	0.82	-0.11	NA
Beef	1.00	-1.43	- 3.45
Poultry	0.90	-1.90	- 0.96
Canned Meats	1.00	-1.52	- 1.79
Dairy index	0.23	-0.63	- 1.33
Vegetables index	1.21	0.23	- 0.35
Fruit index	0.57	0.30	0.59

Source : Cameroon, An Export Market Profile Pg. 13.

adequate effects on their import demand. The table shows that if the domestic production of rice, vegetables, poultry and fruits is each increased by 1%, the import demand for these commodities will drop by only 0.34, 0.35, 0.96 and 0.59% respectively. On the other hand, import demands for beef, tinned meats, and dairy products will decrease by more than 1% (i.e. by 3.45, 4.79 and 4.3% respectively).

3.5 : Food Consumption Expenditures

3.5.1 : Structure of Household Expenditures

The basic document that provides information on Cameroon's consumption expenditure is the 1983/84 National Budget-Consumption Studies [12]. The studies partitioned the country into six agro-ecological zones with the cities of Yaounde and Douala as separate zones. This classification facilitated representative sampling for the study. The resulting agro-ecological zones are presented in Table 24.

Table 24 : Cameroon's Agro-Ecological Zones

Zones	Composition (Provinces, divisions and towns)	Population
1. Yaounde	Urban	494,060
2. Douala	Urban	505,968
3. Cocoa/Tobacco	Centre, South and East Provinces	11,635,414
4. Coffee	West and North West provinces plus Kungo and Neme divisions	2,955,056
5. Cotton/Livestock	Adamawa, North and Extreme North provinces	12,755,027
6. Unclassified	South West and Littoral excluding Neme and Kungo divisions	505,913

Source : Enquete Budget - consommation.

From the budget studies, the 1983/84 household budget for Cameroon was 750,000 million francs CFA. Table 25 indicates that food, drinks and tobacco took up 45% of the total budget that year.

Table 25 : Structure of 1983/84 Annual Expenses

Item	%	Expenses
Food, drinks and Tobacco	45	337.50
Clothes and shoes	15	112.50
Rents, water, electricity and fuel	10	75.00
House equipment	8	60.00
Health and treatments	5	37.50
Transport and communication	12	90.00
Education, Leisure and other services	7	52.50
TOTAL	100	750.00

Source : Enquete Budget - Consommation

The average annual total expenditures on food, drinks and tobacco per family were as follows [12] :

Yaounde zone	618594.90 Francs CFA.
Douala zone	580625.22 Francs CFA.
Cocoa/Tobacco zone	131174.54 Francs CFA.
Coffee zone	151827.22 Francs CFA.
Cotton/Livestock zone	199150.37 Francs CFA.
Unclassified zone	202337.11 Francs CFA.

The total per household annual expenditure on food, drinks and tobacco therefore amounted to 1,545,79.35 francs CFA. AS expected, the two urban zones spend more on food

than the other zones since most of their food is obtained through the market while the rest of largely rural Cameroon produces and consumes most of what they produce, thus cutting down on their food expenses.

The structure of the household expenditure from the different agro-ecological zones may depend on the qualities, quantities and prices of the food items consumed. On "a priori" grounds, the socio-professional category of each household is expected to influence the size and structure of its food expenditure.

"A priori" reasoning also suggests that the traditional feeding habits imposed on each zone by environmental and cultural factors, should play a role in determining the consumption expenditure structure of its households. This factor could be greatly affected in cosmopolitan zones where diversified feeding habits from households originating from different zones coexist.

Attempts are made using existing data to verify the authenticity of the above "a priori" expectations. Nine major food groups share the household food budgets of Cameroonians as indicated in Table 26.

Table 26 : Distribution of the Food Budget According to Food Groups

<u>Food Groups</u>	<u>% of Food Budget</u>
Cereals and cereal products	19.79
Starchy foods and flours	9.46
Legumes and grains	9.04
Fruits and nuts	2.75
Milk, milk products and eggs	2.18
Meat	18.64
Fish, crustaceae and Molluscs	13.27
Drinks and Tobacco	10.58
Oils and Fats	14.29
TOTAL	100

Source : Enquete Budget - Consumption Pg. 35.

It is clear that cereals, meats, fats, and oils, fish, crustaceae and molluscs in that order, take up sizeable portions of the food budget. They are followed by drinks, starchy foods and legumes/grains. Very little is spent on fruits and milk which trail the expenses list with only 2.7% and 2.18% respectively.

The break-down of the annual food expenditure on the different food groups and according to socio-professional categories is presented in Table 27. The table shows that the total annual expenditure by the farming families is 138,484 million francs CFA which is more than double the expenditure of any other socio-professional group. This cannot mean that the farming family spends more on food than other socio-economic groups, granted that they produce and consume over 50% of what they produce. Since over 70% of Cameroon's population is a farming population, it is reasonable

Table 27 : Annual Expenditure on Food Groups by Socio-Professional Category of Head of Household (1980-81, Prices 1971.)

Food Group	Farmer	Self Employed labour	Independent Occupation	Senior Staff	Intermediate Staff	Junior Staff	Labourer	Unemployed
Cereals & Cereal Products		1,422	3,510	1,140	2,257	6,205	2,067	5,457
Starchy Foods & flours	5,754	552	5,149	1,330	2,150	5,799	6,133	3,799
Legumes & grains	11,151	563	5,149	934	1,551	3,314	4,404	2,969
Fruits & Nuts	3,960	235	1,402	346	419	1,033	1,165	365
Milk, Milk Products & eggs	1,775	137	1,103	555	527	1,204	1,092	799
Fats and oils	21,069	1,173	7,290	804	2,336	4,600	5,044	4,075
Meats & Poultry	25,705	1,353	5,544	2,295	2,503	7,535	3,416	5,458
Fish, & Seafood								
Drinks & Tobacco	14,415	313	4,747	1,371	1,774	4,301	4,949	2,062
Total	1136,404	7,124	51,087	10,113	13,577	39,700	43,065	30,353

Source : Orissa Budget - Consumption Survey de l'Orissa; Pg. 98

to conclude that the figures in Table 27 reflect the magnitude of the farming households.

In other words, the rather high expenditure by the farming households reflects their numbers rather than identify them as the highest spenders on food. Also, it has to be noted that these expenditures reflect only the expenses on the commodities actually bought. They exclude the values of what is produced and consumed directly by the producers. Consequently, the totals of Table 27 could be said to reflect the proportions of the country's households according to socio-professional categories and not the expected expenditure differences between socio-professional categories. It rather ranks the classes in descending order of magnitude as follows: farmers, independent workers, labourers, junior staff, the unemployed, intermediate staff, senior staff, and paid agricultural labour. Also, invariably, cereals and meats take the bulk of the household expenditure irrespective of its socio-professional classification.

Furthermore, Tables 28 and 29 do not portray the expected significant difference in food expenditure among the socio-professional classes. No outstanding differences are observed between the percentages of the different professional groups that consume the various food items, (Table 28). However, the food items that are highly demanded by all the professional groups are easily identified in this table. These are plantains, cocoyams, cassava, rice, groundnuts, and maize, in order of demand. They are demanded by 21, 19, 16, 12, 9.9, and 7% of the population respectively.

Table 20 : Structure of Expenditure on Food by Occupation of Household Head

Occupations	% Spent on Food Items											Total
	rice	rice	Plantains	Cassava	Sweet Potatoes	Cocoyams	Garro	Yam	Beans	Other	Nuts	
Traders	13	10	18	18	0	21	2	3	3	11	12	100
Labourers	16	6	22	19	0	17	0	7	3	10	10	100
Craftsmen	13	14	19	14	1	14	3	2	5	11	11	100
Field Workers	14	4	21	18	1	22	1	4	4	12	12	100
Staff	15	5	24	19	1	10	1	4	4	0	0	100
Students	10	4	25	8	2	15	0	6	10	0	0	100
Unemployed	11	0	22	20	0	14	3	10	2	0	0	100
Average	12	7	22	16	0	19	2	5	4	9.9	9.9	100

Source : *La Consommation et le Marché de Vivres dans les Villes de Centre et Sud*, Pg. 5.

Table 29 : Structure of Expenses of Food Items, according to Revenue Classes

Revenue Classes (Francs)	% of number of Households that Spend per Food Item											Total
	No. of Households	Rice	Maize	Plantains	Beans and Pro-ducts	Sweet Potatoes	Coco-yams	Carrots	Yams	Beans	G. Nuts	
Less than 10,000	89	12	5	25	22	0	17	0	2	2	9	100
10,000-20,000	217	16	7	22	24	0	13	0	2	7	3	100
20,000-30,000	224	16	6	10	16	1	21	2	4	4	12	100
30,000-40,000	220	16	5	22	18	0	15	4	6	3	12	100
40,000-50,000	134	15	5	19	15	1	21	1	7	5	12	100
50,000-60,000	83	14	4	22	16	0	21	0	14	2	7	100
60,000-70,000	53	13	6	20	16	2	26	0	1	5	12	100
70,000-80,000	55	15	6	21	13	2	26	1	0	2	12	100
80,000-90,000	22	12	2	26	16	2	17	0	0	3	15	100
90,000-100,000	35	13	3	25	20	0	19	0	3	4	0	100
More than 100,000	73	9	6	21	22	0	19	2	7	3	11	100

Source : La Demande et Marche de Vivres dans les Villes du Centre et Sud. Pg. 2.

Table 29 confirms the absence of food expenditure distinctions between professional groups. It shows no distinct differences in the number of households that spend on the various food items despite the differences in revenue groups. Instead, it can be identified that about the same food items are highly demanded by all revenue groups. Differences in revenue groups do not appear to affect the demand for highly priced high quality foods as expected.

However, Table 30 shows distinct regional or provincial differences in the number of households that spend on the different food items. This tends to agree with "a priori" reasoning that the feeding habits imposed on each zone by its environment and culture play a determining role in the consumption expenditure structure of households. It indicates that most households originating from the Central South region do not spend on rice as does the East, North West, West and South West provinces. Households of the Central South region spend more on root and tubers (cassava and cassava products, plantains and cocoyams) - 22, 21, and 20% of the households in this region spend on cassava, plantains and cocoyams respectively. The East apparently concentrates on plantains, rice, cassava and maize. Households of Eastern origin spend more on maize than any other province, including the West and North West provinces, which are known to be the major producers of this crop. This is probably because, away from home, they have higher preferences for maize than for other foodstuffs available to them. Households of Littoral province

origin are more used to cocoyams, plantains, cassava, cassava products, and rice in that order.

Table 30 : Structure of Expenses on Food by Province
of Origin of Head of Household

Province	% of Households that Spend on Food Items										
	Rice	Maize	Plantains	Cassava and products	Sweet potatoes	Cocoyams	Taro	Yams	Beans	Nuts	G.
Central South	13	5	21	22	1	20	0	4	3	12	100
East	30	14	27	19	0	9	0	0	0	2	100
Littoral	14	2	20	16	0	29	2	4	4	7	100
North	10	10	27	10	0	20	0	4	1	17	100
North West	32	6	18	7	2	9	0	11	6	10	100
West	22	8	23	12	0	13	3	5	4	8	100
South West	20	0	18	7	0	27	0	28	0	0	100

Source : *La Demande et le Marché de Vivres dans les Villes du Centre et Sud.* Pg. 9.

Those from the North express their demand for plantains, cocoyams, groundnuts, rice, maize and cassava. The highest percentage of households that spend on plantains is shown to come from the North and East provinces even though no plantains are produced in the North. It does appear that households of Northern origin resident in the South easily adapt to and integrate foodstuffs of Southern origin into their diet. The highest percentage

of households that buy rice comes from the North West province. For households originating from this province, rice comes first followed by plantains, yams and ground-nuts. Maize and beans are ranked the same - only 6% of the households allocate part of their food budget on these two food items, even though the North West is one of the leading suppliers of maize. This can be explained by the high rate of home-consumption of this staple food. About 23, 22, 13 and 12% of households from the West allocate some of their food budget to plantains, rice, cocoyams and cassava respectively. Only 3% make allocations for maize. Yams are bought by 23% of the households from the South West. This is more than double the percentage from the North West (11%) which follows the South West in this respect.

The only other provinces that seem to be interested in yams are the West (5%), the Littoral (4%), the North (4%) and the former Central South province (4%). It should be recalled that this analyses are based on samples of households resident in the urban centres of the Centre and South provinces.

It is obvious from the above analysis that contrary to "a priori" expectations, the composition of zonal populations according to socio-professional groups does not influence the structure and size of household expenditures on food, neither do the quality nor prices of the food items affect the structure of household expenditure. To a certain extent, this supports the hypothesis that

the traditional feeding habits of the region of origin of each household influence the size of its expenditure in favour of food items produced in its region of origin.

3.5.2 : The Nature of Purchased Food Expenditure Distribution

Various food groups take up various coefficients of the household and therefore national food budgets. Animal products take up an average of 34.09% of the food expenditure, excluding the value of what is home-consumed by the producers. Although this falls below the level in developed countries it is considered relatively high for a developing country [12].

Table 31 presents the distribution of the national expenditures, on food according to classified zones and food groups. It shows that Cameroon with a population of 3,351,394 spent 59,751 million francs CFA on cereal and cereal products, 33,339 million francs CFA on starchy foods, 31,070 million on legumes and grains, 9.711 million on fruits and nuts, 7.635 million on milk and milk products, 50,324 million on fats and oils, 65,723 million on meat and poultry, 45,775 million on fish, molluscs and crustaceae, and 37.222 million on drinks and tobacco. A total of 352,146 million francs CFA was thus spent on food, drinks and tobacco.

The nature of expenditure on each food group is discussed below.

Table 31 : Annual Expenditures on Food Groups by Classified Zones
of Cameroon (in 1,000,000 Francs CFA.)

Food Group	Expenses by Classified Zones						Total Cameroon
	Yaounde	Douala	Cocoa-Tobacco Zone	Coffee Zone	Cotton/Livestock Zone	Unclassified Zones	
Population	4,394,030	1,905,900	1,535,444	12,955,056	2,755,027	505,913	3,051,394
Cereal & cereal Products	5,344	6,537	6,245	13,333	34,718	2,319	69,751
Starchy Foods	7,370	8,603	4,465	7,407	2,902	2,091	33,339
Legumes and grains	5,260	5,326	3,515	8,341	7,219	1,442	31,370
Fruits & Nuts	1,290	1,411	755	1,364	4,051	330	9,711
Milk and Milk Products	1,663	1,405	883	1,444	1,741	469	7,535
Fats and oil	5,536	6,141	5,149	13,036	11,373	3,599	50,324
Meat & Poultry	9,042	7,251	9,247	9,944	27,539	2,605	65,728
Fish, Molluscs and Crustaceans	7,271	7,350	11,405	9,534	2,019	3,179	46,776
Drinks & Tobacco	6,143	5,222	3,559	3,523	4,546	3,529	37,282
Total	50,019	50,144	50,235	79,141	102,718	19,559	352,526
Per Capita Expen- ses (CFAF)	101,241	99,105	31,145	26,721	37,204	38,630	39,227

Source : Enquete Budget; Consumption Pg. 97.

Cereals

The average per capita annual expenditure on cereals in the country as shown in Table 3.2 is 7,327 francs. Yaounde, Douala and the Cotton/livestock zones are shown to be the heavy spenders on cereals. Millet and sorghum take up 4.62% of the food budget, most of which is spent by consumers in the Cotton-Livestock zone where sorghum consumption is prevalent, taking up over 15% of their food budget [13]. The Cotton-Livestock zone also spends highest on cereals. It spent 34.7 million francs in 1963/64, which is more than double what was spent by the runner up zone - the Coffee zone with 13,333 million francs CFA. Rice however remains the leading cereal on which every zone of the country spends an important portion on its annual food budget.

The cotton zone also leads the nation in expenditure on rice, accounting for over 30% of the nation's expenditure on rice. It is followed by the coffee and the cocoa zones which account for about 23 and 17% respectively. The cities of Yaounde and Douala account for about 8% each while the unclassified zone trails the list with 3%.

Starchy Foods

The average expenditure per head is 3,737 francs. The heavy spenders on this food group are the Douala and Yaounde cities whose annual per capita expenditures are 16,732 and 15,743 francs respectively. The rest of the zones spend less than 5,000 francs per person per year.

Table 32 : Per Capita Annual Expenses on Food Groups by Classified Zones

Food Groups	Per Capita Expenses by Classified Zones (CFA.)						Total Cameroon
	Yaounde	Douala	Coast/Tobacco Zone	Coffee	Cotton/Live- stock Zone	Unclassified Zones	
Cereal and Cereal Products	11556.09	12990.12	4164.90	4487.22	12530.28	3532.15	7027.36
Starchy Foods	13743.59	13707.57	4710.25	2191.15	1047.75	4112.59	3737.33
Legumes & Grains	9507.17	9300.00	2193.22	2510.80	3347.11	2612.57	3214.88
Fruits & Vets	1243.43	1742.55	420.20	535.52	1440.53	302.35	1063.16
Milk & eggs	3030.0	4325.94	407.10	439.00	571.52	955.11	797.25
Fats and oils	10140.55	11443.43	1056.32	5013.00	2151.65	7044.27	5429.67
Meat & Poultry	116591.00	14443.96	5325.52	3217.16	9056.65	2602.43	7019.04
Fish, Molluscs and crustaceae	14197.10	11412.90	12430.52	3141.97	2517.13	5204.95	5101.05
Drinks & Alcohol	10733.53	9786.20	4953.92	2744.63	1333.15	1397.05	3775.49
Total	194155.47	191911.02	25015.53	14503.27	34236.83	10304.04	35095.24

Source : Enquete Budget-Consommation. Pg. 53 - 73.

Plantains take the largest share of the budget in this group, they take up 2.0% of the entire food budget per year. They are followed by cassava which accounts for 2.6% of the annual food budget. Yaounde and Douala allocates more than 5% of their budgets to plantains while the rest of the zones, excepting the cotton zone, allocate about 3%. Yaounde and the unclassified zone spend more on cassava and cassava products than any of the other zones - almost 2% of their annual food budget is spent on cassava while the rest of the zones devote less than 1% of their annual food budget to these products.

Apart from the cotton zone which spends an insignificant sum on cocoyams, the rest of the zones spend at least 2% of their annual food budget on this item, Yaounde and Douala topping the list with 3.2 and 3.6% respectively.

Very little is spent on taro and potatoes. Only 0.32 and 0.37% respectively of the national food budget goes to these products [12].

Legumes and Grains

These are consumed in every ecological zone but only 2.7% of the national food budget is allocated to this class of food and principally on groundnuts. The coffee zone tops the list with about 4% of its food budget allocated to groundnut consumption while the rest of the zones including Yaounde and Douala are on about 2%.

The per capita annual expenditure on legumes is about 3.214 francs, while that for Yaounde and Douala is over 9.000 francs, the rest of the zones spend between, 2,200 and 2,500 francs per person each year.

Fruits and Nuts

Expenses on these are low all over the country. In the zones, the annual per capita expenditure ranges from 420 francs in the Cocoa zone to 1,443 francs in the Cotton zone. Yaounde and Douala spend 2,415 and 2,744 francs respectively while the national per capita expenditure is 1,053 francs (Table 32). The expenditure by the cotton zone on this class of food is raised by colanuts on which the zone spends about 3/5 of its annual food budget. This is almost three times the national average and what the runner up zone (the coffee zone), spends [12/].

Fats and Oils

These take up an average of 5.489 francs per person with Yaounde and Douala dominating as usual with 10,143 francs and 11,443 francs respectively (Table 32). Palm oil, cotton seed oil and groundnut oil take up to about 1% of the food budget. Palm oil is important to all but the cotton zone. Budget allocations to it are highest in the unclassified and coffee zone (9.94% and 13.8%).

Milk, Milk Products, and Eggs

These attract the lowest expenditure per person (737 francs) at the national level. All the zones spend less than 1,000 francs per person on this food group,

excepting Yaounde and Douala which have per capita annual expenses of 3,358 and 2,526 francs respectively. (Table 32). The budgetary allocation for this class of food, is most ununiform among the zones. Yaounde and Douala as usual top the list. Expenses on fresh milk however stand out in the Cotton and Livestock zone. [12] where most of the milk is produced and home-consumed.

Meats and Poultry:

These rank second on the list of food groups with the highest national per capita expenditure (7,019 francs). They are of course consumed in every ecological zone, the least spending 3,217 frs (Coffo zone), while the highest (Cotton zone) spends 9,857 francs per person per year. Yaounde and Douala are however the highest spenders on this food group having a per capita expenditure of 15,592 and 14,447 francs respectively (Table 32). Cow meat is the principal popular item in this group for all zones, and much more so in the cotton zone. Poultry appears to enjoy the same importance in all the zones [12].

Fish, Molluscs and Crustaceae.

The per capita expenditure on these ranks third and is 5,181 francs per person. The expenditure is lowest (2,917 francs) in the Cotton zone and highest (12,432 francs) in the Cotton zone, which beats Douala (11,412 francs) but falls below Yaounde (14,597 francs) as indicated by Table 32. The cocoa zone and the cities of Douala and Yaounde have the highest fractions of the budget for this food group. The budget for smoked fish is more outstanding

in the Coffee, Cotton, and Unclassified zones. But expenses on fresh fish seem uniform in all the zones. Molluscs and crustaceans receive an insignificant portion of the food budget [12].

Drinks and Tobacco

The average per capita expenditure on these is 3.775 francs. It ranges from a low of 1.335frs in the Cotton zone to a high of 6.227 francs in the Unclassified zone. Yaounde and Douala spend 10.734 and 9.755 francs respectively per person (Table 23). The budget coefficients for these products are high for the Cocoa, the Unclassified zones and the two big cities. The coefficients in the Cocoa and Unclassified zones are raised by the expenses on palm wine and industrial wines. The national budget coefficient for tobacco is negligible but is up to 1% in the two big towns and 2% in the Cocoa - Tobacco and Unclassified zones [12].

A careful study and comparison of the consumption and Expenditure Structure of the various food groups by region invariably indicates a high correlation between consumption and expenditure. Also, the consumption and expenditure levels are high in the relevant production zones and the two cities, and low in the zones where production is low or insignificant. Producing zones therefore tend to consume the products they produce and to spend more or same. This implies that even though the rate of home consumption is high among the producers the rest of the non-producing population in the producing

zones depend and consume mostly the foodstuffs to which they are traditionally and culturally associated. The high consumption and expenditure rates of Yaounde and Douala for all foodstuffs is understandable since most of the population are mainly consumers who must buy all their food requirements. Consumption of home-produced food is almost absent in those towns. There is evidence of shifts in the consumption patterns of the households living in the big cities due to their coming into contact and association with the diversified foodstuffs and food consumption patterns of other regions.

3.6 : Analysis of Food Retail Prices

A lot of caution is needed in the analysis of food retail prices available from different sources, especially where methods and techniques of price collection are certainly different and where the period of data collection even for the same year are different. These can result in wide variations in the prices of the same product due to seasonal variations. It is time series data on prices collected using the same techniques and methods that can more meaningfully be analysed.

Table 33 is a clear example of price variations in urban areas for the same year (1986), from two different sources. The table shows marked differences between the average per unit price for maize (80 and 123 francs), rice (150 and 195 francs), Irish potatoes (200 and 153 francs), Plantains (120 and 74 francs),

Table 33 : Main Prices of Foodstuffs in Urban Areas
1986 from Two Different Sources

Commodity	Average Price in CFA/kg (Source a)	Average Prices in CFA/kg (Source b)
1. <u>Cereals (average)</u>	145	
Maize	80	128
Rice	60 160	195
Millet & Sorghum	50	160
Wheat flour	460	-
2. <u>Starchy Foods (average)</u>	100	..
Yams	150	147
o Cassava	45	53
Sweet Potatoes	100	92
Irish Potatoes	200	153
Cocoyams & Taro	80	71
plantains	120	72
3. <u>Meats (average)</u>	1,500	-
Cow meat	1,000	-
Goat & Sheep Meat	2,000	-
Pork	1,700	-
Poultry Meat	1,470	-
4. <u>Fish & Crustaceans (average)</u>	770	-
Fish	700	-
Crustaceans	1,500	-

Source (a) Long Term Food Plan A;

(b) Etude de la commercialization de produit vivrier

Sweet potatoes (100 and 92 francs), and cocoyams (80 and 71 francs) from the two sources compared. An attempt to analyse trends by serially combining this type of data could be very misleading. Only data available from the same source shall be used for the purpose of trend analysis in this section.

However, it is important to point out that price differences exist between rural and urban areas. Reference to Table 34 confirms this. The table shows that apart from rice and wheat whose prices are similar in urban and rural centres, and from beans/peas whose price is lower in the urban than in rural centres, the prices of all the other foodstuffs are clearly higher in the urban than in the rural areas. This could be explained by the fact that production takes place in the rural areas where there is also a high rate of home consumption by the producers and therefore minimum market demand for what they produce. Consequently, prices are lower in the rural areas on the average and higher in the urban areas, which are basically consumption centres. The cases of rice and wheat are different since most of these commodities are imported. As for beans/peas, the higher prices in the rural areas can be explained by the peas component which is imported and is very scarce in the rural areas where when available, can be bought only at a very high price.

3.6.1: The Nature of Retail Price Differences Among Provincial Headquarters and Between Rural and Urban Centres

Interprovincial price differences are expected because of socio-cultural and natural resource endowment

Table 34 Urban and Rural Prices of Foodstuffs

Product	i	
	Urban Price/kg (CFA)	Rural Price/kg (CFA)
Millet & Sorghum	160	130
Maize	128	108
Rice	195	195
Wheat	178	178
Plantains	72	45
Cassava	53	40
Yam	147	122
Cocoyam-Taro	71	62
Irish Potatoes	153	102
Groundnuts	363	220
Beans & Peas	160	242
Palm oil	441	350
Sweet Potatoes	92	74

Source : Etude de la commercialization des produits vivriers
Annex VIII Pg. 29

differences. The sizes of the price differences are determined by production and supply sources and their distances from the consumption centres.

Table 35 presents 1986 retail prices of major foodstuffs in all provincial headquarters. The price of maize is shown to vary from as low as 99 and 110 francs at Bafoussam and Tamenda respectively, which are both situated in provinces that are major producers of the product, to as high as 132 francs in Garoua in the Northern province and 120 francs in Douala in the Littoral province.

Generally, prices tend to be relatively high in Douala and Yaounde for most foodstuffs understandably due to their dense population, high demand, and the fact that city populations are basically consumers.

The high price of maize in Ebolowa, Ngaoundere, Maroua and Garoua could possibly be explained by factors related to the forces of supply and demand. They are far away from the production areas and being urban centres, they constitute consuming populations.

Sorghum is produced and consumed principally in the three northern provinces where the towns of Garoua, Maroua and Ngaoundere are located. The prices in these towns are fairly uniform, probably because they are close to the producing centres and because of the presence of the National Cereal Office whose price stabilization role is effective in these provinces. Rice is heavily consumed throughout the country and most of it is imported.

Table 35 : 1986 Prices of Major Foodstuffs by Provincial Headquarters

Commodity	PRICES IN CFA/KG											Average **										
	B'ida	B'essem	Y'dé	D'la	B'toua	Buea	Garoua	Maroua	Ngaoundéré	Ebolowa												
Sorghum	!	!	!	!	!	!	!	161	!	160	!	125	!	!	162							
Maize	!	110	!	99	!	123	!	180	!	110	!	116	!	182	!	150	!	130	!	140	!	128
Rice	!	129	!	190	!	192	!	171	!	-	!	200	!	232	!	209	!	250	!	200	!	195
P ₁ antains	!	81	!	23	!	67	!	64	!	77	!	50	!	62	!	-	!	106	!	93	!	72
Cassava	!	-	!	-	!	-	!	45	!	-	!	-	!	70	!	-	!	-	!	-	!	55
Yams	!	105	!	-	!	161	!	113	!	-	!	153	!	328	!	198	!	-	!	-	!	147
Irish potatoes	!	70	!	85	!	176	!	143	!	235	!	-	!	-	!	161	!	140	!	261	!	153
Sweet potatoes	!	-	!	73	!	43	!	56	!	-	!	77	!	226	!	103	!	-	!	-	!	92
Groundnuts	!	324	!	382	!	338	!	308	!	400	!	435	!	267	!	261	!	345	!	304	!	365
Beans	!	176	!	190	!	165	!	163	!	270	!	361	!	123	!	327	!	267	!	293	!	202
palm oil	!	389	!	404	!	440	!	372	!	-	!	403	!	612	!	-	!	667	!	467	!	401
Cocoyams & Taro	!	30	!	78	!	-	!	-	!	+	!	79	!	-	!	205	!	126	!	-	!	71

* Prices are averages from the two major markets in Yaounde and Douala

** The average includes other markets other than provincial headquarters

Source : Marketing study. Annex 4 Pg. 54.

This explains the high prices in towns and provinces far away from Douala which is the Sea Port through which the imports flow in. Rice is produced by three parastatal organisations located in Hdep in the North West province, Mbo Plain in the West province, and Yagoua in the Extreme North province. The combine effects of proximity to producing centres and to the Sea Port, explains the relatively low prices of 171, 189, and 190 francs in Douala, Bamenda and Bafoussam respectively. Similarly, the combine effects of distance from both the importing and producing centres could explain the relatively high retail prices of 256, 232, 209, and 200 francs in Ngaoundere, Garoua, Maroua and Ebolowa respectively.

Root crops like Irish potatoes, sweet potatoes, yams and cocoyams have lower prices in the Southern provinces where they are produced, and higher prices in the cities of Yaounde and Douala where the demand is high, and in the Northern towns owing to their long distances away from the producing centres.

Similarly groundnuts which are produced in large quantities in the North and Extreme North have relatively low prices in the neighbouring northern towns as opposed to high prices in the town of Ngaoundere and in the Southern cities. However, there is also production in the Centre, North West and West provinces.

The effects on prices, of proximity to the supply centres, and the combine effects of demand and distance away from the supply centres are again clearly evident in the case of palm oil. The price of palm oil in the towns of Bamenda, Bafoussam, Yaounde, Douala and Buea

which are near the producing centres is about 400 francs per kilogram as opposed to the prices in Garoua and Ngaoundere which are as high as 612 and 677 francs per kilogram respectively. This can be attributed mostly to their long distances from the producing centres and the consequent high cost of transportation.

Prices collected as far back as 1979 [8.] for some major towns, show exactly the same trend. Table 36 illustrates this with the retail prices of five commodities in seven major towns. The table shows the prices of maize to be lowest (42 and 50 francs per kilogram) in Bafoussam and Bamenda which are the major producers of the crop. They are high for Yaounde, Douala, Limbe, Garoua and Bertoua where they are 66, 60, 75 and 83 francs per kg. respectively. These towns are all mainly consuming centres which are also far away from the producing centres. The prices for rice, plantains, cocoyams and tomatoes, follow exactly the same trend.

This confirms the observation in Cameroon's pricing policy, that with respect to food crops, the price control policy is ineffective and prices are therefore determined by the forces of supply and demand [16.].

Table 36 : Average Retail Prices for Selected Products
(1979) in the Major Towns

Product	Prices in CFA/kg.						
	Bamou- de	Yaounde	Douala	Victoria- ria	Garoua	Bertou- oua	Bafoussam
Maize	50	63	60	62	75	83	42
Rice	-	150	129	145	155	-	138
Plantains	30	34	55	62	75	50	25
Cocoyams	30	59	63	-	52	30	-
Tomatoes	124	197	155	115	156	303	114

Source : Ministry of Agriculture 1980, in Commercialization des Produits Vivriers de Base au Cameroun ; Analyse de la documentation. Pg. 22.

3.5.2. : Trends in Foodstuff Retail Prices

Long-term movements in agricultural prices are usually caused by slow changing factors such as changes in population, changes in production technology and changes in real per capita income. Short-term movements on the other hand are caused by factors such as weather variations, wars, booms and depressions [23]. Various combinations of the above factors influence price changes for the various foodstuffs in Cameroon.

Food retail price data have been shown to vary widely for the same commodity in the same year. Consequently only price data from the same source can be conveniently used

for purposes of trend analysis. In the absence of such time-series data for the whole country or for several parts of the whole country, it is deemed reasonable to analyse prices available for the major cities to reveal the nature of food price trends in the country. For this purpose, price data available for some major towns of Cameroen are used.

The only recent country wide retail price figures available at the time of study are the mean prices given in Table 37, which cover only three years - 1983/84 to 1985/86. From the resulting trends presented in Fig. 1, all the food items treated show a rising trend except for cassava which portrays a slight declining trend, and rice whose price is almost constant over the three years. The per unit price is lowest for cassava and maize whose prices are in the neighbourhood of 100 francs CFA per kg. Meat and fish have the highest per unit prices which range from over 500 to about 700 francs per kg. for fish and from over 200 to about 900 francs for meat.

Tables I, II, III, IV, V, and VI of the annex, present retail prices for major foodstuffs in six towns of the various regions of the country over a four year period (1977 to 1980). From these tables the illustrative graphs that follow were produced to facilitate the comparison of price differences between towns over time.

The price trends for cereals and cereal products as represented by those of ricó, maize and bread which are illustrated for the major towns in Figures 2, 3, and 4 respectively.

Fig 1

Trends for the mean prices of foodstuffs in Cameroon

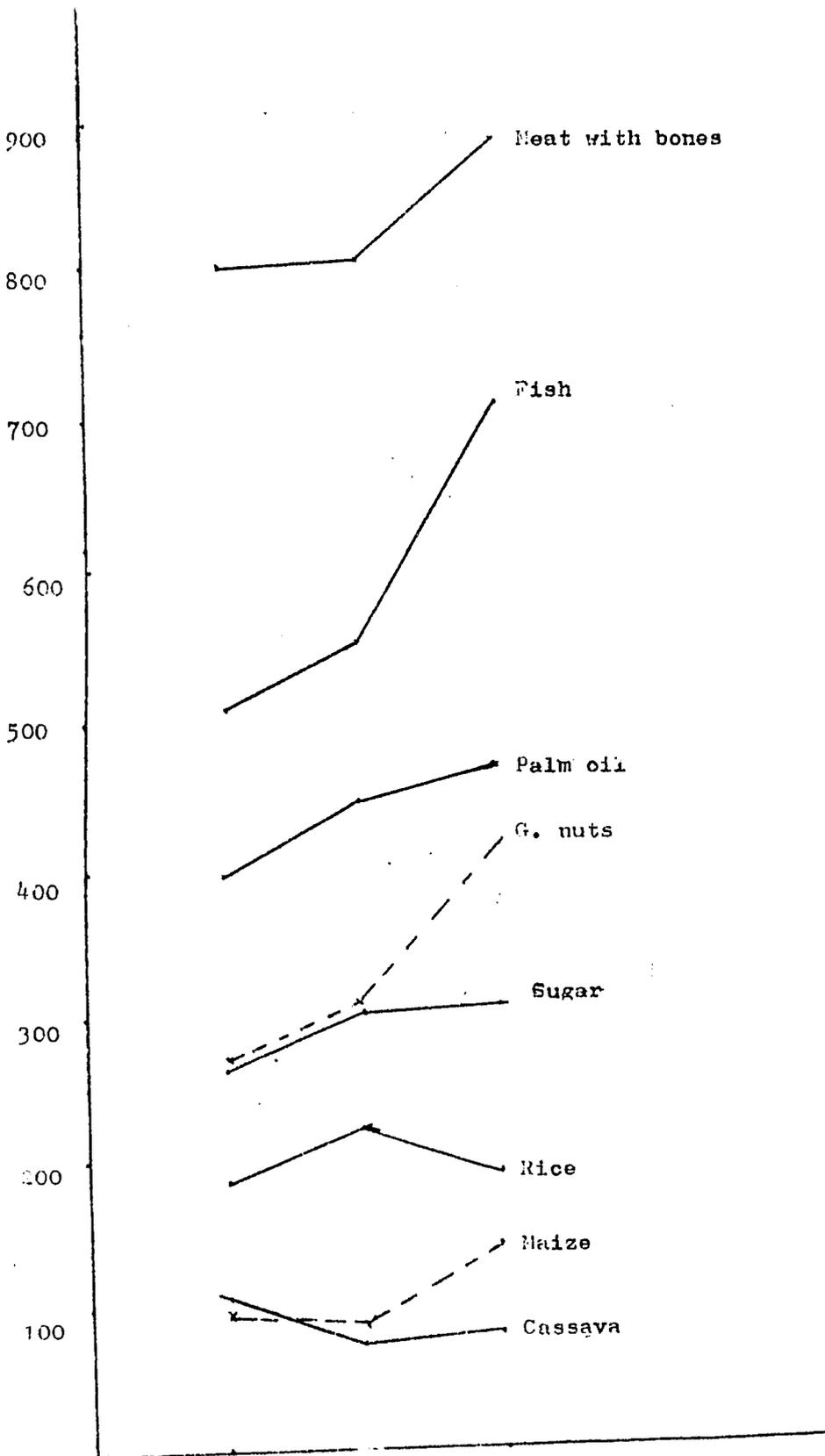


Fig. 2

RICE Retail Price Trends

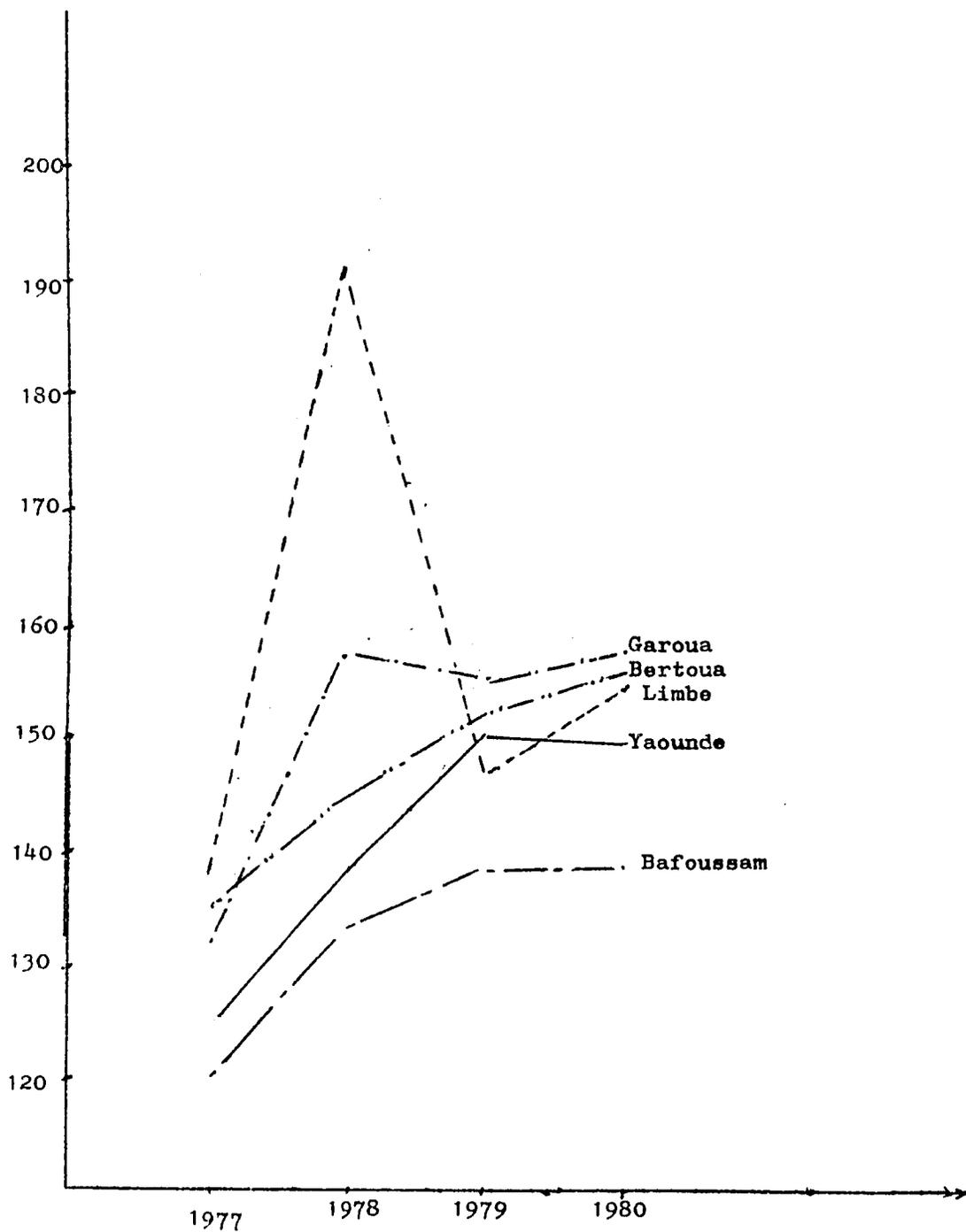


Fig. 3

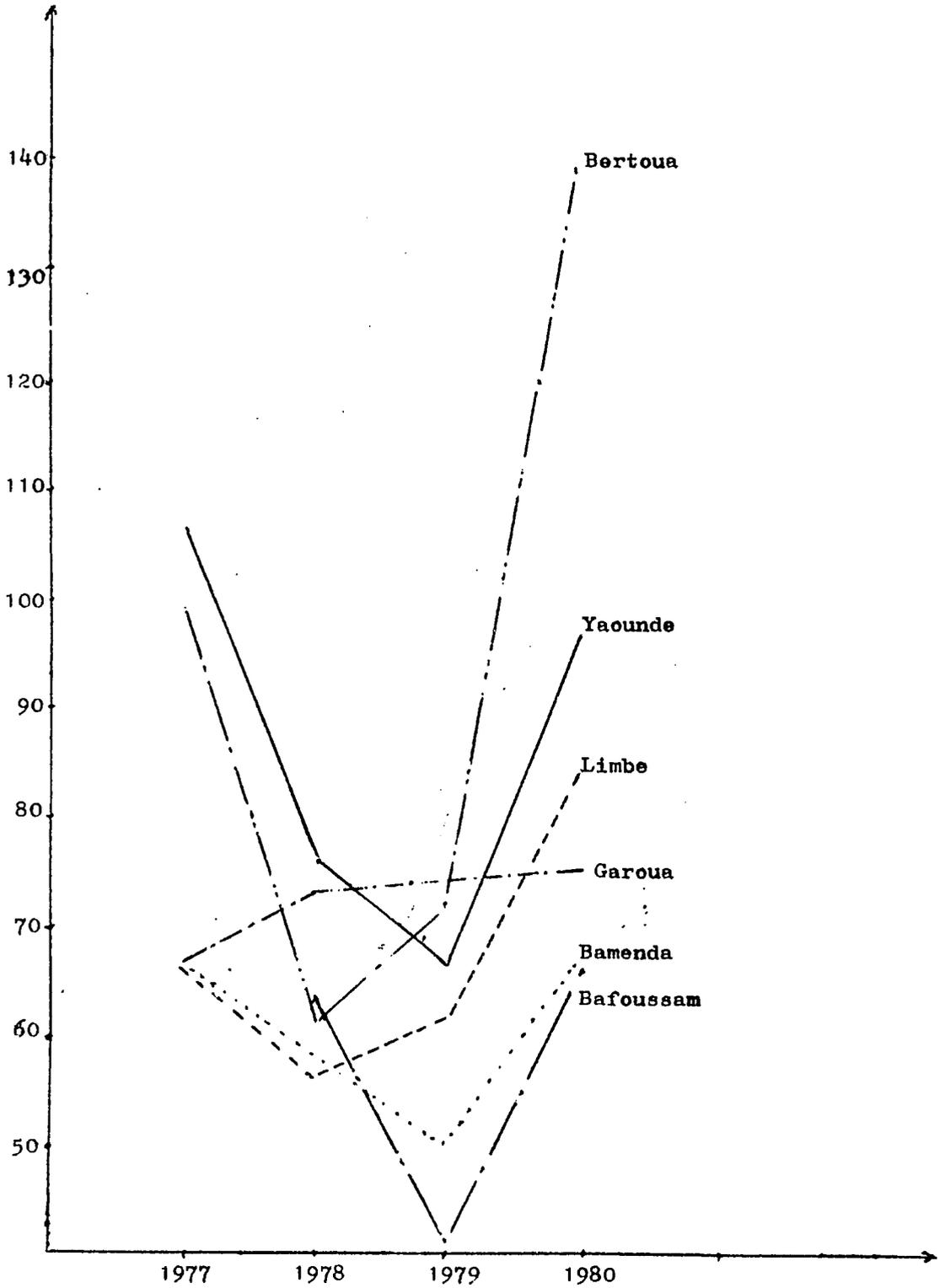
MAIZE Retail Price trends

Fig. 4

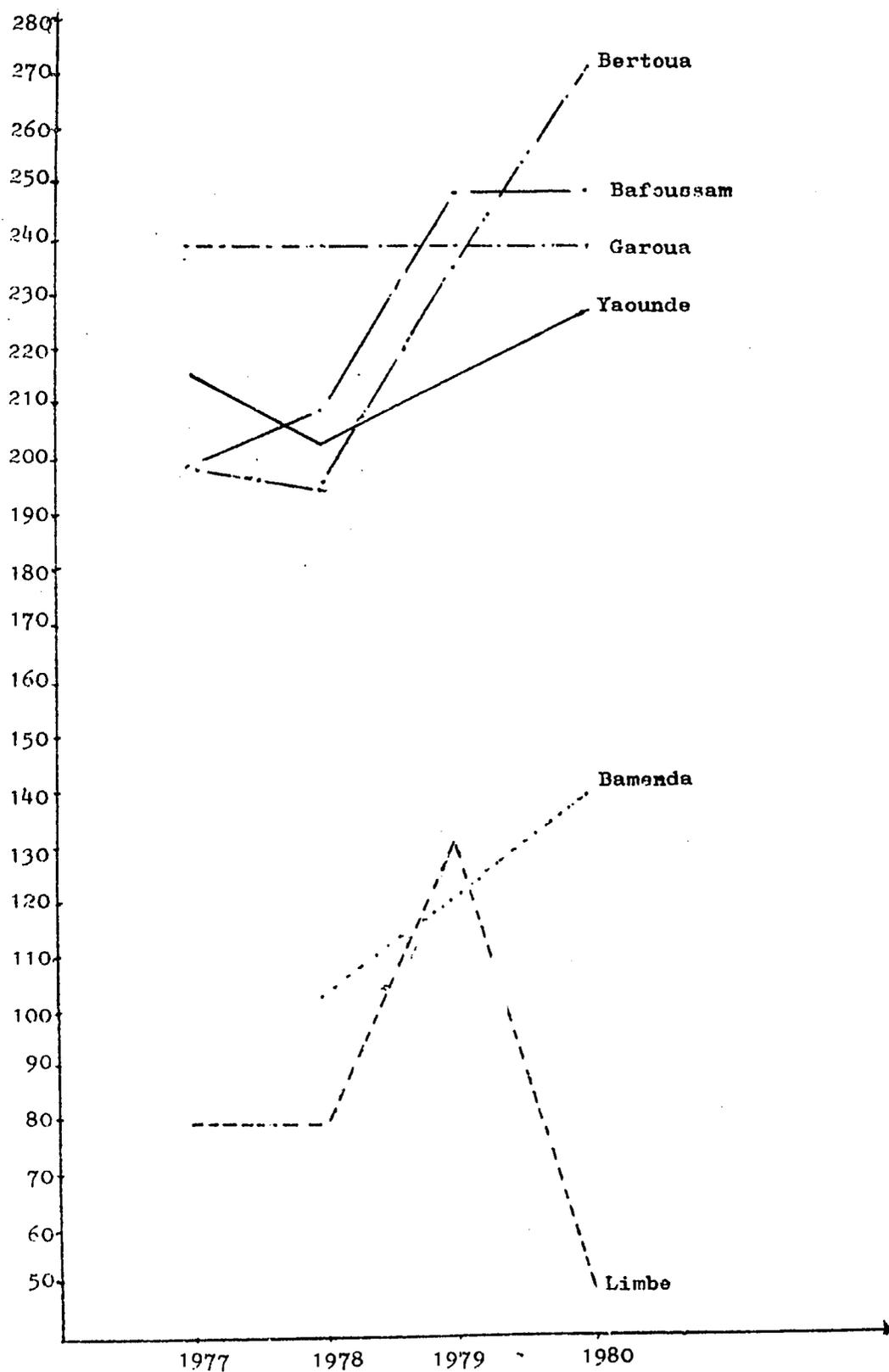
BREAD Retail Price Trends

Table 37 : Mean Prices of Foodstuffs in Cameroon

Commodity	Mean Price (Francs CFA/kg)		
	<u>1983/84</u>	<u>1984/85</u>	<u>1985/86</u>
Palm oil	400	450	470
Rice	182	221	196
Groundnuts	276	315	421
Sugar	274.5	312	313
Cassava tubers	103	173.5	80
Maize grain	97	88.6	140.8
Meat with bones	313.4	314.5	393.65
Fish (fresh)	509	592	718.6

Source : Plan Directeur d'Industrialisation ... 1986, pg.44

For the five towns compared, a gradual rising trend is exhibited. Bafoussam had the lowest retail prices for rice over the period, the prices ranging from 180 francs in 1977 to 196 francs in 1980. It is followed by Yaounde, Bortoua, Garoua and Limbe in that order. In 1977, the price differentials between towns ranged from 120 francs per kilogram in Bafoussam to 191 francs in Limbe. In 1978 they ranged from 133 francs in Bafoussam to as high as 191 francs in Limbe. In 1978 and 1980 Limbe dropped from the 5th to the second and third positions respectively. The prices ranged from 138 francs in Bafoussam to 155 francs in Garoua in 1979, while in 1980 they ranged from 136 francs in Bafoussam to 157 francs in Garoua. The trends and price differentials for maize

differ greatly from those of rice. The trends fluctuate widely for all towns and exhibited the widest price differentials between towns in 1977 and 1980. The prices ranged from 66 francs to 106 francs between Bamenda/Limbe and Yaounde respectively in 1977 and from 65 francs to 133 francs between Bafoussam and Bertoua in 1980.

The price trends and differentials for bread for these towns are completely different from those of rice and maize. Bread prices for Yaounde, Garoua, Bafoussam and Bertoua ranged from 200 to over 270 francs between 1977 and 1980. They are constant for Garoua at 240 francs per kg but exhibited a rising trend for Yaounde, Bafoussam and Bertoua. For Limbe and Bamenda which are both in the English speaking part of Cameroon, the prices were distinctly lower, ranging between as low as 50 francs to 130 francs per kg. In Cameroon, the French speaking zones are known to consume a lot of bread as opposed to the English speaking zones. This explains the price differences which reflect the differences in demand in these zones.

Starchy foods - plantains, cocoyams and cassava, whose trends are presented in Figs 5, 6 and 7, exhibit fluctuating trends. For plantains, the prices are shown to be relatively low and stable for Bamenda and Bafoussam, fluctuating between 18 and 34 francs. They are relatively higher for Bertoua, Limbe and Yaounde, where they fluctuate between 48 and 71 francs.

Fig 5

PLANTAINS Retail Price Trends

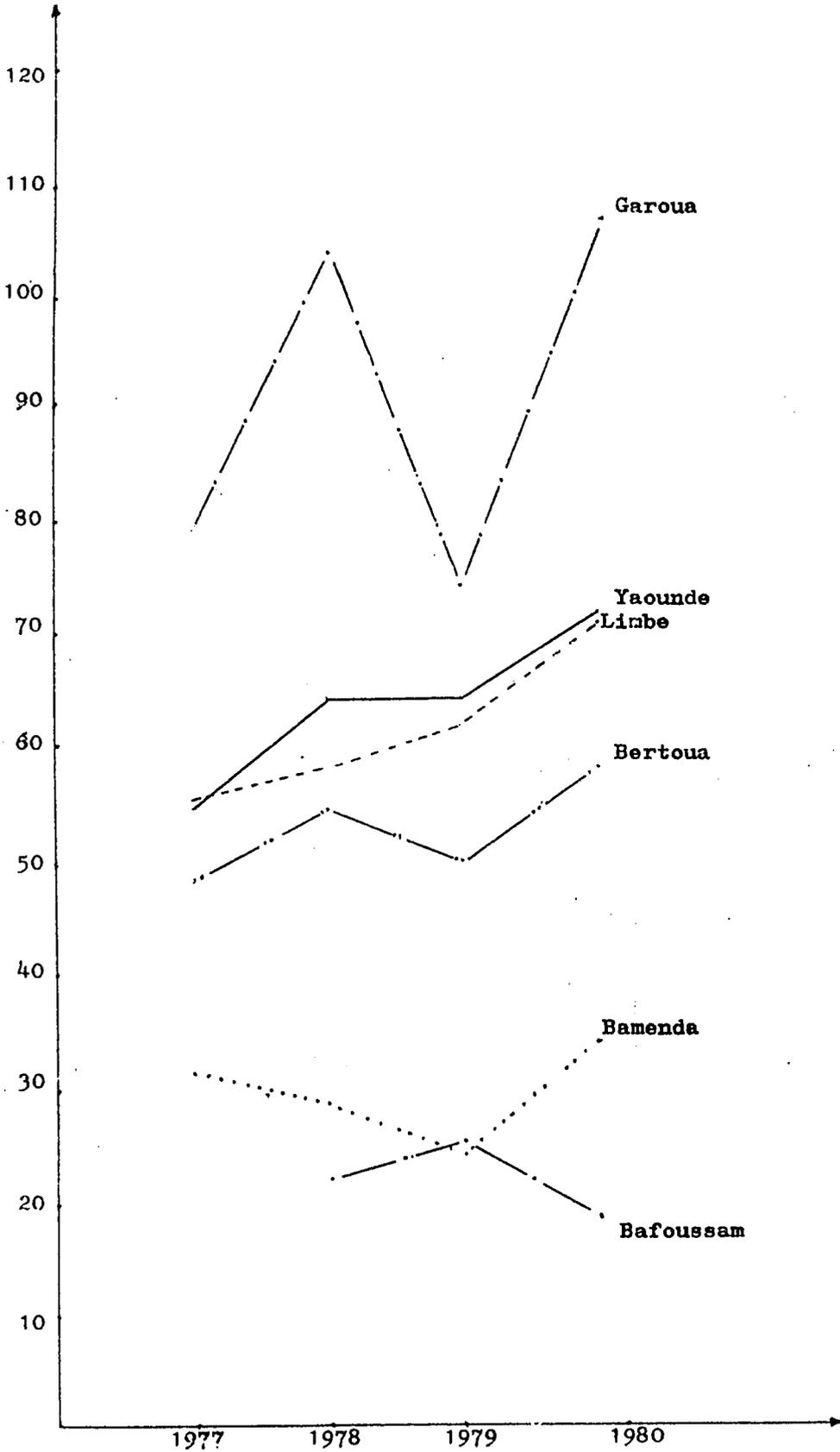


Fig. 6

Price Trends for COCOYAMS.

N.B. No cocoyams for Garoua

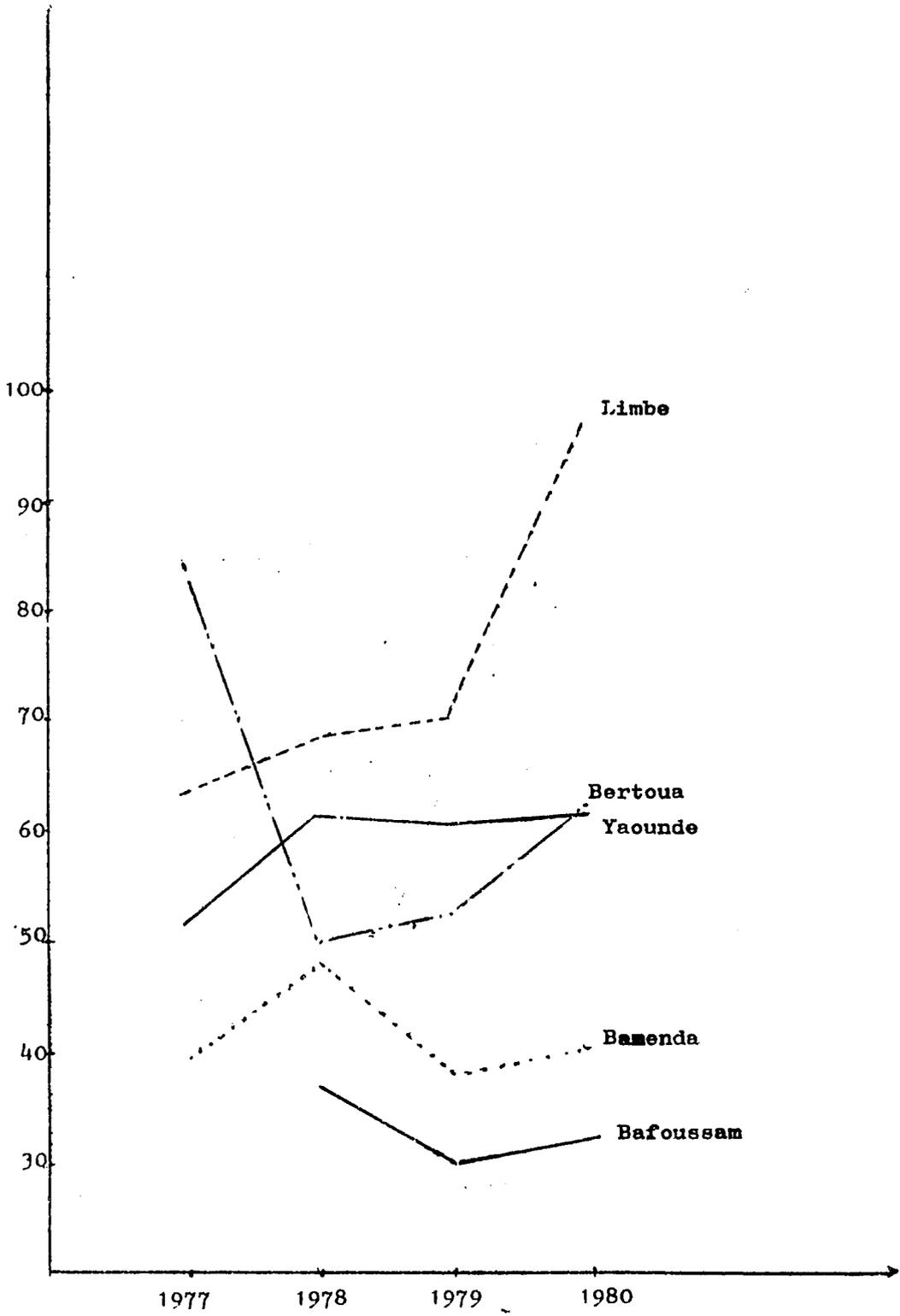
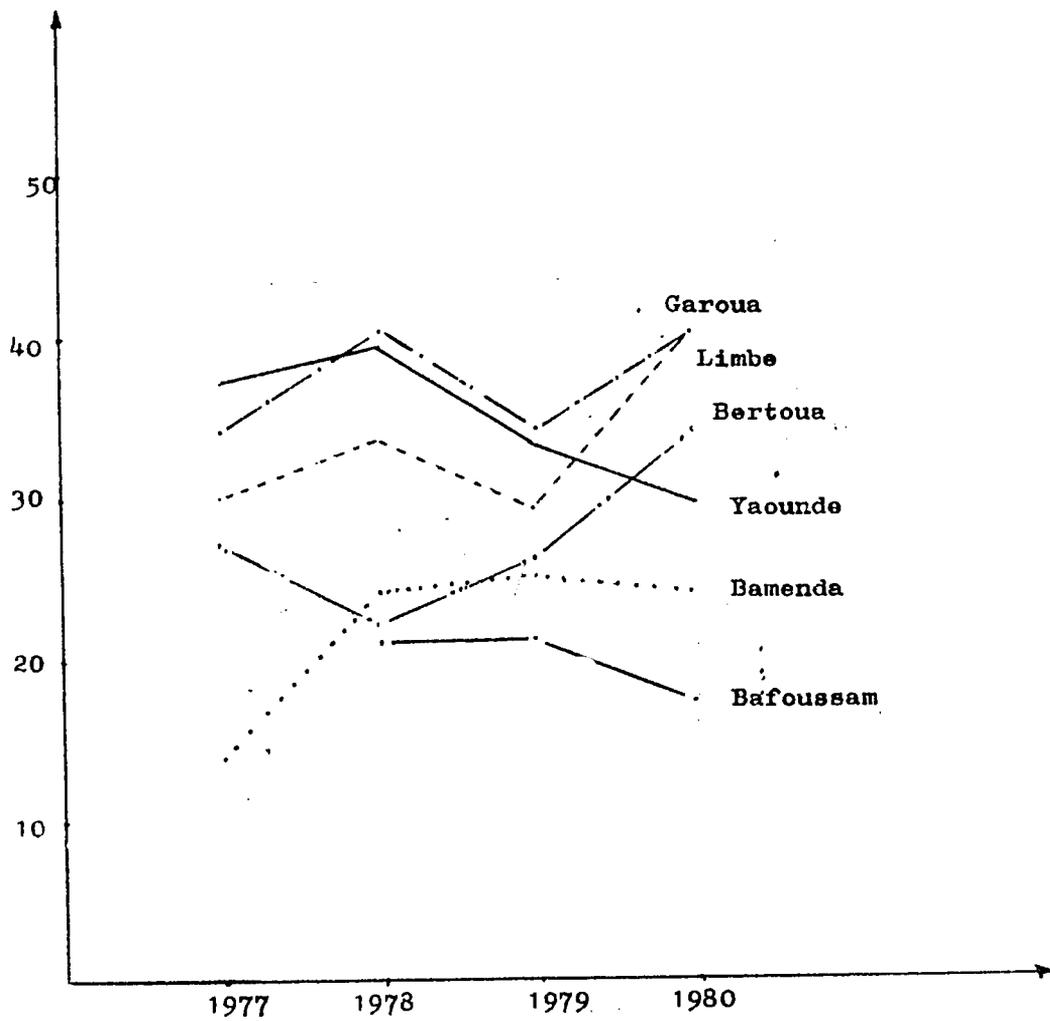


Fig 7

Price Trends for CASSAVA

Garoua stands out distinctly with high prices which fluctuate between 75 and 107 francs per kg. Cocoyams exhibit smaller differences in prices between towns than plantains while cassava exhibits the smallest price differentials both between towns and over time. In 1977 the prices ranged from 17 francs in Bamenda to 51 francs in Yaounde, while in 1980 they ranged from 17 francs in Bafoussam to 40 francs in Limbe and Garoua.

Vegetables like onions and tomatoes as shown in Figs. 8 and 9, also exhibit fluctuating trends. The prices of tomatoes were lowest in Bamenda and Bafoussam where they showed a slow rising trend from 80 to 120 francs per kg., and were highest in Bertoua where they fluctuated between 242 and 305 francs per kg. Onions exhibit increasing price differentials over time and between towns with the widest differences shown in 1980 when the price ranged from about 175 francs in Garoua to almost 500 francs a kg. in Limbe.

Price trends for banana and pineapples are shown in Figs. 10 and 11. The prices are lowest in Bafoussam and Bamenda where their prices range from 25 to 45 francs a kg., and highest in Garoua where their prices fluctuate between 75 and 130 francs per kg.. The price differences are therefore fairly wide between towns.

The price trends for cow meat and pork are presented in Figs 12 and 13. They are rising for all the towns. Yaounde and Limbe exhibit the highest prices in both cases while Bertoua has the lowest prices for cow meat and Bafoussam the lowest for pork. The price differentials

Price Trends for ONIONS

Fig.8

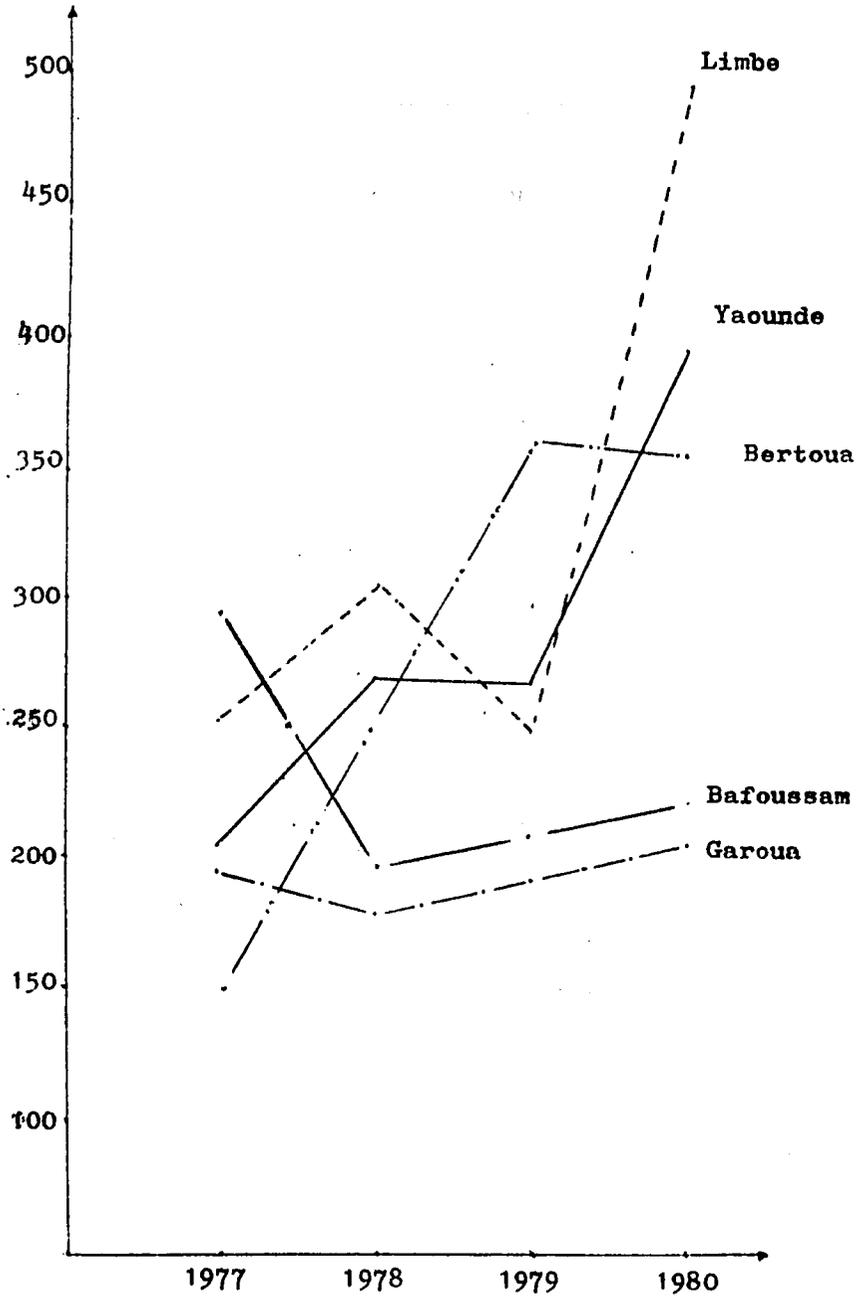


Fig 9

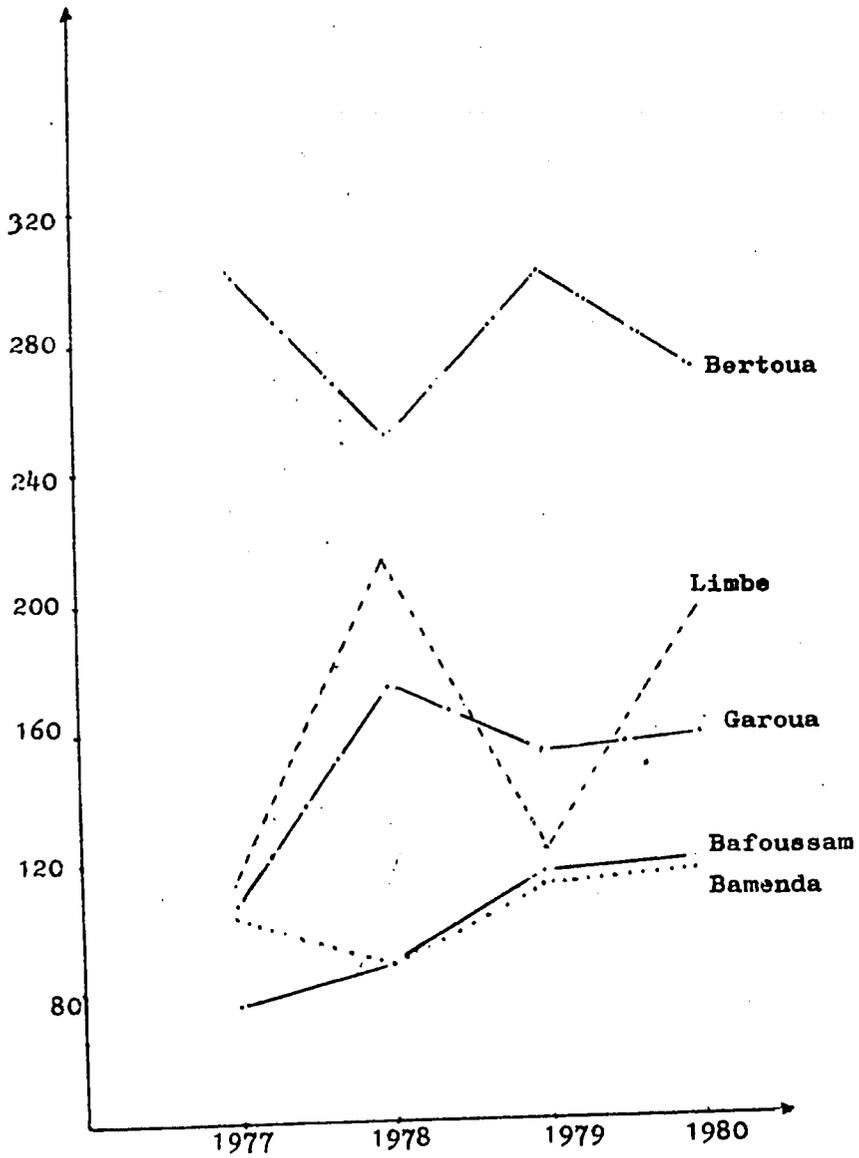
Price Trends for Fresh Tomatoes

Fig.10

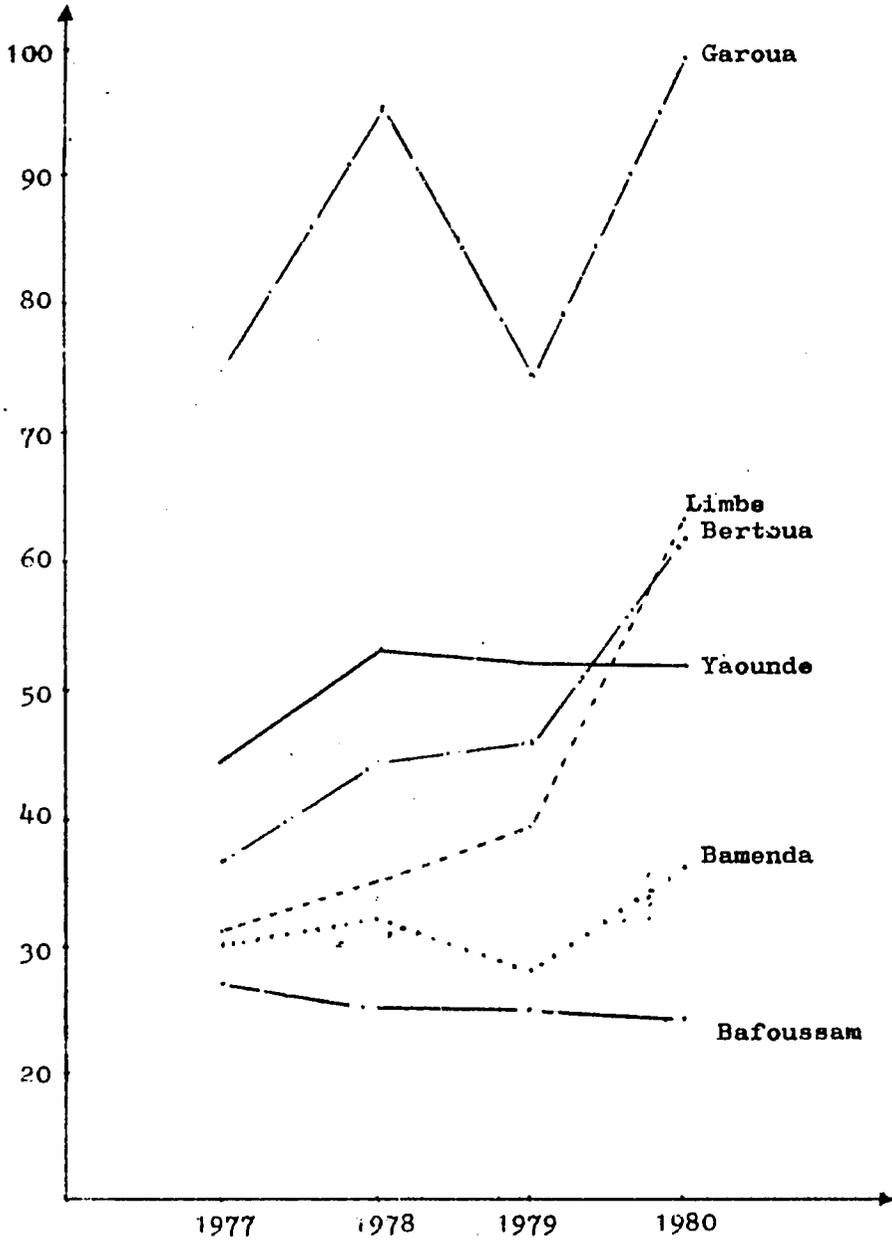
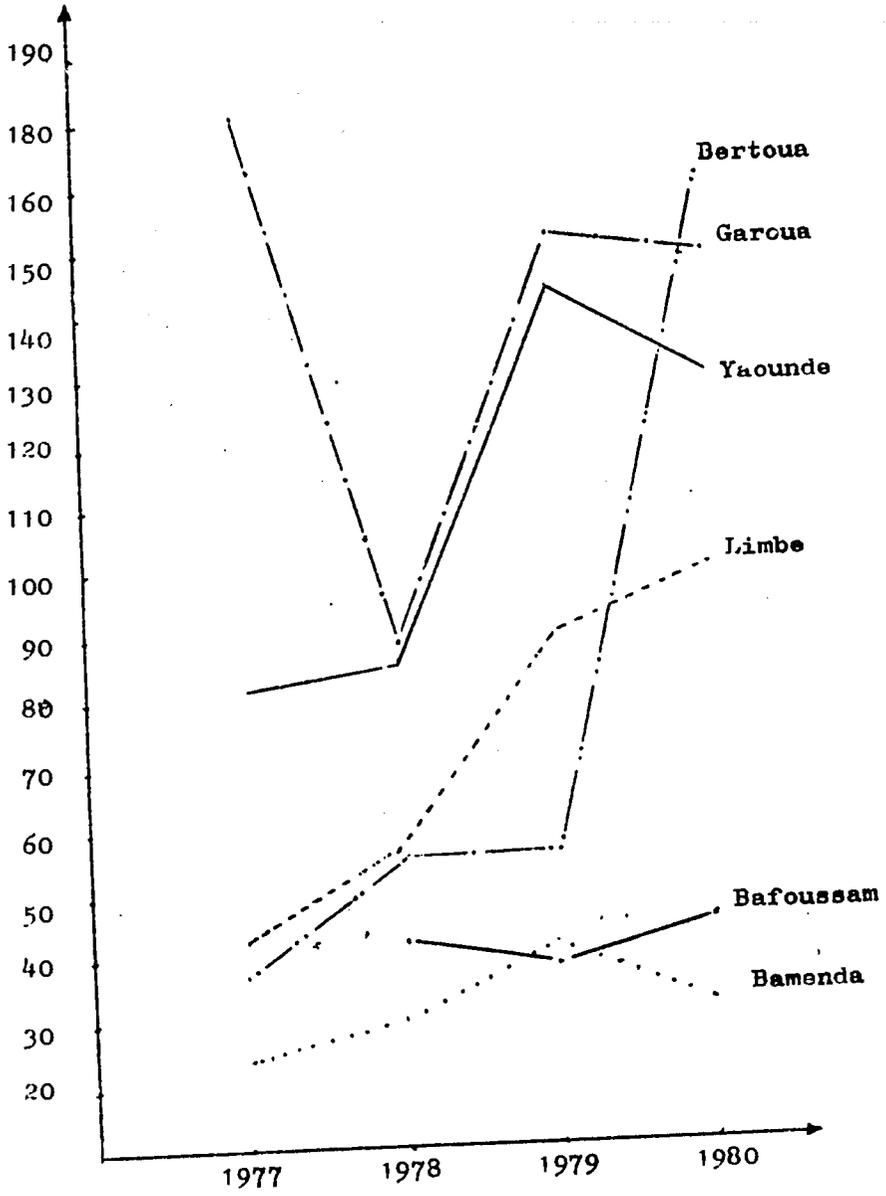
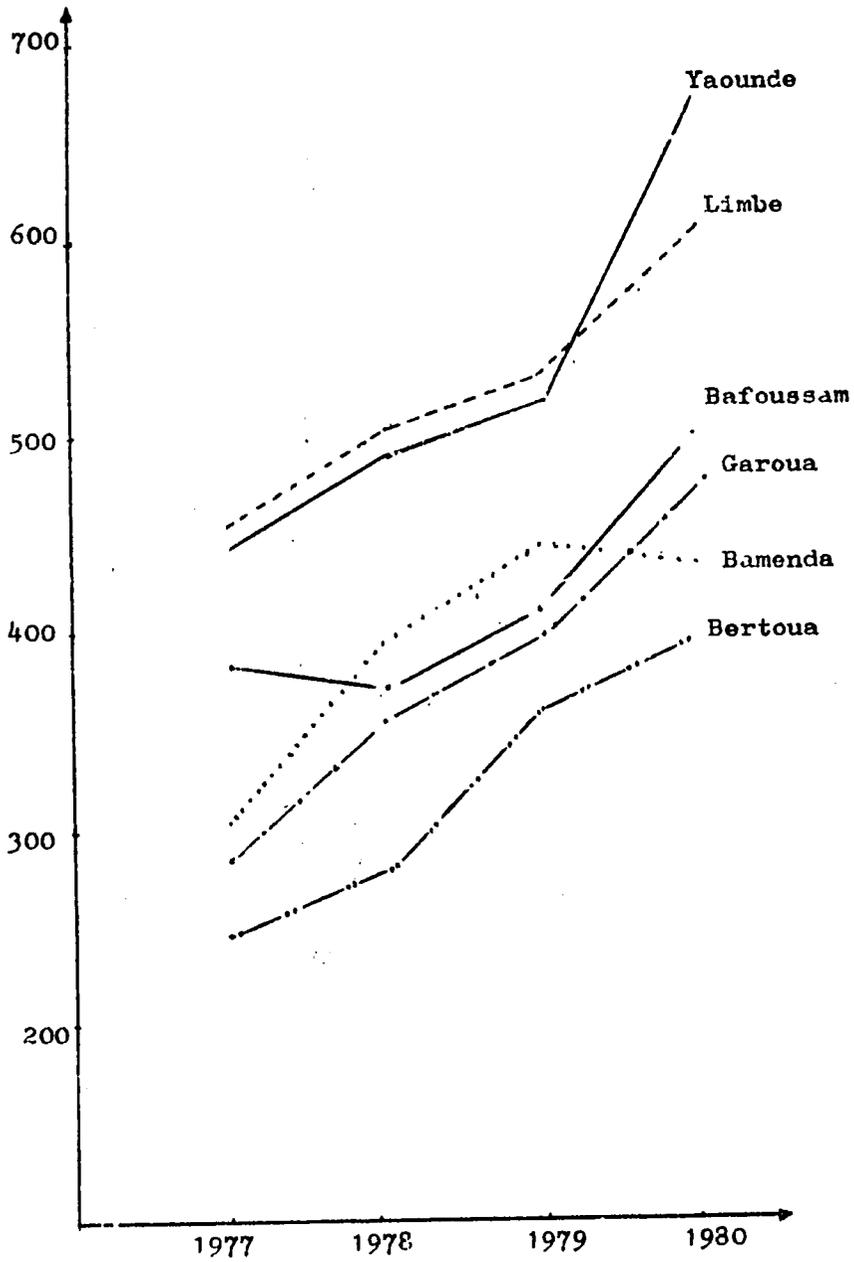
Price Trends for Banana

Fig. 11

Price Trends for PINEAPPLES

Price Trends for Meat with bones

Fig. 12



Price Trends for Pork (with bones)

Fig. 13

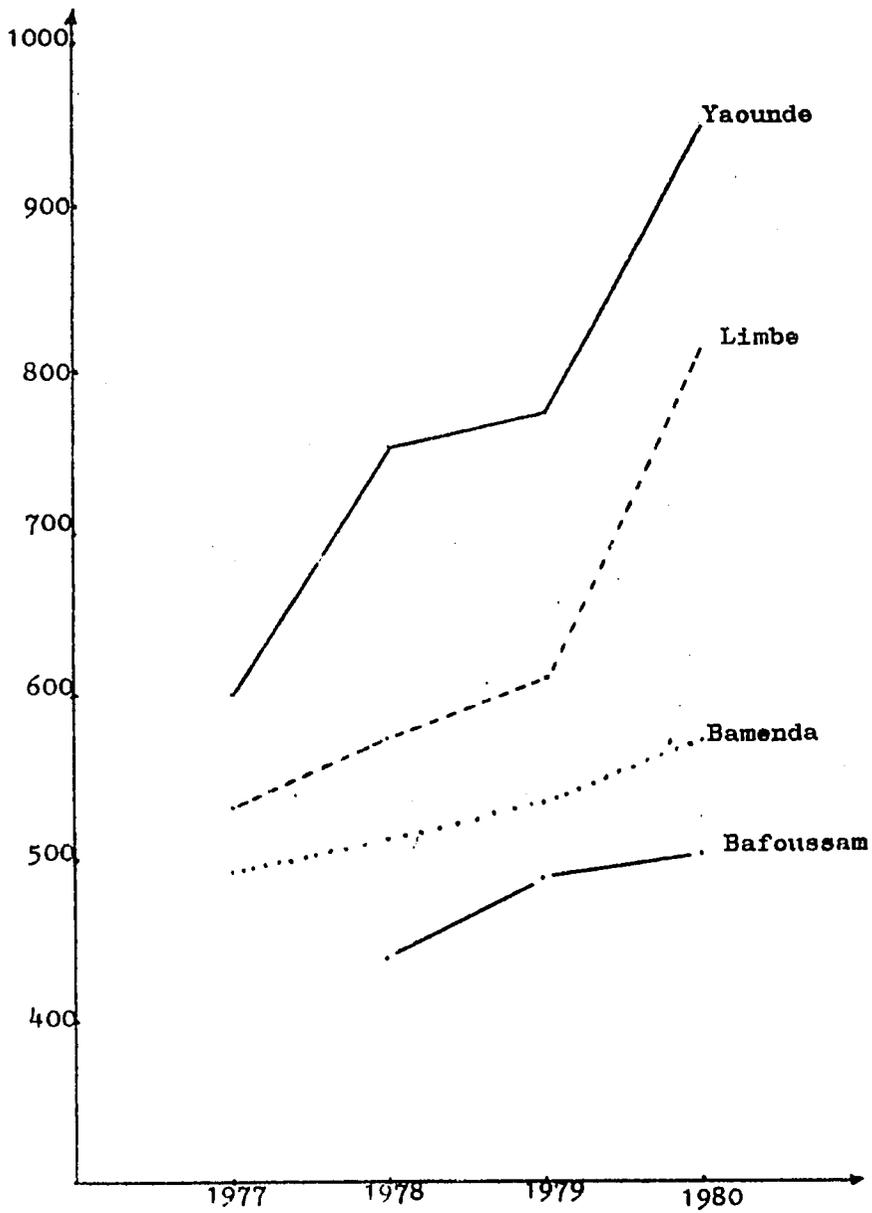


Table 30 : Evolution of Prices in Froude since 1976 - '82 (CFA/kg)

Product	Froude/kg						
	1976	1977	1978	1979	1980	1981	1982
Maize	125	200	122	125	193	215	245
Broad	185	185	204	204	222	222	254
Rice	113	125	190	150	149	151	174
Plantains	29	54	64	64	71	74	82
Cassava	26	33	38	33	39	34	44
Yams	59	54	155	99	123	153	151
Socoyam-Maro	33	51	65	60	61	59	70
Groundnuts	165	220	222	188	229	362	344
Beans & Peas	162	187	400	320	277	301	423
Banana	30	44	53	52	52	51	72
Gil	200	220	250	250	250	200	255
Tomatoes	132	155	182	197	180	190	212
Okro	247	282	255	157	380	302	373
Onions	142	200	207	202	279	251	272
Pineapple	47	61	32	123	130	147	154
Cocoa	150	210	260	290	300	310	330

Source : La Demande et l'offre des Vivres dans les Villes du Centre Sud Pg. 123.

Table 39,

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YAOUMBE - ANNUAL
SELECTED RETAIL FOOD PRICES
(FCFA PER UNIT)

ITEM	UNIT	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
RICE-Bulk	KG	143	118	125	138	235	149	161	174	170	185	198	** 198
CORN-grain	KG	55	76	103	76	66	96	131	126	160	141	171	161
BREAD-24Cgr	PIECE	47	52	54	51	54	57	65	80	71	66	65	60
FLOUR-Bulk	KG	106	100	108	114	123	126	140	178	165	184	201	188
PLANTAIN	KG	33	29	54	64	54	71	74	81	132	123	92	103
MACLEO	KG	32	32	51	61	60	61	69	75	113	88	67	71
MANIOC-tubor	KG	24	26	37	39	33	29	34	45	75	60	55	60
BEANS-dry	KG	106	152	187	241	328	277	381	418	401	523	587	445
TOMATO-local	KG	124	132	135	188	197	180	180	213	206	228	287	301
BANANA-sweet	KG	33	30	44	53	52	52	51	71	94	102	99	105
AVACOT	KG	74	97	91	103	123	131	140	186	253	212	241	308
GROUNDNUTC	KG	184	165	219	214	188	289	362	355	313	379	419	333
PALM OIL	LITER	202	200	219	250	258	250	250	256	348	480	398	400
MILK-cons	LITER	149	151	155	170	177	188	226	247	249	269	380	405
BEEF/bone	KG	304	363	442	488	515	675	763	892	920	823	932	
CHICKEN-live	KG	500	517	625	600	600	625	818	1219	1072	1221	1246	963
BEER	BOTTLE	79	80	80	98	108	106	116	128	141	140	148	160
WHISKY	BOTTLE	1717	1717	1811	1897	1897	1928	1875	1934	2541	3279	3314	3280
INDEX (1966													
GENERAL	INDEX	177	194	222	251	267	293	323	366	420	476	522	558
FOOD	INDEX	188	211	252	288	322	329	372	443	508	531	528	525

SOURCE : BULLETIN MENSUEL DE STATISTIQUE, DIRECTION DE LA STATISTIQUE ET DE LA COMPTABILITE NATIONALE, MINPAT, VARIOUS ISSUES. ** FIRST QUARTER AVERAGE.

Table 40 : Evaluation of Real Prices for Foodstuffs in Yaounde, 1976-82 with 1976 Base Year

Product	DEFLATED PRICES											
	1975	1976	1977	1978	1979	1980	1981	1982				
Maize	100	125	204	114	173	130	127	133				
Bread	-	105	163	140	150	149	135	159				
Rice	143	118	111	95	110	100	92	94				
Plantains	31	29	48	44	47	49	45	44				
Cassava	20	26	31	26	24	19	21	24				
Yams	53	59	74	92	73	83	93	82				
Cocoyams	26	33	45	45	44	41	42	42				
Groundnuts	182	165	195	132	139	194	219	186				
Beans & Peas	136	162	165	274	24	126	230	229				
Banana	25	30	39	36	38	35	37	39				
Oil	207	200	194	171	189	168	152	138				
Tomatoes	123	132	118	125	145	121	109	115				
Okra	148	247	202	175	123	255	183	202				
Onions	163	142	160	142	148	187	152	147				
Pineapples	54	47	72	56	90	87	89	89				
General price Index	100	100	113	146	136	149	165	185				

Source : Deflated prices obtained by dividing prices in Table 38 by the general price indices.

Table 41.

- 107 a -

YIQUIDE - ANNUAL
SELECTED BASIC FOOD PRICES
(FORM PER UNIT DEFLATED BY GENERAL INDEX)

ITEM	UNIT	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
RICE-bulk	KG	81	61	56	55	28	51	50	48	40	39	38	**36
CORN-grain	KG	31	39	48	30	25	33	41	34	37	30	32	29
BREAD-240gr	PIECE	27	27	24	20	20	19	20	22	17	14	12	11
FLOUR-bulk	KG	50	52	49	45	46	43	43	49	39	39	38	34
PLANTAIN	KG	19	15	24	25	24	24	23	22	31	26	17	19
MACADAM	KG	18	17	23	24	22	21	21	20	26	12	13	13
MANIOC-tuber	KG	14	13	17	16	12	10	11	12	18	13	10	11
BEANS-dry	KG	50	84	84	136	123	95	118	114	94	110	111	80
TOMATO-local	KG	70	68	61	75	74	61	56	58	48	48	54	54
BANANA-sweet	KG	19	15	20	21	19	18	19	19	22	21	19	19
AVOCCO	KG	42	50	41	41	46	45	43	51	59	45	46	55
GROUNDNUTS	KG	104	83	99	95	70	99	112	97	73	80	79	60
PALM OIL	LITER	114	103	99	100	97	85	77	70	81	101	75	72
MILK-cons	LITER	84	73	70	68	66	64	70	67	58	57	72	73
BEER/bon	KG	172	187	199	194	193	230	236	244	215	173	177	73
CHICKEN-Live	KG	282	266	282	239	225	213	253	333	250	257	236	173
BEER	BOTTLE	45	41	36	39	40	36	36	35	33	29	28	29
WHISKY	BOTTLE	970	885	816	756	710	658	580	528	594	710	628	588
INDEX (1966)													
GENERAL	INDEX	177	194	222	251	267	293	323	366	428	476	528	558
FOOD	INDEX	188	211	259	288	382	329	372	443	508	531	523	525

SOURCE: BULLETIN MENSUEL DE STATISTIQUE, DIRECTION DE LA STATISTIQUE ET DE LA COMPTABILITE NATIONALE, MINPAT, VARIOUS ISSUES. ** FIRST QUARTER AVERAGE

between towns ranged from about 400 francs in Bertoua to 775 francs in Yaounde for cow meat in 1980, and from 480 francs in Bafoussam to 950 francs in Yaounde for pork the same year.

3.6.3. Nominal and Real Price Trends

The rest of the trend analysis that follows utilizes price data for the capital city of Yaounde from two sources. Table 38 presents the evolution of nominal food prices for Yaounde for the period 1976 to 1982 while Table 39 presents the similar information from 1975 to 1986 from a different source. Graphical presentation for each commodity allows for a more vivid analyses of the situation.

A general look at the figures in the two tables reveals a price hike for certain commodities. Prominent among these are pineapples whose price (Table 38) shot up 3.5 times during the period, and beans, yams, bananas and plantains, whose prices went up about 2.5 times cocoyams, groundnuts, and cassava had moderate increases in their prices.

A crop by crop nominal and real price analysis is presented below. Table 40 presents deflated prices for 1976 to 1982 (deflated from Table 38) while Table 41 presents deflated price from Table 39. Even though the figures in Tables 38 and 41 are more up-to-date, the analysis of real prices is based on the figures in Table 40 because it provides base year prices with which the deflated prices could be compared. However, the four Tables involved have been observed to exhibit similar nominal and real price trends for the various crops.

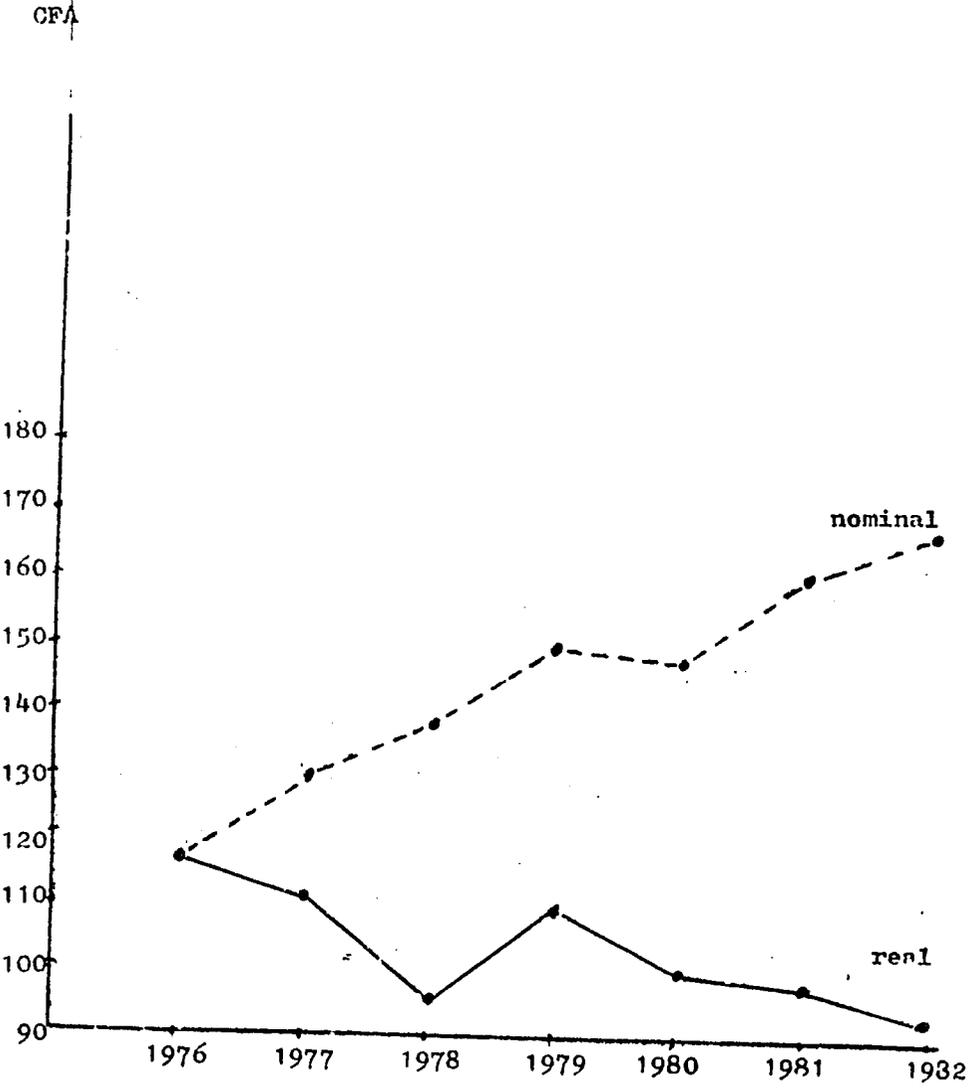
Fig. 14 compares the real and nominal price

Fig. 14 compares the real and nominal price trends for maize from 1976 to 1982 with 1976 as the base year. The graphs show a widely fluctuating but rising trend. There are marked differences between the real prices and the price in 1976 - the base year. Factors other than inflation therefore exist to explain the price differentials for maize over time. Such factors have been identified for foodstuffs in the former Central South province where Yaounde is located. They include (i) demand, which has been noted to exhibit an exponential progression, (ii) supply, (iii) competition with other food products from outside the province, and (iv) the then Marketing Cost (mainly transportation when the state of the road linking the province with other producing areas was very poor) [1]. Items (i) (ii) and (iv) appear to hold true in the case of maize.

The trends for rice and bread shown on Figs. 15, and 16 respectively are similar. Their nominal prices exhibit a general rising trend with sometimes slight fluctuations. Their deflated prices tend to be lower than the base year price and to exhibit an almost horizontal trend. Their price changes could therefore be explained by factors other than inflation. Actually, the prices of these products are state regulated in one form or the other. Rice is either imported or is produced locally by parapublic organisations. Both sources of supply

Nominal and Real Retail Price Trends for Rice

Fig.



Nominal and real Price Trends for Bread.

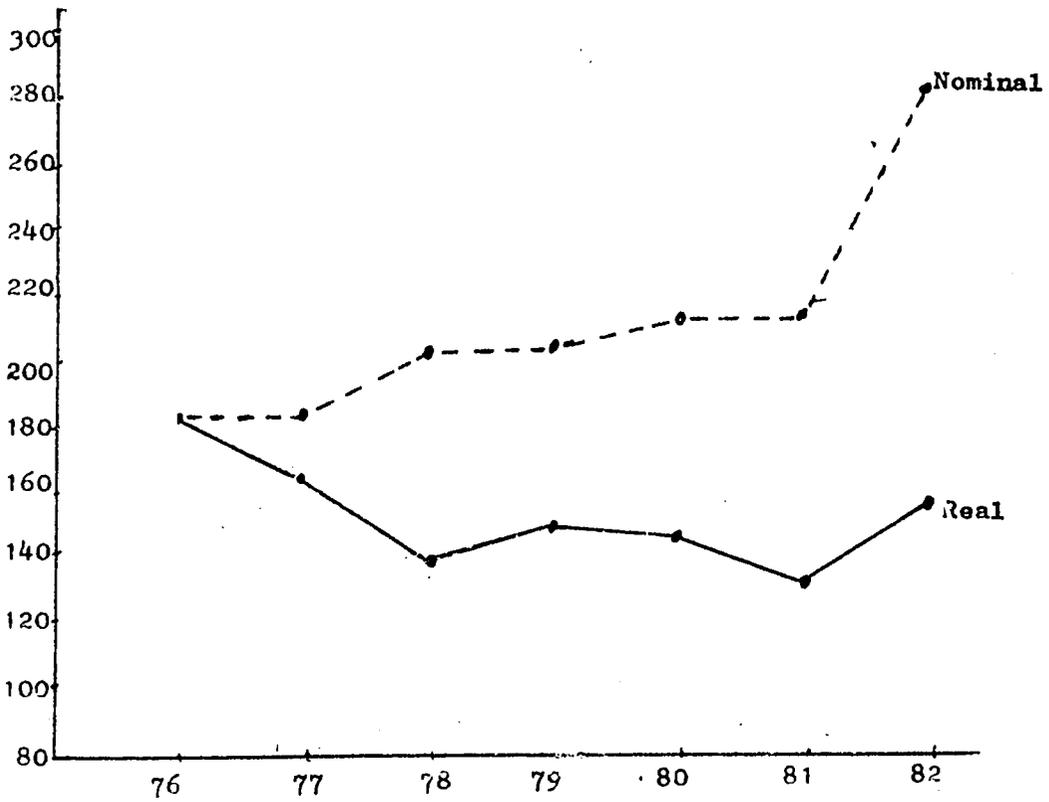
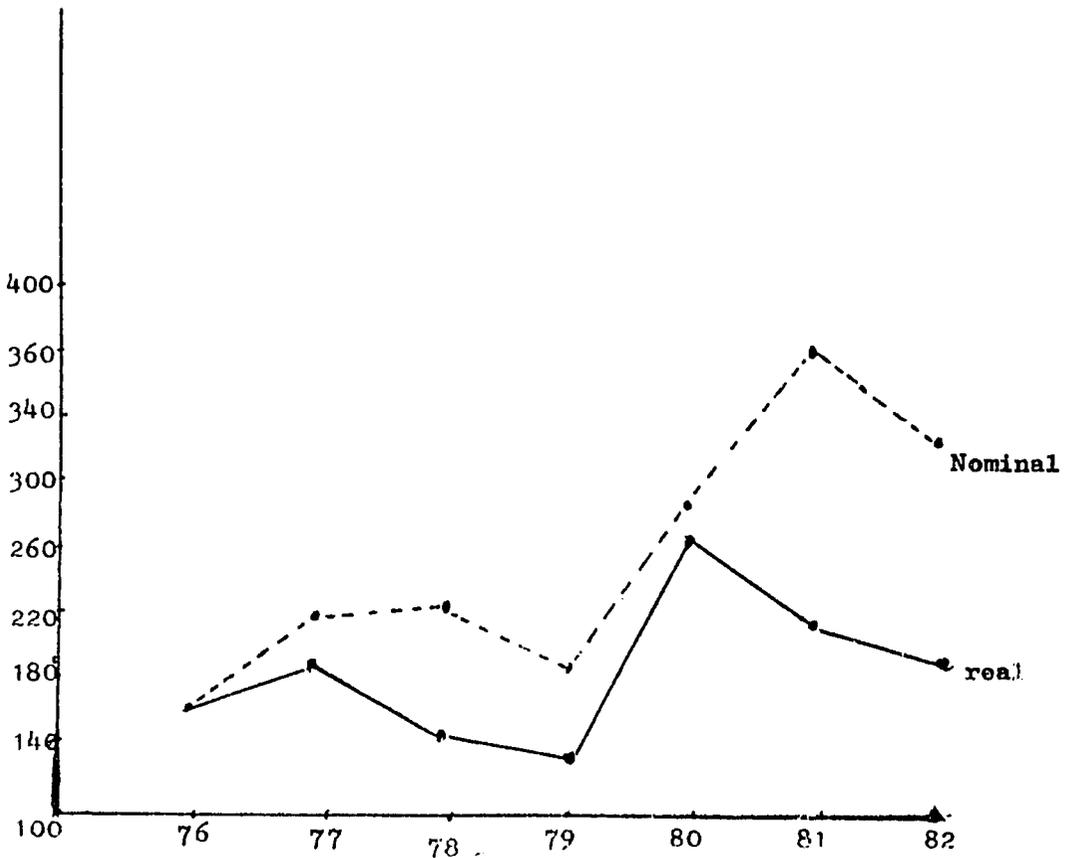


Fig.17

Nominal and real Price Trends for Groundnuts



are subjected to state control. Wheat from which bread is made is imported, bread is a processed product, and prices of both commodities are controlled by the State.

The trends for groundnuts (Fig. 17) and bean/peas (Fig. 18) are similar in that both their nominal and real prices exhibit fluctuations but the real prices are by far different from the base year prices. Bean prices appear to be influenced by seasonality of production in addition to inflation. On the other hand, the real prices of groundnuts exhibit a different trend and are not significantly different from the base year prices. Their nominal prices are therefore affected only by inflation.

The prices of starchy foods - plantains, cassava, yam and cocoyams, are illustrated in Figs 19, 20, 21 and 22 respectively. Their trends are like those of banana and pineapples. The gaps between the nominal and real trend lines are relatively small, with the nominal prices exhibiting a gentle general rise while the deflated prices exhibit an almost horizontal trend and are not significantly different from the base year prices. The changes in the nominal prices over time can therefore be attributed to inflation. The price trends for tomatoes (Fig. 23) and okro, (Fig. 24) are similar in that their trends tend to fall below the base year prices. The real and nominal prices for okro however, exhibit rather wide fluctuations as opposed to those for tomatoes. The deflated prices for tomatoes are not significantly different from the base year price but those for okro are definitely below

Fig. 18 Nominal and Real Price Trends for Beans/Peas

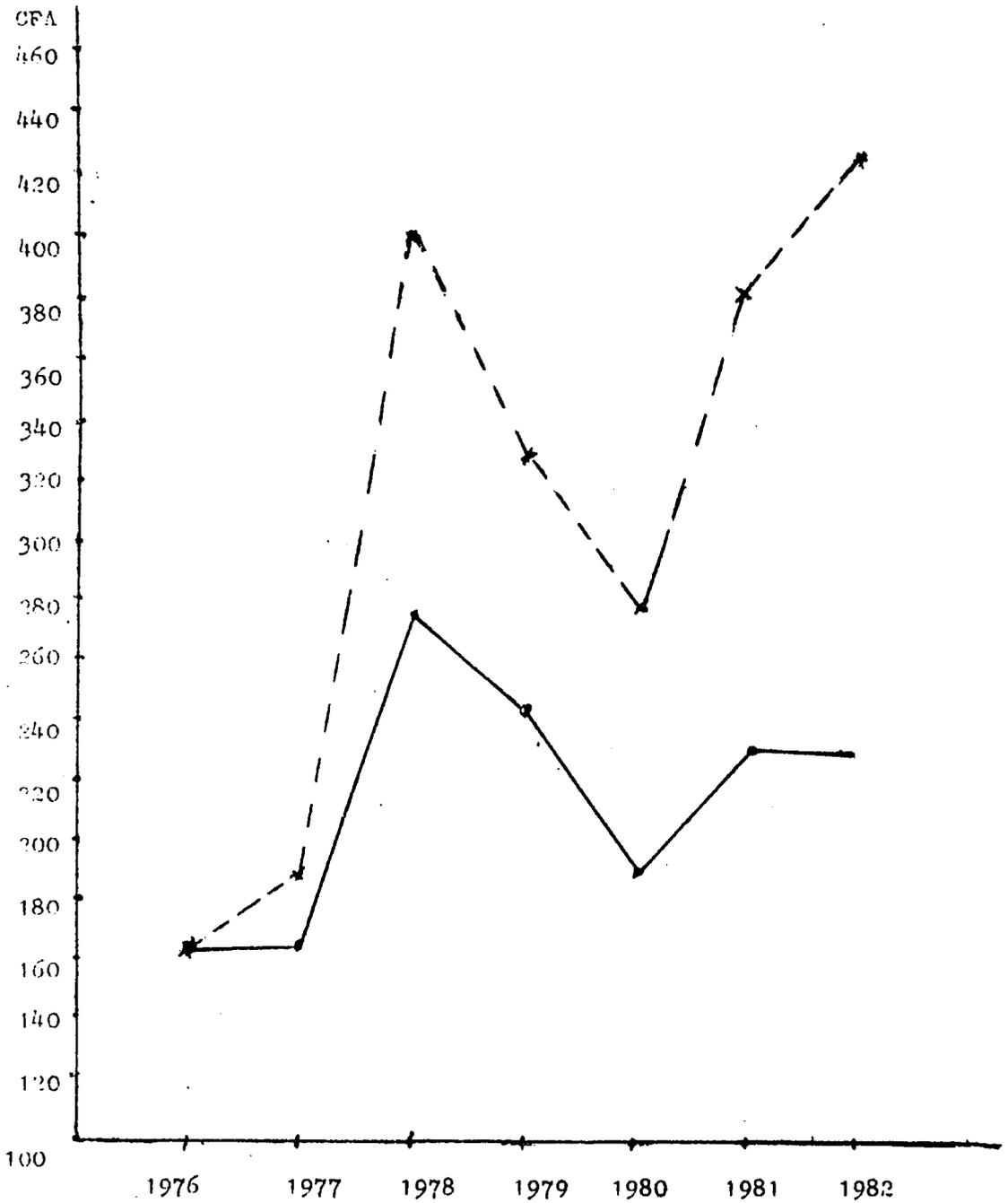
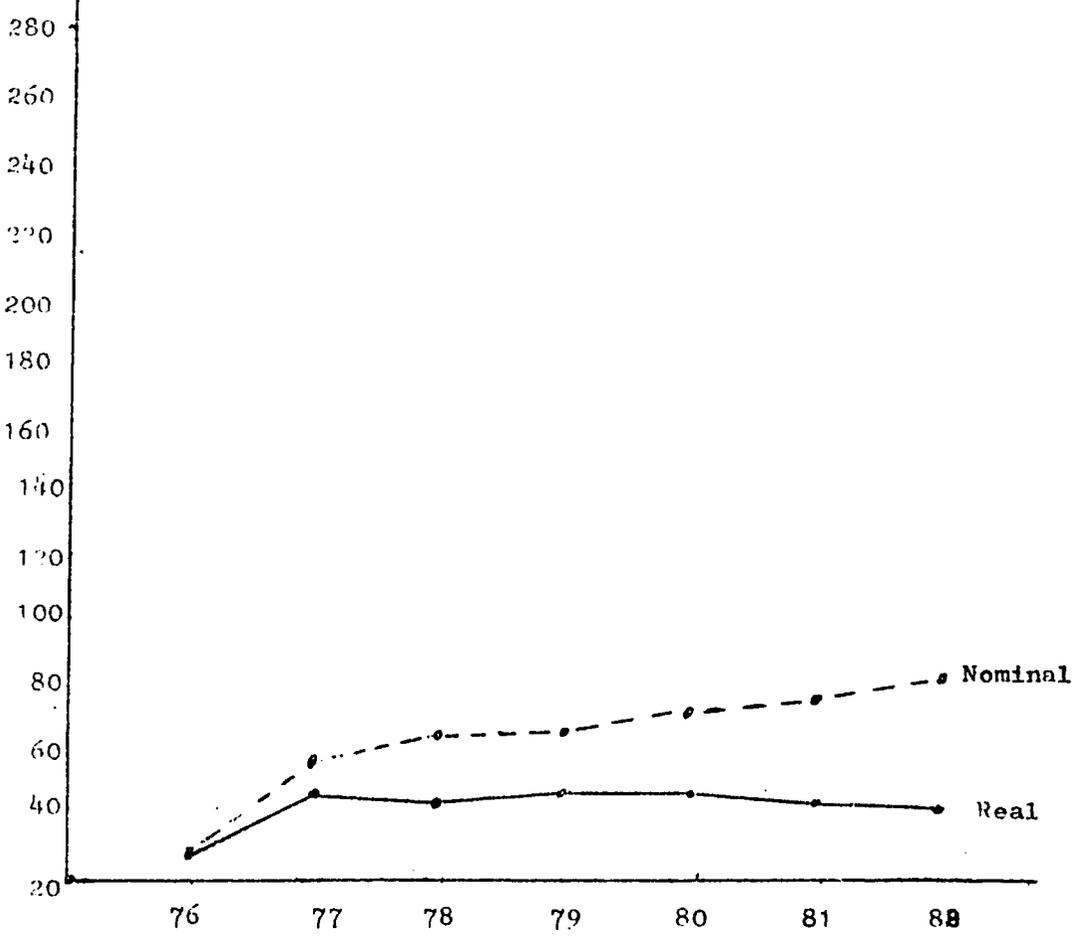


Fig. 17 CFA Nominal and Real Price Trends for Plantains



Nominal and Real Trends for Cassava

Fig. 20

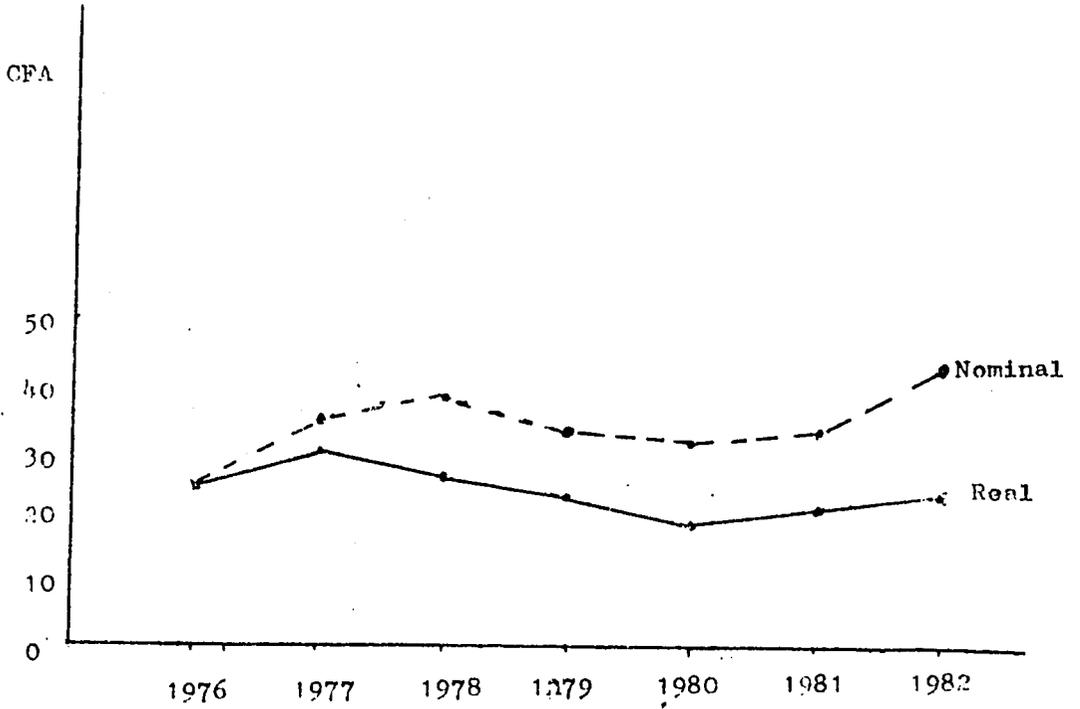


Fig. 21 Nominal and real price trends for Yams

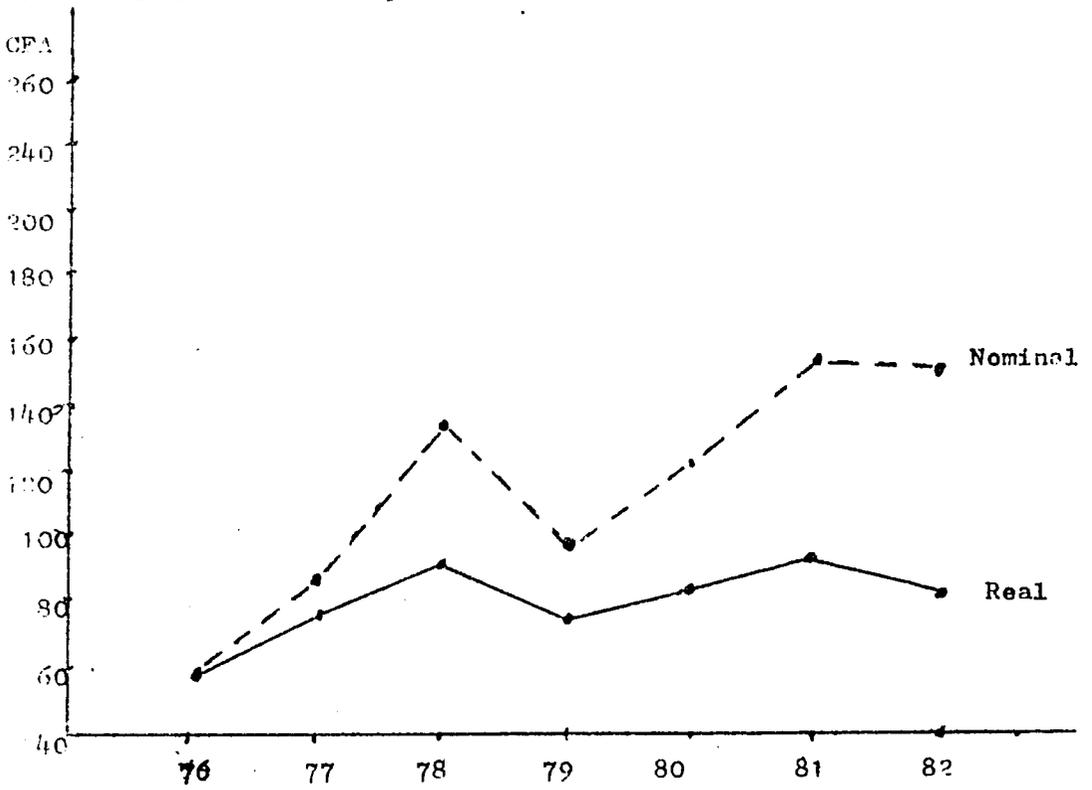


Fig. 22 Nominal and Real price trends for Cocoyams

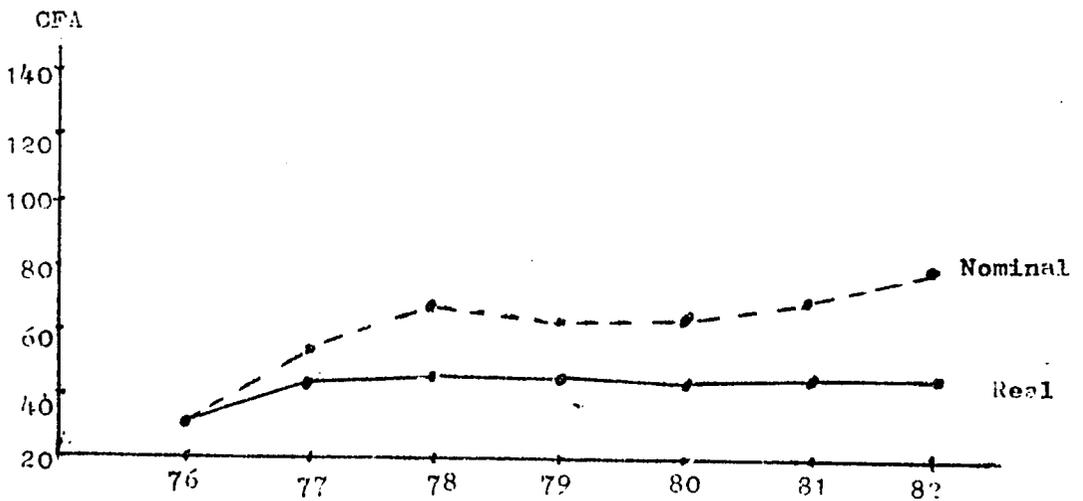


Fig. 23

Nominal and Real price trends for tomatoes

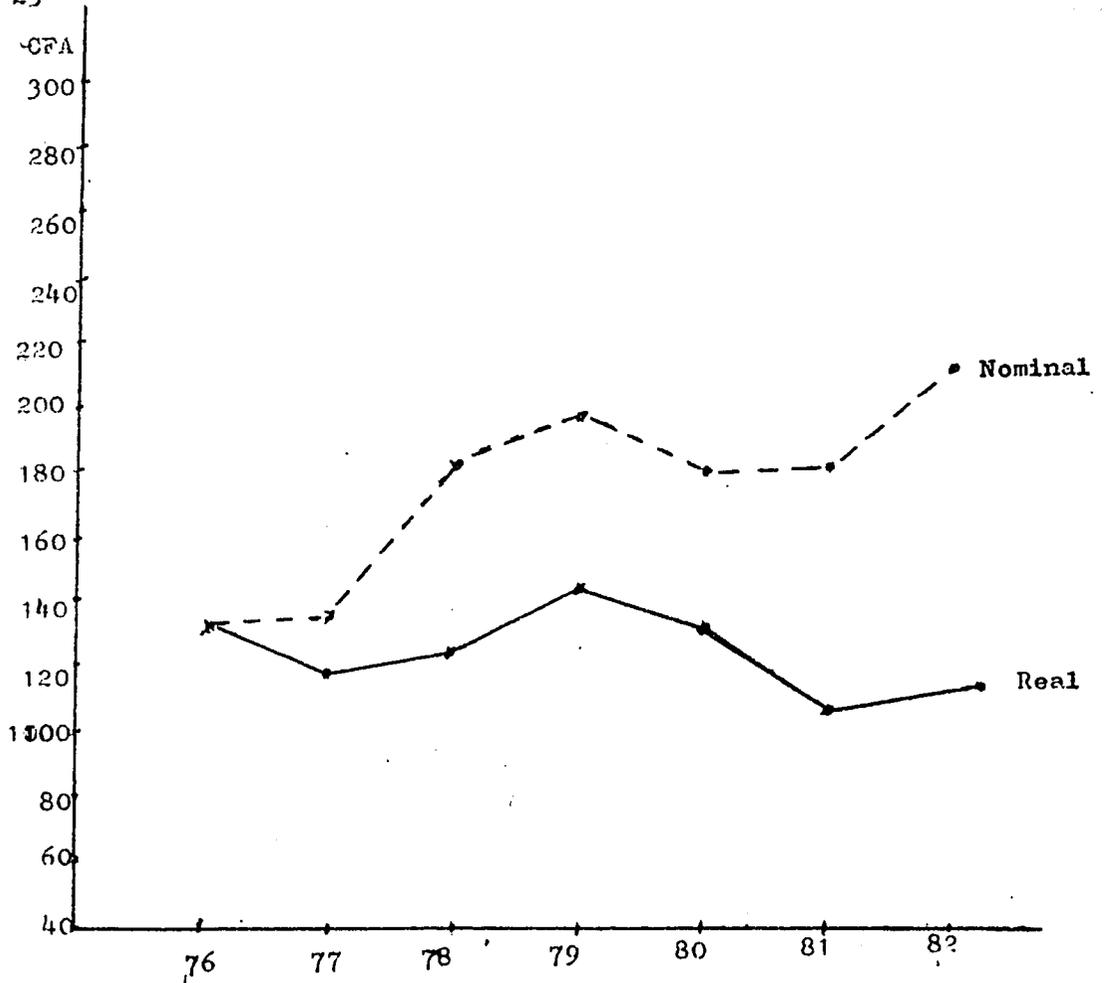
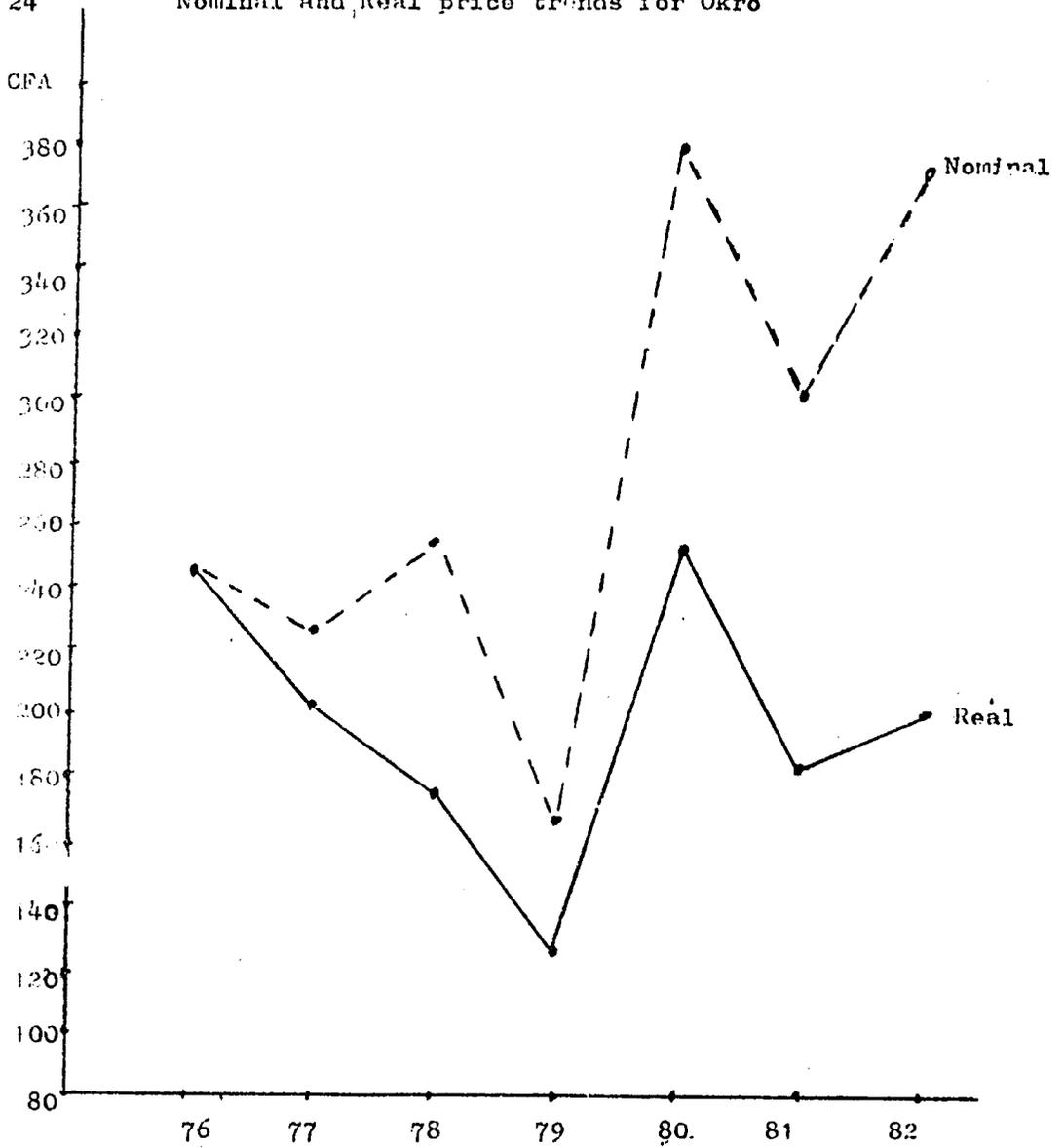


Fig. 24

Nominal and Real price trends for Okro



the base year price. Consequently, while the price changes for okro could be said to have been caused by inflation and seasonal variations, those for tomatoes appear to be affected only by inflation.

Fruits like banana and pineapples whose price trends are illustrated in Figs 25 and 26 respectively, exhibit similar trends in that the trend for the nominal and real prices in each case are similar. They are almost horizontal for banana while for pineapples they exhibit a slightly fluctuating and gentle rising trend. The differences between the nominal and real prices are relatively small for banana. They are slightly wider for pineapples, and in both cases the deflated prices do not vary much from the base year prices. Inflation is therefore the principal cause of the changes in their nominal prices over time.

In conclusion, it does appear that factors other than inflation influence the price changes of only cereals, some legumes and some vegetable items. Price changes over time for the rest of the food items discussed can be basically attributed to inflationary forces.

3.5.4 Future Trends for Foodstuff Prices in Yaounde

As already mentioned, future demand, future supply, expected competition with other food products from other provinces, and marketing costs, are expected to influence the nature of future price trends for foodstuffs in the former Central South province [1]. The projections of Table 42 are made from past price trends using the growth rate of the 14 years preceding 1963,

Fig. 25

Nominal and Real price trends for Banana

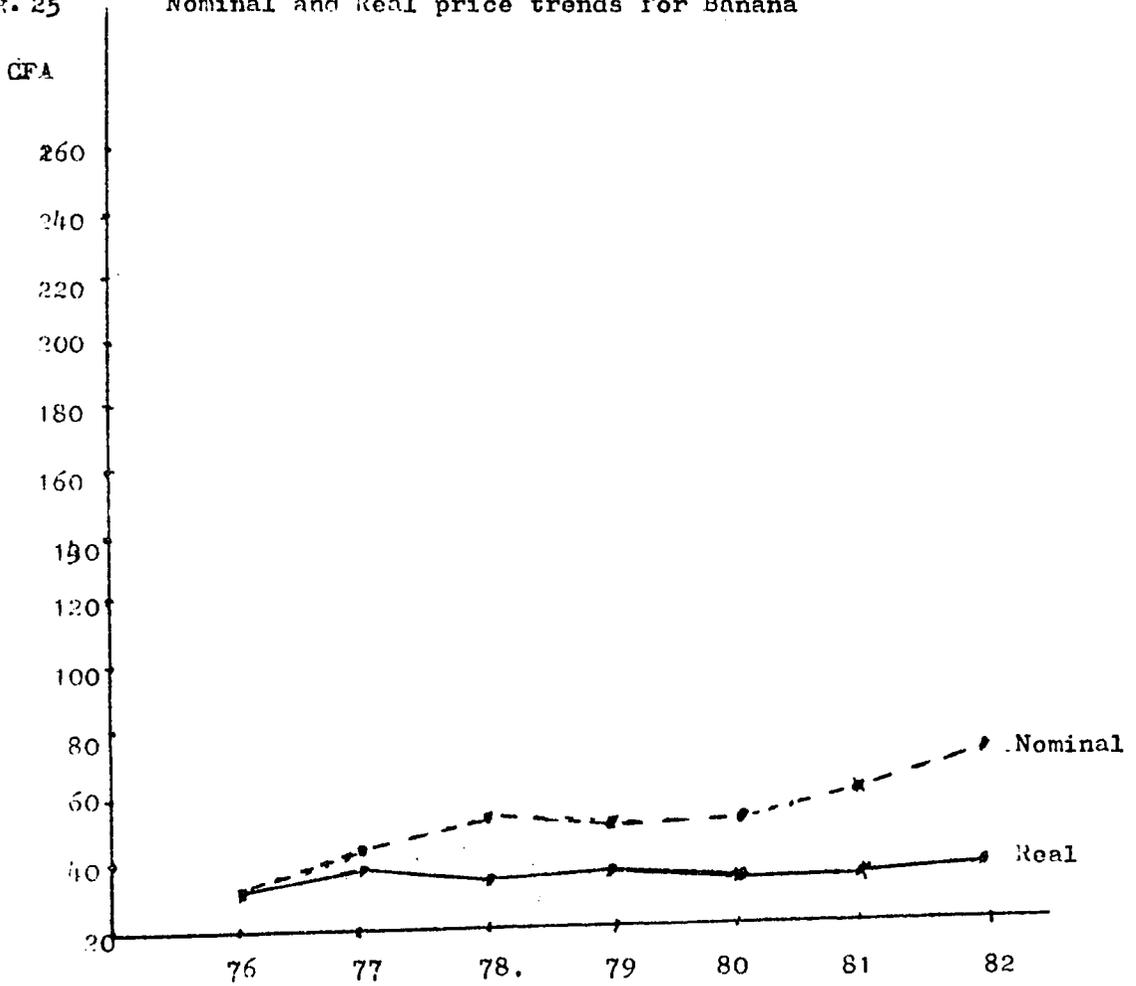
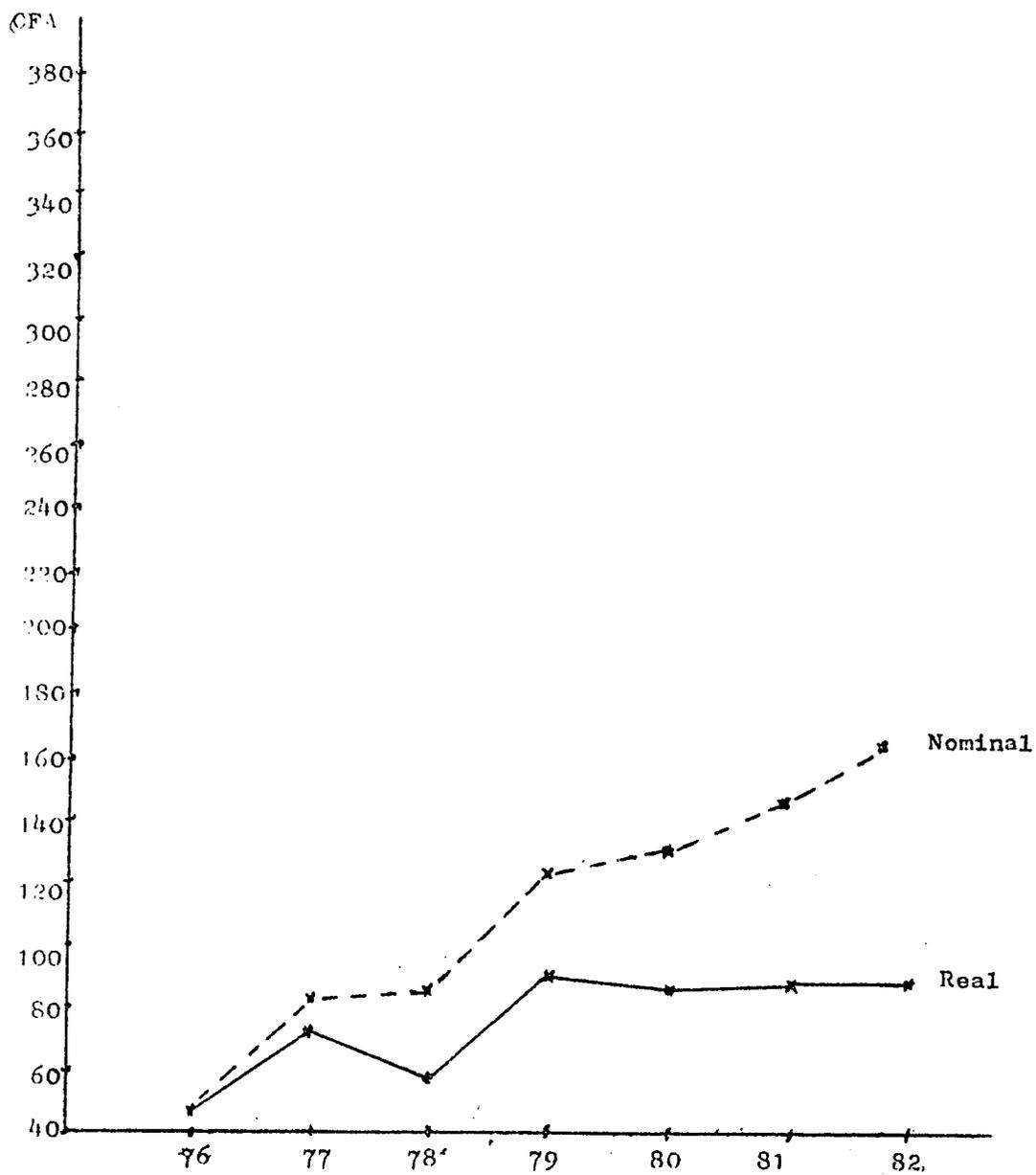


Fig. 26 Nominal and real price trends for pineapples



deflated by the rate of inflation. The projections also assume that the growth rhythm is constant.

The nature and direction of the trend for each of the major foodstuffs are illustrated by the trend lines shown in Figs. 27 and 28.

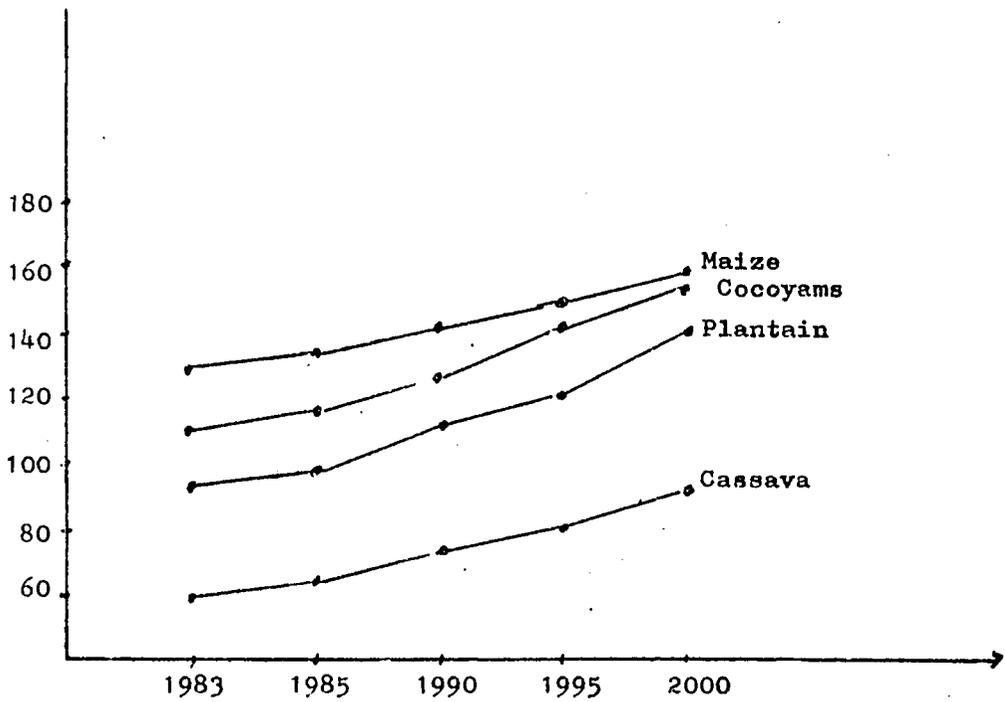
Fig. 27 exhibits a positive trend for maize from projections that estimate the price of maize to rise from 130 francs in 1959 to 159 francs in the year 2000. The demand for maize is thus expected to grow faster than the supply within the period considered, other things being equal.

The projections for rice show a decline in price from 174 francs in 1953 to 106 francs by the year 2000. Fig. 28 consequently exhibits a downward trend in the price of rice. It is therefore expected that rice supply is going to outgrow its demand in the coming years, hopefully through increased production rather than increased importation. Projections for bread also show a decline in its price from 303 francs per kilogram in 1953 to as low as 121 francs in the year 2000. Fig. 28 consequently exhibits a downward sloping trend for the price of bread. Despite the popular consumption of bread all over the country and the fact that virtually all the wheat is imported, the projections indicate that supply will exceed demand other things being equal.

As for plantains, cassava, cocoyams and yams whose demands have been described as rigid /1/, the projections show steady price increases from 110 to 159 francs for

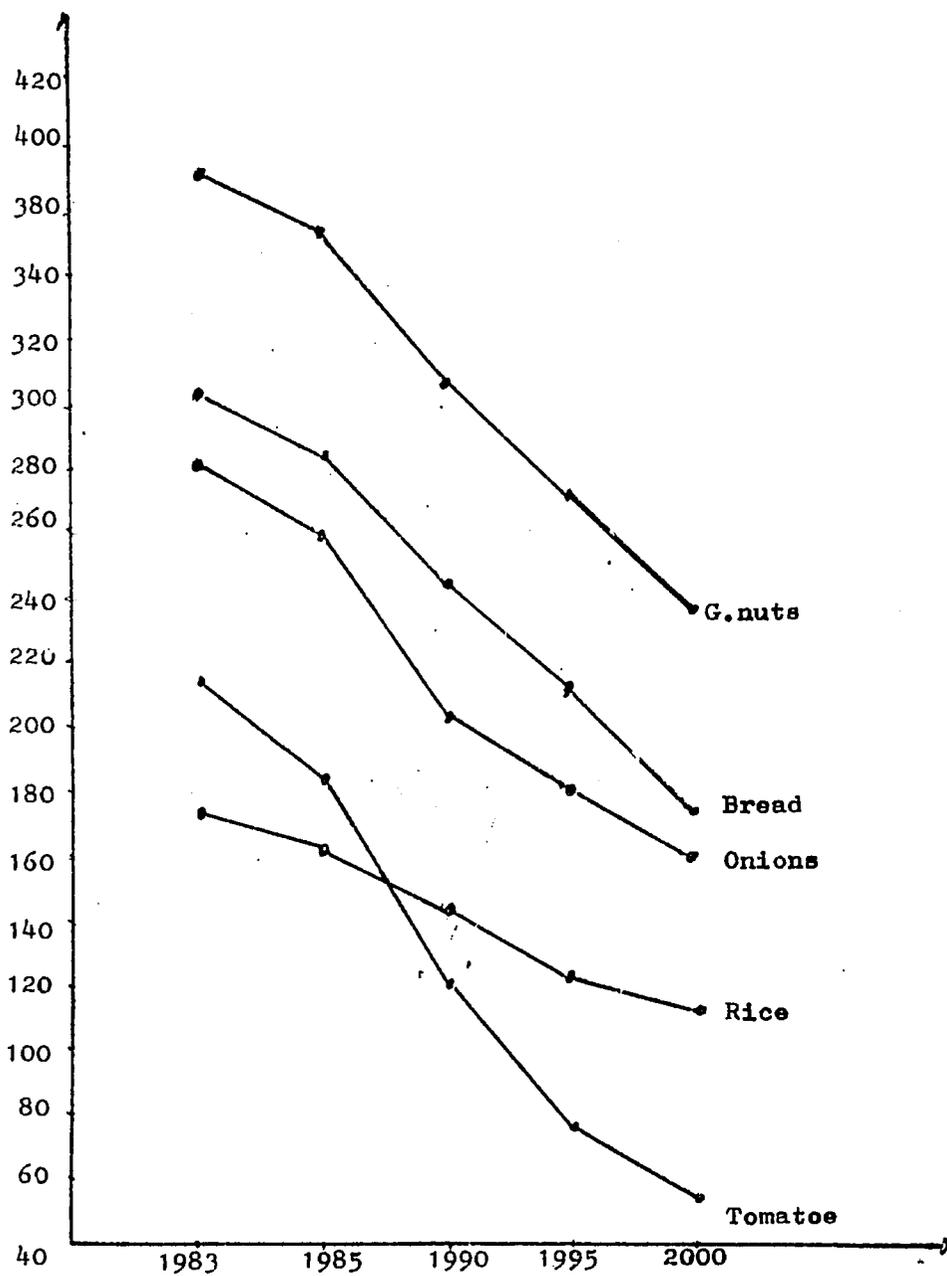
Projected price Trends for some foodstuffs

Fig. 27



Projected price trends for some foodstuffs

Fig. 28



plantains, 60 to 90 francs for cassava, 95 to 140 francs for cocoyams and 170 to 205 francs for yams, within the period considered. Their trend lines are all positively sloping as indicated in Fig 27. The demand for these products is expected to continue to exceed supply in the coming years unless other measures are taken to reverse the trend.

Groundnuts, tomatoes, and onions, like the cereals have declining price projections. The price of groundnuts drops from 370 to 236 francs, that of tomatoes from 215 to as low as 58 francs, while that of onions drops from 280 to 150 francs.

3.6.5 : Consumption and Nutrition Implications of Relative Price Changes

Regional differences in food production and supply have regional nutritional effects on the population as indicated in section 3.3. Deficiencies in certain food values have been shown to cause diseases in some parts of the country. Such diseases can be controlled by the supply and consumption of foods that provide the deficient nutrients. Since the food groups containing the required nutrients are produced elsewhere, they can only be supplied to such areas through **inter-regional** trade. The indigenous populations in affected areas must be made aware of the importance of consuming the food items containing the deficient nutrients and must be encouraged to consume them.

Apart from efforts by health authorities to initiate and encourage the supply and consumption of nutrient rich food items where there is need, their actual supply and consumption will depend to a large extent on their prices and on the incomes of the affected populations or social groups.

It has been shown that food prices in Cameroon vary widely from town to town, season to season, day to day, market to market and even from hour to hour. The qualities of food products also vary in terms of varieties, freshness and ripeness, which render their comparison difficult. The situation is aggravated by the existence of unstandardized measurement units which vary among sellers and even with the same seller.

The principal factors that influence retail price formation include the producer price, marketing costs, type of distributor, volume of transaction, level of supply and demand in the market, the quality of the product, and storage facilities.

The effects of price and revenue on consumption can best be studied by the use of elasticities. Data for Yaounde in Table 43, show that plantains, maize, cassas, and cocoyams have inelastic prices. The demand for each of these commodities is rigid. As their prices rise their demands fall less than the price increases. The demand for yams on the other hand is shown to be highly price elastic. Should the price of yam rise by 1%, its demand would drop by 3%. Meanwhile, rice and beans have unitary elasticity. Their demand will

change proportionately with price change. The table also reveals through the substitution effects that all the products except rice would be easily substituted in the face of price increases. The consumption of most products is therefore affected by price changes through the combined effects of changes in demand and the substitution of the highly priced products with cheaper substitutes.

Consumption is also affected by changes in revenues. The revenue elasticities of demand in Table 44 show that only rice, wheat, and honey/sugar will respond to high revenues with higher demands. Revenue changes have insignificant effects on the demand for most of the other foodstuffs excepting cow meat, poultry and stimulants which have unitary revenue elasticities of demand. Their consumption increases proportionately with increase in revenue. Starchy foods such as yams, cassava, cocoyams, and plantains exhibit inelastic negative demand with respect to revenue. The demand for starchy food is usually expected to drop in response to increase in revenue because it is expected that consumers shift to higher value foods as their revenues increase. This norm is apparently respected although insignificantly. Furthermore, it has been pointed out for the Central South that the prices of foodstuffs rise more rapidly than the rate of inflation and that the disequilibrium between demand and supply tends to grow with time $\frac{1}{2}$. Such a trend has been particularly noted for beans, cocoyams, cassava, plantains and maize which are in high demand, most consumed, but in short supply. Rice and bread play

a substituting role when the price of other foodstuffs rise, since they have relatively stable prices in most parts of the country, as shown earlier in Figs .1 and 3

Table 43 : Price Elasticities of Consumption for certain Foodstuffs.

Product	Price Elasticity	Substitution effect
Plantain	-0.8	-1.76
Rice	-1.8	2.9
Maize	-0.9	-1.00
Cassava	-0.8	-1.92
Cocoyams	-0.9	-2.07
Yams	-3.0	-3.3
Beans	-1.0	-4.4

Source : La Demand et Marche .. Pg. 216

Table 45 presents total and per capita consumption expenditures from 1965 projected to 1990. The per capita expenditures are based on the assumption that income, import prices, and domestic production follow the 1965 to 1990 trends. The table indicates a step rise in the country's nominal per capita expenditure on consumption from 18,500 francs in 1965 to 393,100 francs in 1990. The expenditure increases by more than 15% every five

Table 42 : National Elasticities of Demand for Various Foodstuffs

Foodstuffs	Elasticities	Foodstuffs	Elasticities
- Maize	0.00	- Cow meat	1.8
- Paddy rice	1.20	- Sheep and goat meat	0.8
- Millet & sorghu sorghum	0.50	- Pork	0.7
- Wheat	1.20	- Other meats	0.80
- Others	0.20	- Beans, heads & vegetables	0.75
<u>Rice and Tubers</u>			
- Yams	0.10	- Milk	
- Cassava	0.50	- Fresh cow milk	0.00
- Sweet Potatoes	0.20	- Transformed milk	0.60
Irish Potatoes	0.40	- Cheese	0.70
Cassava - taro plantain	0.20	- Animal oil & butter	0.70
<u>Sugar and honey</u>			
- Dry legumes	0.20	- Alcoholic	
<u>Nuts and grains</u>			
Nuts	0.60	- Beer & local wines	0.60
grains	0.30	- Imported wines	6.28
Vegetables	0.60	- Distilled alcohols	0.80
<u>Fruits</u>			
Banana	0.00	- Stimulants	
Eggs	0.90	- Tea	1.00
<u>Fish & Seafoods</u>			
Fish	0.75	- Coffee	1.00
Seafoods	0.90	- Cocoa	1.00
		- Tea	1.00
		- Spices	0.70

Source : FAO in Plan Alimentaire a long Term Pg.44

This by far exceeds the corresponding population growth rate which according to the figures in the table grows by less than 14% every five years.

Real total expenditure according to the projections, is expected to increase from 201 billion francs in 1965 to 1,177 billion francs in 1990 while the real per capita expenditures will rise from 3,300 francs in 1965 to 101,570 francs in 1990. The deflated expenditures deviate significantly from the base year expenditures, thus changes in expenditure over time could be explained by factors other than inflation. Such factors would include increased consumption, increased income and increased demand for foodstuffs, resulting in high prices.

It would be recalled from section 3.7 that the projected nominal prices for the various foodstuffs generally exhibited rising trends. Several of the real prices also exhibited rising trends except for those food items whose prices are state controlled.

There is thus the tendency that rising food prices would increase consumption expenditures on food.

Nutrition Implications

Increasing trends in the prices of foodstuffs could affect the nutritional well being of both consumers and producers. An increase in the prices of those food items that supply the critical food nutrients to the population would adversely affect the nutritional well being and health of the low income groups since such increases could cause them to shift to the consumption of cheaper

Table 43 : Projection of Private Consumption Expenditure on Food, for Cameroon

Year	Population (Millions)	Total normal private consumption expenditure (Billion CFA)*	Consumer price Index 1975 = 100	Real Private consumption expenditure	Nominal per capita consumption expenditure (1000CFA)	Real per capita consumption expenditure (1000CFA)
1965	6.1	113.0	56.1	201.0	18.5	33.0
1970	6.3	132.0	50.5	310.0	29.2	46.6
1975	7.5	408.0	100.0	403.0	54.4	54.4
1980	8.6	1033.0	155.0	659.0	126.5	76.7
1985	9.5	1600.0	215.0	742.0	163.4	73.3
1985	10.0	2153.0	255.0	904.0	215.3	84.3
1990	11.6	4556.0	337.0	1377.0	333.1	101.57

Source : UNF projections in "Cameroon an Export market profile" Pg. 14.

* The figures assume trend projections based on the continuation, year by year, of 1965-80 trends in income, import prices and domestic production.

** Figures obtained by dividing total consumption expenditures by the population.

but low nutrient providing food items.

Increased demand and therefore increased prices of foodstuffs in the producing centres may result in the reduction of home-consumption by the households in favour of sales and a consequent lowering of the producers' nutritional well being if the revenues obtained from sales are not used to purchase and consume food of higher nutritional values. The impact of higher prices on food consumption and nutrition could be investigated by studying the consumption elasticities of those food crops that are most important to the nutrition of a given set of households. A study of the nutritional contribution of three food crops - corn, beans, and Irish potatoes, in the North West province in 1982, showed that the average daily contribution of corn to the per capita intake of calories was 54.8% and for proteins 48.9%. Beans contributed 9.2 and 22.9% of calories and proteins respectively while Irish potatoes contribute 5.0 and 3.5%. The three crops together supply 69.0 and 75.3% of the daily calorie and protein intake respectively [4]. From estimated price elasticities of calorie and protein which are -0.773 and -0.843 respectively [4], the effects of price increases on the consumption of corn, beans and Irish potatoes in the North West province are estimated and shown in Table 46. It is shown that a 10% increase in the price of these products will lead to 7.7 and 8.4% reduction in calorie and protein intake respectively. A 20% rise in their price will diminish calorie intake by 15.5% and protein intake by 16.9% similarly, a 10%

Table 44 : Estimated Reduction in Average Sample Attainment of Calorie and Protein I.D.R. given various Hypothetical Price Increases for Marketed Food Crops in North West Province of Cameroon (1962)

Percentage Increases in the Prices of corn, beans & Irish Potatoes	Resulting Percentage Decrease in Consumption		Resulting Percentage Decrease in I.D.R. Attainment	
	Calories	Proteins	Calories	Proteins
10	7.7	0.4	9.9	25.5
15	11.6	12.6	14.9	38.3
16	12.4	13.5	15.9	40.8
17	31.1	14.3	16.9	43.3
18	13.9	15.7	17.9	46.0
19	14.7	16.0	18.9	48.6
20	15.5	16.9	19.9	51.1

Source : Consumption Effects of Agricultural Policies : Cameroon and Senegal. Pg. 123.

increase in the prices of the three products will decrease the Minimum Daily Requirement (MDR) of calories by 5.9% and proteins by 14.5%. In the short run therefore, increased food crop prices have the potential for adversely affecting the nutritional status of the farmers. However, in the long run it is argued that there is reason to believe that such negative impact will reduce and possibly transform to a positive effect [14]. This is based on the assumptions that (i) the farmers may adjust their food consumption habits to increase the intake of items other than those whose prices are affected and (ii) the farmers will increase the production and sales of those products with higher prices.

4 : Policies, Institutions and Regulations that Influence Food Consumption

4.1. Policies

The major policy issues that influence or would have influenced food consumption in Cameroon are the price, import substitution, and input subsidy policies.

There exists a nominal price control system for certain commodities, for all locally manufacture products and all local industrial products. This policy remains unenforced and is thus ineffective except in the case of the National Market Board (ONCE) which effectively implements producer prices for the principal agricultural exports [15]. The ineffectiveness of the price control policy results from the lack of enforcement mechanism and resources. For instance, the National Cereal Office which

has as one of its major objectives the moderation of seasonal and regional price fluctuations of grains, has been ineffective owing to lack of adequate resources for implementation.

Also, attempts by the Department of Price Control of the Ministry of Commerce, to control the prices of locally produced foodstuffs and locally processed products based on production cost, have been fruitless despite fines, arrests and closing of offenders' stores. The ineffective implementation of the price policy has been viewed rather as a blessing to the often acclaimed food self-sufficiency in Cameroon [16], which in effect is precarious in that reserve stocks needed in times of crisis are nonexistent.

The import substitution policy is closely associated with the policy of food production by parastatal organisations. Parastatals were created for the production of rice, wheat, sugar, and palm oil in an attempt to curb the size of importation of these products and their attendant impact on foreign exchange reserves. Again, this strategy has proved ineffective because implementation has been confronted with a conflict of interests of producers and aid donors on the one hand, and importers and consumers on the other [14]. The producers and aid donors favour a clamp down on importation so as to sell at prices high enough to cover their high costs of production. The importers and consumers on their part prefer the cheap imported products that are virtually dumped into the country at give away prices. They stand

to gain more from the dumping deal than from the less beneficial deal imposed on them by the local producers. For instance in 1986, rice was imported at the rate of 70 francs/kg in Douala as opposed to the price of locally produced rice of 195 francs. These conflicts have contributed greatly to the failure of most of the parastatals to meet the desired food supply objectives.

The input subsidy policy aimed at channelling back to farmers some of the marketing surpluses from the marketing Board has also proved ineffective at the implementation level. This results from the absence of an appropriate efficient implementation institutions [14]. This policy would have however benefitted food production only indirectly since the subsidized inputs like fertilizers are primarily meant for the export crops which happen for the most part to be grown in mixed culture with food crops. Unfortunately, the inputs usually arrive the farmers too late to have an effective or desired impact.

4.2 : Institutions

The institutions that influence food consumption are primarily MIDEVIV, the National Cereal Office, the Ministry of Economy and Planning and the Ministry of Commerce and Industry. All these are supposed to have direct impact on the prices of food products. MIDEVIV was supposed to curb or moderate increases in the prices of foodstuffs in the urban centres by promoting increased

production through the supply of improved seed materials and other inputs, and through guaranteeing a market for the increased production by farmers. This is done by buying directly from the farmers and supplying the towns at lower prices. They were expected to bring down urban food prices through competition with private food distributors. Unfortunately, their operations have tended to complement the distributors rather than compete with them.

The price control role of the National Cereal Office has already been discussed above as well as the role of the department charged with price controls in the Ministry of Economy and Planning. The Ministry of Commerce and Industry fixes the prices that are ineffectively controlled. It is also in charge of weights and measures whose so much desired impact is still far from being felt in the food sector. It is one of the existing handicaps in production and marketing.

The other institutions that influence food consumption are the Ministry of Health which is supposed to look into and control nutrition based diseases through the encouragement of the consumption of the desired nutrient rich foodstuffs; the Ministries of Agriculture and of Livestock and Animal Industry, whose policies are expected to influence production of food at all levels; and the Ministry of Economy and Planning which together with the Ministry of Agriculture and that of Livestock and Animal Industry act as supervisory Ministries to the several food producing parastatals. The parastatals them-

selves also constitute institutions that influence food consumption since they are expected to produce to augment the food items that are deemed to be in short supply.

These parastatals include :

- i) SEMRY in the Extreme North province, for the production of rice,
- ii) UNVDA in the North West province, for rice production,
- iii) SODEMIR in the West province also for the production of rice,
- iv) SOCAPALM in the Littoral province, produces palm oil,
- v) CDC in the South West province, produces palm oil, rubber, banana, tea and pepper,
- vi) SODEMIR in the North province, which was initially created to promote the production of wheat but which failed in that mission, and now promotes the production of maize;
- vii) SODECOTON in the North province produces cotton seed oil, and
- viii) SODEMIR, charged with the improvement of the supply and quality of meat.

Regional Development Authorities and Organisations such as ZAPI (an integrated development organisation in the East province), SODENYAK (a village settlement project in Littoral), WADA and REDENO (development authorities in the North West province), and the high plateau project in the West province, also influence food consumption by promoting food production in their areas of jurisdiction.

The attempt at equitable regional distribution of these parastatals and regional development organisations portrays the government's good intention of regional balance in the supply of food and in income distribution.

4.3 : Regulations

The only official regulation that is supposed to have an impact on food consumption in Cameroon is Law N° 72/18 of 17th October 1972 which was revised by Law N° 79/11 of 30th June 1979. This law empowers the government at ministerial, provincial, and divisional levels to regulate price determination, price fixation, sales and distribution of goods, and all practices that influence consumer prices. As has been mentioned above, the price regulation policy prescribed by this law has fortunately been largely ineffective as regards the control of local food prices. Prices in the food market are determined by the forces of supply and demand and this has resulted as pointed out above, in the relatively favourable food supply situation in the country.

The above law says nothing about food quality control at any level, neither is there any efficient food inspection and control mechanism to guarantee quality and safety of both processed and unprocessed products sold to the public.

5: Expected Impact of Medium Size Farms Project on Consumption

5.1. General Impact

The medium size farms project if successfully implemented will have the effect of increasing food and export crops production. Food supply will certainly increase in type and quantity and may therefore invoke the means of distribution to needy areas to help solve their food shortage and accompanying nutrition based disease problems.

Increased production has to be accompanied by the need for transformation with all its attendant advantages especially with respect to consumption, storage, transportation and provision of utility over time as pointed out by Ayissi et al. - [25]. The advent of an increase in the existing processed food products and the introduction of new ones as a result of the impact of MSP on food supply, may lead to important changes in tastes and feeding habits of Cameroon's diversified population. This could increase the consumption of the various food products at all levels and in all regions of the country thereby helping to stamp out malnutrition where it exists. Changes in the forms of food products very often result in reductions in bulk thus facilitating transportation and ensuring a wider geographical distribution and consumption of the food item. Apart from providing the well known time, space, and form utilities to the population, processing usually is accompanied by additives to enrich

the processed product thus improving the nutritional quality of the food. Processing would create new jobs, increase incomes and consequently increase the consumption of foods of higher nutritional values thus leading to better nutrition.

It is also important to note that the success of the MSF project may be a prerequisite to achieving the projected food supply and consumption levels of the 6th Five year Development Plan.

On the other hand, economic theory states that investment is a function of consumption. It is therefore reasonable to assume that any steps taken to increase the population's propensity to consume the diversified Cameroonian food products will be steps to encourage investment in food production. Such investment in the MSF project, would guarantee the success of the programme.

5.2 : Impact by Food Group

1. Cereals

Increased production of cereals through the MSF programme would reduce their prices and increase their availability to non-cereal producing areas.

This amounts to supplying areas deficient in iron and vitamin B₂ with these nutrients and reducing the incidence of anaemia and other food related diseases in these areas. Increased cereal production will more importantly cut down importation, save foreign exchange, and increase Cameroon's security in food self-sufficiency.

It will on the other hand pose internal storage, transportation and other marketing problems. These may partially be addressed by processing, which will in turn provide new tastes. These will result in increased consumption. Increased production of cereals plus the resultant processing may lead to increased livestock production through the supply of animal feed from the by-products of processing.

Roots and Tubers

Increased production will bring about processing of the products into flours, chips, etc to enhance storage, transportation and marketing in general. The processing of tubers is usually accompanied by additives that enrich the processed product thus invariably increasing the nutritional value of this food group. Processed by-products could be used as animal feed and processing would certainly reduce the incidence of post harvest losses thus increasing producers' incomes and their capacity to purchase and consume alternative foods of higher nutritional values.

Edible Oils

These are a good source of lipids and vitamin A which have been shown to be in short supply. The increased production of these products through the NSF programme would provide a welcome means of improving the nation's nutritional status.

Fruits and Vegetables

These are not available in adequate quantities in all parts of the country. They are an important source of vitamin C and iron. Increased production would increase their supply to the non-producing nutrient deficient areas. Processing may also result in the cut down on the high rate of post-harvest losses. It could increase farmers' income and their capability to consume other food items of higher nutritional values.

6 : Conclusion and Recommendations

6.1 : Major Conclusions

The major conclusions that have emerged from this study are summarized as follows:

1. Roots, tubers and other starchy foods are the most heavily consumed foodcrops in Cameroon. They are the principal contributor to the average per capita daily consumption of 1.423kg.
2. The major producers of all food crops are the South West, Centre, North West, and West provinces in that order. However, the three Northern provinces plus the West and North West, dominate cereal production while the Southern provinces in general dominate the production of starchy foods.
3. The demand satisfaction for meat/fish in Cameroon is 74.1% with fish making a very substantial contribution. On the other hand, the demand satisfaction for food

crops is 95% with starchy foods, fruits and vegetables as major contributors. Poultry supply is expected to grow rather rapidly. Consequently, it is also expected to play an important role in augmenting the country's animal protein intake in the future.

4. Rather high supply shortages are expected for rice, wheat and plantains by the year 2000. Similar shortages are expected for all meats except poultry. The gaps may have to be closed through importation. Although import restrictions can be achieved for rice, beef, poultry and tinned meats by raising import prices, and for beef, tinned meats, and dairy products by increasing domestic production, importation is expected to persist for rice, vegetable, poultry and fruits even in the face of domestic production increases.
5. Whereas food expenditure differences do not appear to exist between socio-professional groups, considerable inter-regional differences exist in food expenditures by households. The bulk of household expenditure on food is taken up by meats, fats and oils, fish, crustaceae, molluscs, drinks, starchy food and legumes/grains. Meanwhile, the annual per capita expenditure on food in 1933/34 stood at 39.827 francs CFA.
7. The rate of food consumption by their producers is as high as 50% but consumers originating from the producing zones spend more and consume more of the food products from their zones. Consequently, consumption expenditures on each food group are high in the high production zones and low in the low production zones. However, shifts

in consumption patterns are evident in the urban centres of Yaounde and Douala where inter-regional contacts exist among households.

8. Urban prices are generally higher than rural prices except for rice and bread which have almost uniform prices everywhere. Retail price differences over space are explained by transportation costs, but demand and other factors explain price differentials in the major cities. In the presence of ineffective price controls and regulations, prices are largely determined by the forces of demand and supply.
9. Price differences over time for most food products are due mainly to inflation but those for cereals, legumes and some vegetables could be explained by factors other than inflation: demand, supply, and other factors.
10. From price projections, the prices of maize, cocoyams, plantains and cassava are expected to continue to rise but those of groundnuts, bread, onions, rice and tomatoes are expected to decline.
11. Price and substitution effects influence the consumption of most foodstuffs. Income effects are positive for rice, wheat, and honey/sugar but they are insignificant for cow meat, poultry, stimulants and starchy foods. When the prices of most foodstuffs increase, they are easily substituted with rice and bread.
12. In the short run, rising food prices may adversely affect the nutritional well-being of both consumers and producers but in the long run positive effects are expected, especially for producers

6.2 : Recommendations

6.2.1 : Documented Recommendations

Before the recommendations derived from our analysis and conclusions, it is deemed relevant and import to summarize recommendations that resulted from the "Long Term Food Plan Study" [13]. The study recommended that :

- a) The productivity and well-being of the rural world should be given priority by :
 1. Taking steps to curb rural exodus - creating formal channels for foodstuffs distribution,, encouraging the use of appropriate agricultural inputs in rural areas, developing new crop land, and reorganising and reviewing the policies of institutions like FOMADER, FIDEVIV, and the National Cereal Office,
 2. Developing, promoting, restructuring and improving inland fisheries.
 3. Developing better livestock objectives,
 4. Increasing rural credit facilities and intensifyin rural training and agricultural extension,
 5. Seeking ways of curbing post-harvest losses.
- b) The nutritional equilibrium of Cameroonian foods should be improved through mass education on nutrition, creating easy access to certain remote production areas, and restructuring certain

- c) Intensifying food industries to fully utilize the food potentials of Cameroon.

These recommendations are deemed necessary to shift Cameroon from precarious self-sufficiency to permanent self-sufficiency in food and to qualitatively improve consumption.

Similar recommendations were arrived at by the Economic and Social Council in 1956, following a Study on the problems of production and distribution of foodstuffs in Cameroon [3]. Their recommendations, presented in form of resolutions, were grouped under production augmentation and improvement of distribution channels.

The production augmentation recommendations were :

- A) For increased production, it was recommended that,
- 1) The measures and dispositions already taken to fight against rural exodus be vigorously applied and that other ways and means that can ensure the retention of youths in rural areas be sought. This should include measures that ensure the rational balanced occupation and development of the national territory.
 - 2) The intensification of the campaign and putting into place structures capable of changing the mentality of the peasants and leading them to abandon archaic tools and methods of production in favour of modern tools and high yielding methods.

3) The peasants be encouraged to organise themselves into foodstuffs production and marketing co-operatives to benefit from their attendant advantages. The Economic and Social Council further advocates :

- i) the institution of a guaranteed price system for food crops and livestock products,
- ii) the granting of credit to small farmers and fishermen, and
- iii) the sustained training of peasants in their rural setting

4) The search for higher agricultural productivity and yield through :

- i) extending successful results of mechanisation experiments on food crops to other parts of the country,
- ii) the development and adoption of means and ways of effective soil protection and of fighting against invasion by the desert, and
- iii) the use of fertilizers based on the nature and needs of each soil type.

B) For the improvement of distribution channels for foodstuffs, it was recommended that :

- 1) Rural roads be increased and reinforced in order to open up access to all zones of the country.
- 2) Infrastructure for conditioning, conservation, storage and transportation should be installed where needed for all foodstuffs and especially for fruits/vegetables, meat and fish.

- 3) Marketing structures and channels should be organised and developed for crop and livestock products in the internal and external markets to ensure regular supply of the various products needed.
- 4) The optimum price level to the producers of foodstuffs be determined for each locality to ensure fair remuneration to the producers without seriously affecting the purchasing powers of the consumers.
- 5) A national Office for marketing of food crops be created which will collect and sell foodstuffs in both internal and external markets.
- 6) Appropriate information and publicity system be instituted to extend the consumption of all the national foodstuffs all over the country and also outside the country to ensure their increased production and exchange.
- 7) Fiscal incentives be given to those who handle the production, conditioning, conservation, storage and transportation of food products.

6.2.2 : Recommendations Derived from the Study

The major recommendations that result from this study to complement the above documented recommendations are :

1. Appropriate efforts should be made to sustain and/or increase the supply of roots, tubers and other starchy foods which form the bulk of the food consumed

in Cameroon while intensifying and encouraging through public education, the production and consumption of other food crops with higher nutritional values.

- 2) Because of the regional specialization in food production, inter regional trade should be promoted in order to equalize supply and ensure nutritional balance in all regions of the country. Marketing infrastructure and facilities should be improved between the supply areas and both the rural and urban consumption centres.
- 3) Appropriate measures should be taken to increase the domestic production of meat and fish, to bridge the present and future supplies gaps which have been shown to exist even in the presence of very high importation levels for these products.
- 4) While promoting the increased production of all food crops to bridge the expected future supply gaps, the dumping phenomenon exhibited for rice, poultry, vegetables and fruits, must be checked as it discourages domestic production efforts and incentives.

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A P P E N D I X

Table I : Yaounde Food Retail Prices (CFA/kg)

Product	1977	1978	1979	1980
Maize	106	76	66	96
Rice	125	100	150	149
Bread	215	204	216	228
Plantains	54	54	54	71
Cocoyams	51	51	60	51
Cassava	37	39	33	29
Yams	84	129	92	123
Beans	137	341	328	277
Onions	203	191	236	379
Okro	228	269	257	380
Banana	44	53	52	52
Pineapples	81	85	144	189
Groundnuts	219	214	188	239
Meat with bones	442	488	515	675
Pork with bones	600	750	775	950
Live Chickens	525	600	600	625
Palm oil (litre)	219	250	258	250

Source : Annuaire Statistique du Cameroun 1983. Pg. 245

Table II. Food Retail Prices for Selected Food Items in Limbo (CFA/Kg)

Product	1	1977	1978	1979	1980
Maize	1	66	56	62	83
Rice	1	138	191	147	152
Bread	1	80	80	132	50
plantains	1	55	58	62	72
Cocoyams	1	63	66	69	96
Cassava	1	30	33	29	40
Yams	1	130	124	174	198
Irish Potatoes	1	116	139	87	116
Tomatoo (fresh)		112	212	123	198
Onion	1	251	303	248	496
Okro	1	187	222	226	289
Banana	1	31	35	39	61
Pineapples	1	42	56	90	100
palm pil	1	167	161	193	199
Meat & bones	1	452	502	530,	604
Pork	1	528	575	613	815
Chicken (live)	1.060	1.200	-		1. 550

Source Annuaire Statistique, Pg. 270

Table III : Food Retail Prices for Bamenda (CFA/kg)

Products	l	1977	1978	1979	1980
Bread	h	-	104	-	140
Maize	l	66	-	50	66
P ₁ antains	l	31	29	24	34
Cocoyams	l	39	48	38	40
Cassava	l	14	24	25	24
Irish Potatoes	l	55	61	77	29
Beans	l	96	146	-	73
Tomatoes(fruits)l		104	88	112	117
Okro	l	104	150	258	284
Banana	l	30	33	29	38
Pineapples	l	24	30	41	31
Meat with bones l		302	339	446	432
Pork	l	491	509	525	571
Palm oil (litre)l		241	191	219	210

Source : Annuaire Statistique, Pg. 227

Table IV : Retail Food Prices at Bafoussam (CFA/kg)

Products	1977	1978	1979	1980
Maize	-	53	41	55
Bread	200	210	250	250
Rice	120	133	138	138
Plantains	-	22	25	18
Cocoyams	-	37	30	32
Cassava	-	21	21	17
Yams		53	47	61
Beans		152	139	158
Irish Potatoes	35	32	94	87
Onions	288	193	-	221
Okro	-	227	217	217
Tomatoes	78	38	114	119
Banana	27	25	25	24
Pineapples		42	39	45
Groundnuts	264	222	315	408
Meat with bones	383	368	410	500
Pork	-	439	433	500
Chicken (live)	615	717	-	525
Palm oil (litres)	200	183	198	202

Source : Annuaire Statistique Pg. 261.

Table V : Retail Prices for Selected Food Items in Bertoua (CFA/kg)

Produce	1977	1978	1979	1980
Maize	99	62	72	138
Rice	135	145	152	153
Bread	200	196	236	272
Plantains	48	54	50	57
Cassava	27	22	26	34
Cocoyams	84	50	52	62
Beans	127	197	325	252
Fresh Tomatoes	305	251	303	272
Okro	181	235	446	626
Onions	149	262	362	356
Banana	37	44	51	62
Pineapples	37	55	56	161
Palm oil (litres)	227	259	298	282
Groundnuts	178	222	295	288
Meat with bones	247	278	354	390

Source : Annuaire Statistique de Cameroun, 1983, Pg. 274.

Table VI : Retail Prices for Foodstuffs in Garoua (CFA/Kg).

Products	l	1977	1978	1979	1980
Maize	l	67	73	74	75
Bread	l	240	240	240	240
Rice	l	132	157	155	157
Plantains	l	79	104	74	107
Cassava	l	34	40	34	40
Yams	l	105	88	69	109
Beans	l	113	179	170	148
Tomatoes	l	105	174	154	159
Onions	l	196	179	193	209
Banana	l	75	95	74	99
Pineapples	l	161	89	152	149
Groundnuts	l	125	121	126	139
Meat & Bones	l	281	356	398	470
Palm oil (litres)	l	361	350	295	353

Source : Annuaire Statistique, Pg. 266