

Groupe de Démographie Africaine

IDP_INED_INSEE_MINCOOP_ORSTOM

**POPULATION SIZE
IN AFRICAN COUNTRIES :
AN EVALUATION**

Volume I

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Le groupe de Démographie africaine IDP - INED - INSEE - MINCOOP-ORSTOM

est un organisme de liaison non officiel entre les statisticiens, démographes et autres techniciens qui s'intéressent aux questions de population dans les pays d'Afrique.

Il effectue des travaux de synthèse ou méthodologiques à partir des données recueillies ou des techniques mises en oeuvre dans ces pays ; il rend compte des travaux qui y sont réalisés dans le domaine de la démographie et d'une manière générale s'efforce d'informer les personnes intéressées par toute question ayant trait à la démographie africaine.

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INTRODUCTION

Francis Gendreau

OCTOBER 1980

INTRODUCTION

I. ORIGIN OF THE PROJECT

In October 1975, the Group on African Population Studies voted a vast research project for evaluating the methods of population data collection in African countries.

This project originated in the observation that collection problems are all too often investigated according to the type of operation (census, survey, vital statistics...), with no consideration of the population indicators pursued (size, structure, movement). It was therefore decided to inverse the problem and study, for each indicator, the different methods available for collecting the required data, in other words, to compare the various techniques (methods of data collection employed) according to their objects (population indicators pursued). This procedure was considered of interest on three counts:

- for the operational conclusions it would yield,
- for the stock it took of the knowledge so far acquired in each field of population analysis (size, sex and age structures, fertility, mortality...),
- in relating collection/analysis problems, it underlined the importance of this basic relationship: on one hand, the method of data collection should be elaborated with the particular analysis in view, and on the other, the analysis should take into account the way data have been collected.

The first theme investigated in the frame of this research programme was the sex/age structures of African populations, the results of which have recently been published (1). In 1978, the Group decided to pursue the programme on the theme of national population size.

II. METHODOLOGY EMPLOYED

The method proposed consisted of examining the various sources on which estimates of population size in African countries have so far been based and studying the results obtained, in order to lead to new estimates and proposals for improved data collection and analysis. The sources vary a great deal from one country to another.

(1) ROGER (G), WALTISPERGER (D), CORBILLE-GUITTON (C), 1981, "Les structures par sexe et âge en Afrique", Group on African Population Studies (Groupe de Démographie Africaine), Paris.

Censuses are naturally a very important source of data for estimating population size (1) but they are not the only one: various types of surveys (demographic, agricultural,...), administrative counts, registers (vaccination campaign registers, polling lists,...) also yield estimates, which must be checked and completed by comparison with one another and with the data on population movement provided by vital records or surveys.

Given this, it was very difficult to contemplate embarking immediately on a comprehensive study, and the intermediate solution of national "monographs" reviewing the position of each individual country was adopted.

These were to be standardised by means of a general plan, presented below:

III. PLAN OF THE MONOGRAPHS

- 1) The first step was to draw up a list of the various data sources available:
 - early estimates due to explorers or administrators, which are based more on mere "impressions" than on any scientific investigation,
 - administrative censuses conducted by colonial administrators, mainly for taxation or recruitment purposes,
 - statistical censuses conducted by statistics or census departments
 - demographic sample surveys involving different methods of data collection (retrospective, multi-round or dual record),
 - other sample surveys, in particular agricultural and household budget and consumption surveys,
 - polling lists and other administrative population registers,
 - counts conducted by the health services (endemics department, etc...) during vaccination campaigns),
 - finally, vital records which, although they do not themselves provide estimates of population size, may be used to assess the coherency of estimates obtained from various other sources (consistency check).
- 2) After listing the main sources, the next step proposed was their critical analysis, in order to assess the quality of the results obtained. The problems discussed concerned:

- (1) For census methodology, see the Group's study on "African Censuses", Part I, "Methodological Monographs", November 1980, and Part II, "Synthesis", February 1981.

- the reference population (whether de facto or de jure, the question of aliens, nationals living abroad, etc...)
- the geographical scope: are certain areas excluded from the field of observation? Is the same method of investigation applied to urban and rural populations? How are nomads observed?...
- factors concerning the method of collection which may influence the quality of the results: motivation of respondents (refusal to cooperate, voluntary omissions...), difficulties encountered in the field work, including staff problems (recruitment, training, supervision), problems related to the use of sampling procedures...
- the quality of post-enumeration surveys, conducted after censuses, which ought to be an invaluable means of assessing the census results.

This critical study was intended to lead to an analysis of the degree of consistency between the different sources. The intention was not a systematic application of data adjustment procedures, but to consider the lacunae observed in the various operations and the adjustments made, in order to determine the approximate size of the different parameters and the degree of error affecting them.

- 3) In conclusion, each country was asked to propose a "corrected" series showing the evolution of the population up to January 1st, 1975, and to suggest improvements to the current system of data collection which would result in more reliable data which could be updated annually.

IV. APPLICATION OF THE PROGRAMME

In order to produce these monographs, various colleagues were invited to participate in the work programme. Their names were forwarded either by members of the Group on African Population Studies or by other colleagues who were familiar with African demography specialists (1). This method proved fruitful, as in most cases the proposition was accepted, or when it was not, the demographer contacted proposed an alternative solution which was generally accepted. The monographs thus came in month after month, and provisional drafts were immediately sent out to all participants. However, this procedure proved lengthier than originally foreseen and it was decided early in 1980 to publish a first volume grouping the 23 monographs

- (1) We wish to thank all these colleagues who enabled us to contact our authors, in particular Messrs. BAHRI (Head of the Population Division, ECA, Addis Ababa), BLACKER (Department of Medical Demography, London School of Hygiene and Tropical Medicine), LOOKY (Regional Coordinator for UNFPA, Yaoundé), MITCHELL (Professor, Centre of African Studies, University of Birmingham), OHADIKE (Head of Fertility and Mortality Studies, ECA, Addis Ababa) and SIMON (Demographer, RIPS, Accra).

which appeared between April 1979 and January 1980. Those appearing after this date will be published in a second volume, which will also contain a general synthesis.

The personalities of the various authors, their particular concerns, the data available for the different countries, are all factors which inevitably lead to a certain diversity, the more so as the authors were free to deviate from the plan proposed and construct their papers as they wished. Nevertheless, since all the countries are faced with a similar set of problems, with this plan as a guide-line a relative homogeneity has been possible.

Technical notes

1. The figures in brackets () in the text correspond to footnotes at the bottom of each page.
2. The figures in square brackets [] in the text correspond to bibliographical references given at the end of each chapter.

A N N E X

PROGRAMME PROJECT**I. DATA SOURCES**

1. Historical estimates
2. Administrative census reports and other administrative sources (health reports, etc...)
3. Statistical census
4. Demographic sample surveys
5. Other sample surveys (agricultural, household, budget, etc...)

II. CRITICAL STUDY OF SOURCES

1. Reference population
 - de facto and de jure
 - problem of foreigners, of expatriates
2. Scope
 - geographic coverage
 - urban, rural zones
 - problems posed by nomads
3. Factors which may influence the quality of data collection
 - motivation of respondents
 - difficulties of the survey (according to the type of settlement, region, etc...)
 - problems related to the training of enumerators and interviewers
 - problems related to the sample
4. Results of post-census surveys
5. Coherence between various sources

III. CONCLUSIONS

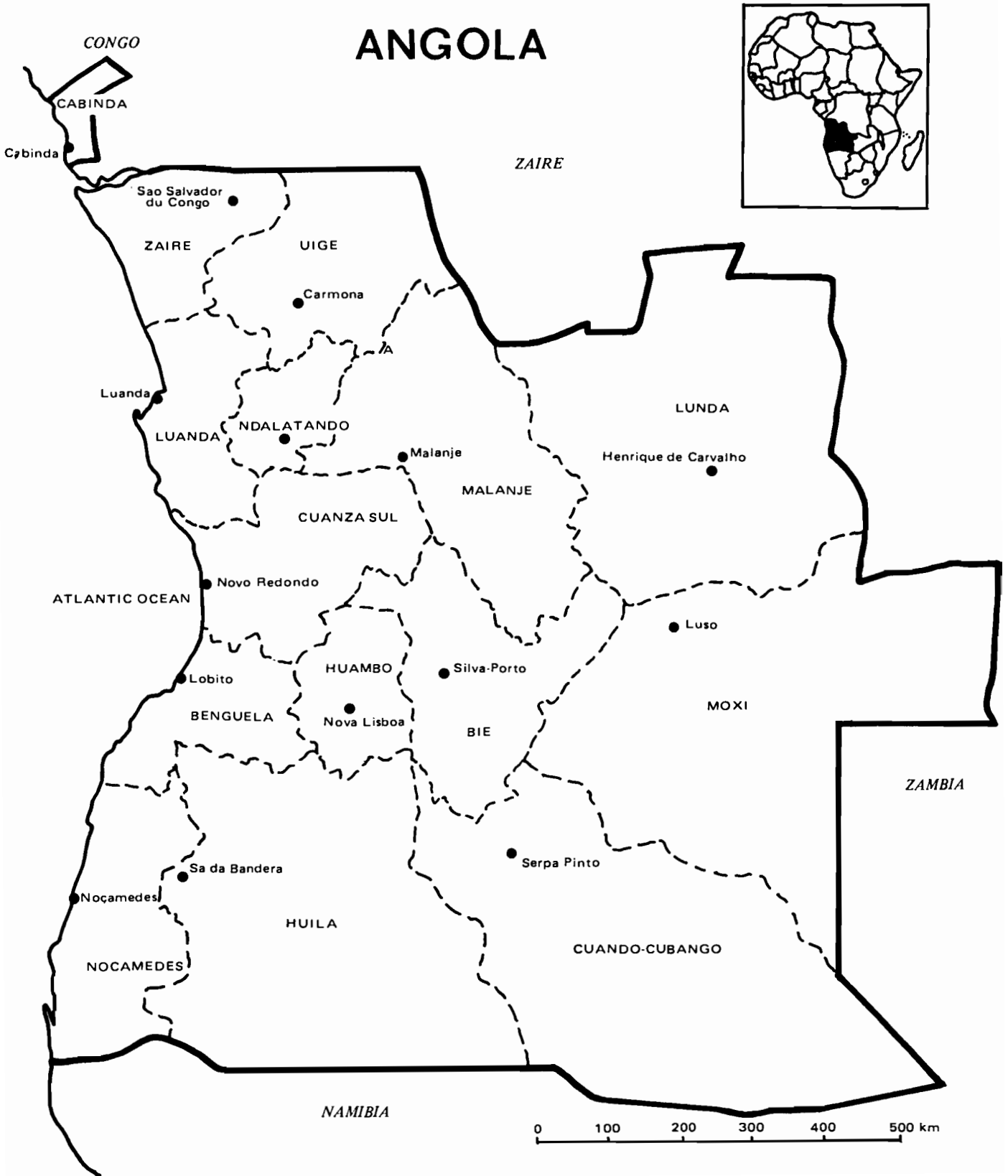
1. Concerning the results
 - proposed evolution of populations since the beginning of the century
 - proposed estimation for 1st January, 1975
2. Concerning the sources
 - proposed improvements, including the annual updating of the population estimates using migration data

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ANGOLA

Carlos Da Costa Carvalho

APRIL 1979



A N G O L A

I. SOURCES OF DATA1) Historical Estimates

As far as is known, it is impossible to find information on the size of the Angolan population before 1777. Indeed, "...it was during the government of D. Antonio de Lencastre, 1777-1778, that one finds reference to the first attempt to assess the population of Angola, in execution of the order of 21st May 1770, decreed by the Minister, M. Melo Castro." [3, p.3].

From that year until the end of the last century, data have been located from nine enumerations. Table 1 below shows the population figures comprising the various somatic types of the Angolan population.

Table 1

ANGOLA - POPULATION UP TO 1900 BY SOMATIC TYPE

YEAR	WHITES	HALF CASTES	BLACKS		
			Subject	Non-subject	Total (rounded)
1777	1 581	4 043	468 493	-	-
1778	1 700	4 511	481 147	-	-
1819	-	-	300 000	-	-
1846	1 830	5 770	378 923	5 000 000	5 400 000
1866	2 611	(a)	471 074	-	-
1869	2 832	(a)	-	-	-
1897	5 557	(a)	843 406	18 551 037	19 400 000
1898	11 453	(a)	660 629	-	-
1899	11 491	(a)	955 010	-	-

(a) Not known

2) Administrative censuses and other administrative sources

During the period between 1900 and 1939, no fewer than 18 enumerations and "censuses" were carried out by the administrative and military authorities, reflecting the implementation of a series of legislative measures, notably the one issued in Lisbon on 17th August 1899, by which censuses had to be carried out every ten years, and the decree N° 144-A of July 1922, in which it was stipulated that "...every year in June, and appended to the Official Bulletin, the Ministry of the Interior will publish the general census of the Province, as at 31st December of the previous year" [3, p.29] .

The results of these operations are shown in Table 2 below.

Table 2

ANGOLA - POPULATION DURING THE PERIOD 1900-1938
BY SOMATIC TYPES

YEAR	WHITES	HALF-CASTES	BLACKS		
			Subject	Non-subject	Total
1900	9 197	3 112	777 049	4 000 587	4 777 636
1913	13 800	6 300	-	-	4 500 000
1920	20 700	7 500	-	-	4 250 000
1922	29 000	8 100	-	-	3 424 000
1924	36 192	9 710	-	-	3 400 00
1925	-	-	2 438 411	-	2 438 411
1927	42 843	10 800	2 395 636	542 029	2 937 665
1928	-	-	2 438 671	-	2 438 671
1929	-	-	2 533 229	-	2 533 229
1930	-	-	2 503 794	-	2 503 794
1931	59 493	13 960	2 534 075	486 551	3 020 626
1932	-	-	2 574 204	-	2 574 204
1933	58 698	18 957	2 974 987	123 294	3 098 281
1934	58 098	19 872	2 477 829	669 216	3 147 045
1935	-	-	2 689 443	-	2 689 443
1936	-	-	2 664 542	-	2 664 542
1937	-	-	2 629 562	-	2 629 582
1938	-	-	2 622 808	-	2 622 808

Source: [3, p.33]

3) Statistical Censuses

In contrast to the situation in previous years, censuses of a truly statistical nature have been carried out from 1940 onwards. From that date, the local statistical office became responsible for the preparation and the implementation of censuses, though, apart from the capital, collection was done by the administrative authorities and others.

The following table shows the data for the period 1940-1970.

Table 3

ANGOLA - POPULATION AT DIFFERENT CENSUSES BY SOMATIC TYPES

CENSUS YEAR	BLACKS	WHITES	HALF CASTES	OTHERS	TOTAL
1940	3 665 829	44 083	28 035	63	3 738 010
1950	4 036 687	78 826	29 648	105	4 145 266
1960	4 604 362	172 529	53 392	166	4 830 449
1970	5 250 174	280 101	89 337	389	5 620 001

Sources: For the years 1940-1960, [10, pp. 30 and 31].

For 1970, [2, p. 5].

4) Demographic Sample Surveys

A few surveys directed at studying certain aspects of some Angolan ethnic groups were carried out during the 1950s (see Bibliography). Among these, may be mentioned the fertility surveys carried out in 1957. However, considering the way the samples were designed, their small size (from 100 to 1,000 women) and the little information they provide, their interest is very limited.

5) Other Sample Surveys

Except for the agricultural surveys carried out since 1962-1963 by the "Missao de Inquéritos Agrícolas de Angola" in the context of the first World Agricultural Census sponsored by the FAO, no further information could be obtained.

II. CRITICAL STUDY OF SOURCES

1) Introduction

In view of the fluidity of frontiers, the primitive administrative apparatus and weak infrastructure, great caution is advisable in the use of data relating to the Angolan population, especially for the period prior to 1940.

Indeed, from the time of arrival of the Portuguese in the 15th Century until 1920 - around the time when the pacification of the Angolan territory was accomplished - the area controlled by the Portuguese continued to expand, rendering impossible any analysis of population evolution through time.

Furthermore, all the surveys carried out before 1940 were of a non-statistical nature.

2) Population considered

Whereas "de jure" and "de facto" criteria were used in other territories under Portuguese administration (notably in Guinea-Bissau and Mozambique), the population considered in the various censuses was "de facto".

As will be seen later, a substantial portion of the black population lived abroad. Indeed, the arbitrary fashion in which the frontiers had been fixed, the arrival of colonists and the state of war which the country has experienced since 1961, resulted in population movements which were sometimes on a large scale, as was the case in the areas most hit by the rebellion (between 1960 and 1970, the districts of Zaire and Moxico lost 66% and 31% respectively of their population).

3) Field of enquiry

For the purposes of enumeration, the country was, from 1940 onwards, divided into enumeration areas in turn sub-divided into zones corresponding to administrative "postos"(1). Control and responsibility for operations were borne by the administrative authorities, except in the capital Luanda where they were controlled by the Statistical Office.

With regard to the nomads who belong to the non-Bantu peoples of the country (Hottentots-Bushmen and Vata-Kimbari) who numbered less than 13 000 (according to the 1960 census), it has not been possible to find information relating to the problems which this type of population poses at the time of collection.

(1) The "postos" represented the basic administrative units.

4) Factors likely to influence the quality of collection

In the introduction to the first volume of the census of 1940, Alberto de Lemos refers to a letter dated 15th July 1778, sent to the Minister in charge by the governor D. Antonio de Lencastre, which evokes the fear that this kind of activity aroused among the blacks: "...it is only today that I am able to send you a list of the inhabitants of this kingdom because the immensity of the bush and the mistrust raised by the news among the savages delayed the execution of your orders, and I wish to advise you of the difficulties we had to convince the chiefs of the savages to present a list of all their children and subjects...", "...due to the fact they feared that this news was aimed at taking away some of their children..." [3, p. 3] .

This feeling must have prevailed up to the present time, due on one hand to the slave trade which lasted until the end of the last century, and on the other hand, to the institution which replaced it - forced labour (1).

Furthermore, factors such as territorial expansion, the dispersion of the black population, the absence of rapid lines of communication in some areas of the country, the outbreak of the war of liberation, and the difficulties in recruiting suitably qualified agents, certainly contributed to the poor quality of collected data.

Finally, it should be pointed out that the base of enumeration was the individual; each person having to keep for a certain length of time the document certifying his or her enumeration, which, among other things, helped to prevent double-counting.

III. CONCLUSIONS

1) Concerning the results

Suggested evolution of population since the beginning of the century

Taking into account the somewhat whimsical nature of figures relating to the black population prior to 1940 (see Tables 1 and 2 above), and considering the problem posed by Angolans living abroad (in exile or working there) whose number has continued to increase since 1961, the figures concerning this group have been assessed in the following way:

- for the period between 1900 and 1930, the estimates made by the Statistical Offices of Angola and published in the first volume of the 1950 census have been used [9, p. 16] as they appeared to be the most reasonable.

(1) Which lasted until 1962.

- The figures for 1940 and 1950 are those of the respective censuses.
- R. Pélissier's estimate of the number of Angolans in exile appears to be the most realistic - according to him, there would be at least 150 000 Angolans in this situation [8, p. 48] - this figure has been added to that of the population enumerated in 1960, thus obtaining a figure for the black population at that date.
- for 1970, to the enumerated population has been added the number of Angolan refugees as at 30th June, 1971 (1), that is, only 6 months after the census had been carried out.

The population of the various groups making up the population of Angola would have evolved as follows during the period 1900-1970:

Table 4

ANGOLA - POPULATION SINCE THE BEGINNING OF THIS CENTURY
BY SOMATIC TYPES

YEAR	SOMATIC TYPES				TOTAL
	Blacks	Whites	Half Castes	Others	
1900	2 700 000	9 000	7 000	-	2 716 000
1910	2 900 000	12 000	9 500	-	2 921 500
1920	3 100 000	20 700	10 500	-	3 130 700
1930	3 300 000	30 000	13 500	-	3 343 560
1940	3 665 829	44 083	28 035	63	3 738 010
1950	4 036 687	78 826	29 648	105	4 145 266
1960	4 754 362	175 529	53 392	166	4 983 449
1970	5 665 174	280 101	89 337	389	6 035 001

(1) According to Pélissier "...the number of refugees enumerated as such by the United Nations amounted to 413 810 at the end of June 1971 (probably more than 415 000, counting refugees in Congo Brazzaville), that is 400 000 in Zaire, 3 800 in Botswana, 10 000 in Zambia, 10 in Kenya, [8, p. 48] .

Suggested estimate for 1st January, 1975

The revolution of April 1974 put an end to the hostilities and allowed the return of many Angolans for whom the war no longer held any terror (1). To some extent, however, it was also responsible for the return to Portugal of the overwhelming majority of the white population (in all likelihood, more than 95% of them left the country) and a few hundred blacks and half castes who had possibly been involved with the colonial authority.

Having said this, for want of accurate data on the proportion of the white and half caste population to have left the country, the estimate of the population of Angola as at 1st January 1975 is based only on the black population.

Thus, at that date, the figure for this group would be approximately 6.1 million, a figure based on the 1970 estimate and the mean annual growth rate recorded during the inter-censal period 1960-1970.

2) Concerning sources

Considering the poor quality of censuses (2) and also the fact that civil registration was effective only in towns (only 10.9% of the black population lived in towns in 1970), it would seem that complete revision is necessary, especially as regards collection.

- (1) In 1975, the number of Angolans living in Zaire would have been only 255 000 according to the EDOZA survey [5] and the estimates of the Office for Political Affairs in Zaire (more precisely, 58 000 in the region of Lower-Zaire where Angolans represented 98% of the foreign population, c. 20 000 in Matadi, i.e. 15% of the town population, and 176 000 in Kinshasa, i.e. almost 11% of the population of the capital of Zaire).
- (2) The United Nations index showed the following values for the various censuses:

Census	Index of sex ratio regulation	Index of age structure regulation		Combined index
		M	F	
1940	9.9	12.7	14.4	56.8
1950	10.7	9.3	10.5	51.9
1960	9.7	9.1	11.3	49.5
1970	13.7	10.8	17.9	69.8

Source: [4, p. 20]

Until the recent independence of the country brings the stability which has been lacking for so long, it would seem to us that the immediate tasks should be the re-organisation of the Civil Registration system and the conducting of sample surveys in order to fill in the existing gaps.

However, as neither the priorities of the Angolan Government nor the infrastructure available to them at the present time are known, it would be premature to advise this type of action rather than any other before an assessment of needs and priorities is made.

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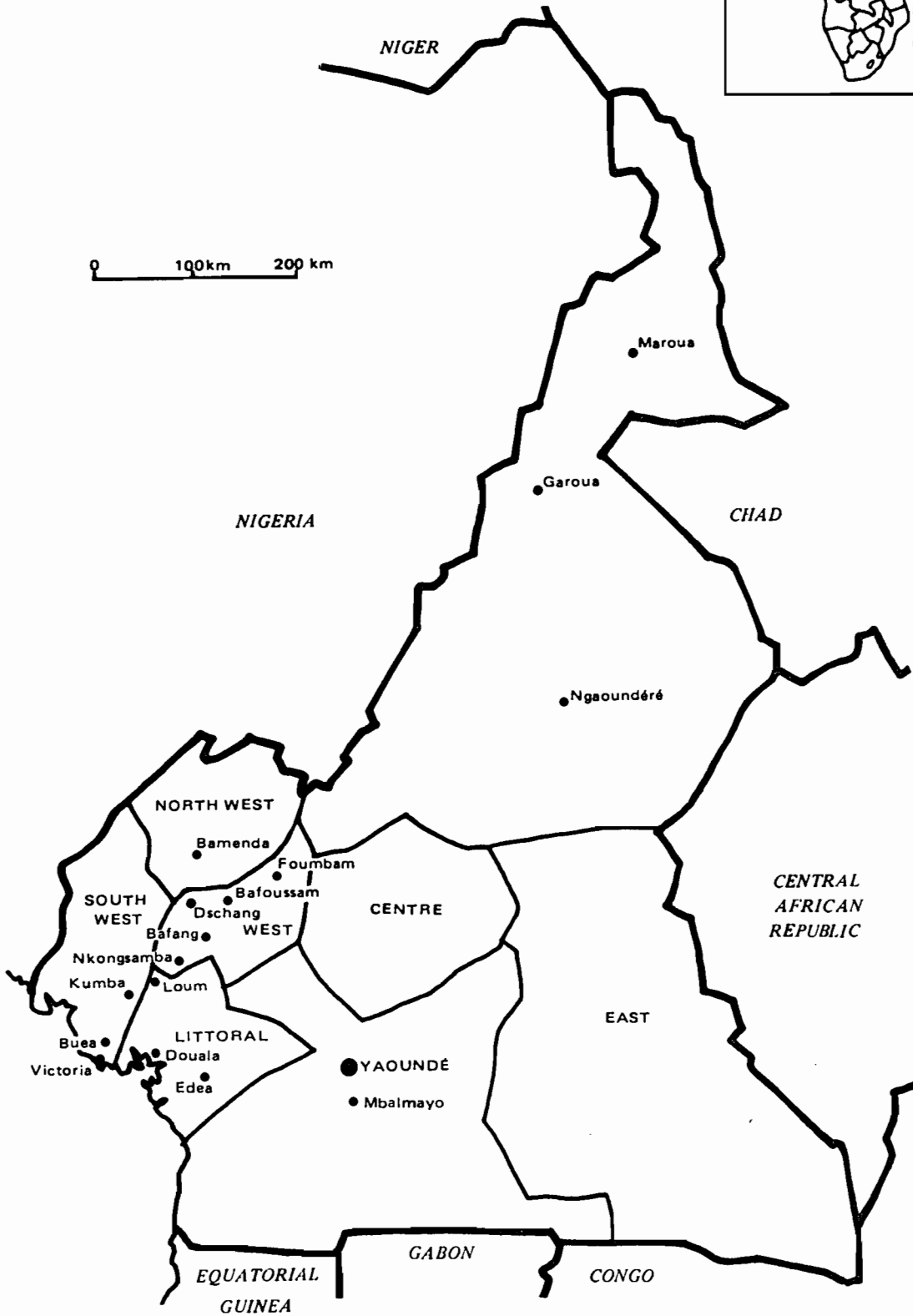
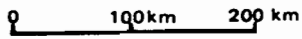
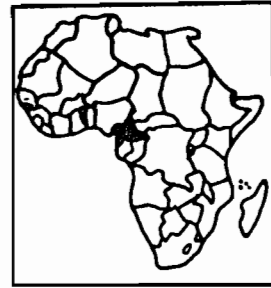
CAMEROON

Abel Nkougourou Ebongue

Etienne Fotso

JANUARY 1980

CAMEROON



C A M E R O O N

I. PRESENTATION OF SOURCES

Attempts to measure the population of Cameroon go back a long way in time. From the time of the German occupation to independence, through French and British colonisation, several more or less successful attempts have been made to enumerate the population, which have produced results of a quality varying from one operation to another, one administration to another and one period to another.

Two major phases can be distinguished in demographical research in Cameroon :

- research from the colonial period to independence
- demographic research since independence

1) Research into the population of Cameroon before independence

The original sources of data are essentially of three kinds:

a) The annual reports of the colonial administration to the League of Nations

The first report sent to the League of Nations dates from 1921. Before that date, the last German official figures date from 1912-1913. However, at the time of their withdrawal, the Germans must have destroyed most of their archives, and among them, those concerning the demographic studies they had carried out. The major drawback of the annual reports of the administrators is that the proposed figures were most of the time based on the number of taxpayers surveyed by the district officers, the administration often being content to simply divide the total amount of tax levied by the value per head of the poll tax under the assumption that the taxpayers represented half of the population. Consequently, the results published in the various reports are sometimes divergent and very contradictory, even when they are based on administrative censuses.

b) Administrative censuses

Whether under the German, French or English colonial administration, or after the independence of the country, attempts to enumerate the population, carried out for tax purposes or recruitment of a native labour force, led to the implementation of administrative censuses, the methods of which evolved over time.

During the early years of colonisation, data came from information provided by native chiefs. From 1933 onwards, French administrators set up in the area under French mandate a system of population registration based on a nominative census. "Censuses are carried out during circuits. These circuits are carried out with a frequency such that sub-divisions are entirely visited every three years on average.

As the census was formerly used for tax purposes and in fact the sub-division officer was sometimes accompanied by a doctor, Africans tried to absent themselves, being helped in this by the suppression of passes. Consequently, the figures thus revealed must be considered as under-estimates.

Towards 1945, very different enumeration procedures were used, varying from simple household enumeration (North Cameroon) to individual enumeration on card (Wouri). Whereas in certain sub-divisions only heads of household possessed a card (his wives, children, etc... being listed on the same card); in some others, every adult had a card, and these were then grouped by households, then households by villages..." [1]

c) Population censuses

After 1950, the efforts made by the French administration to acquire a better knowledge of the population of Cameroon since the time of occupation were oriented towards a different type of investigation: the population censuses carried out by the "Service de la Statistique Générale". Collection of data was made by direct interview of people within their households by the enumerators.

From 1950 to 1958, five censuses were carried out, often covering towns: Douala (1955), the town of Edéa (1956), Yaoundé (1957), the town of Ebolowa (1958), the sub-division of Mbalmayo (1959).

For the rest of the country, the source of demographic data remained essentially the administrative census.

2) Demographic research in Cameroon since independence

Apart from the five censuses mentioned above, collection of demographic data remained at the bottom of the list of priorities. The consequence was that when Cameroon became independent, the exact size of its population was not known, estimated at the time to be 3 200 000 for Eastern Cameroon (French Protectorate) and 850 000 for Western Cameroon (British Cameroon).

This is why as early as 1959, the Government of Cameroon, introduced in its budget an item entitled "world census of population and agriculture" conforming to the recommendations of the United Nations. At the same time, it obtained from FIDES the financing of a sample demographic survey covering the whole country.

The shortage of the credits allocated and the insecurity which prevailed in the southern part of the country did not permit the implementation of such a project. Regional surveys were carried out instead.

This is how, just after independence, the country became the object of regional demographic surveys. From January to June 1960, a survey was carried out in North-Bénoué, in the far north of the country. In 1961, it was the turn of the regions of South-Bénoué and of Adamaoua. From March to November 1962, a survey was carried out in the Eastern and South Central province (south-east), including the census of the town of Yaoundé (1962). Surveys of the coastal area took place from January 1964 to February 1965, including the census of the town of Douala and of Western Cameroon. Finally, in 1965, a survey reached the Bamiléké region and its neighbouring departments (Moung, Nkam, Bamoun, and the district of Ndikiniméki).

These surveys form the first scientific data base for the population of Cameroon. They provide regional results which can be aggregated despite the long duration of operations which lasted six years.

In 1966/67 the Ministry of Territorial Administration carried out an administrative census on the whole territory. This was an operation of a new kind. One period was selected and imposed on the administrative authorities and a census form (by household) devised. On the other hand, the Direction de la Statistique had provided the Ministry of Territorial Administration with enumerators who were experienced in collection problems. Unfortunately, numerous difficulties hindered the successful completion of this operation: lack of supervision, on the spot replacement of enumerators, etc. The consequence was that in many units operations were never completed. For this reason, results were never made available.

In 1969 the National Statistical and Accounts Office carried out a demographic sample survey in Yaoundé.

Since 1973 the Institute of Demographic Training and Research of Yaoundé (IFORD) has carried out the census of the towns of Bafia, Manjo, Sangmélima, Ngaoundéré and Mbalmayo as part of its training programme.

In 1976 Cameroon carried out its first general census of population and housing. It made possible an assessment of the size and structure of the population, as well as other population characteristics.

In 1978 a national survey on fertility was started and is still under way.

Apart from these operations of a purely demographic nature, other surveys providing reliable population data have been carried out. Among these are the survey on standard of living in coca-producing areas, the agricultural census, the road traffic survey on the North-Yaoundé route, etc.

It can therefore be stated that the Cameroon authorities accepted that a knowledge of the population was indispensable for economic and social development and that they have therefore spared no effort in the past twenty years in their demographic studies.

These different studies can be used to arrive at estimates of the population of the country.

II. EVOLUTION OF THE POPULATION OF CAMEROON

Based on the quality of sources, this evaluation is examined in two stages :

- the period before independence, characterised by a lack of reliable data,
- the period after independence, during which several statistical were carried out, providing researchers with data of better quality.

1) The Colonial Period

Far more information proved to be available on Eastern Cameroon (French Cameroon) than on Western Cameroon (British Cameroon). For this reason, the two parts of Cameroon are studied separately.

a) Evolution of the population of Eastern Cameroon

During the colonial period, it was customary to distinguish between the indigenous and the non-native population. Their evolution is studied separately.

*Evolution of the indigenous population

Table 5 shows the evolution of the indigenous population of Eastern Cameroon. As mentioned earlier, the quality of sources improved over time. It is convenient to distinguish, therefore, between three distinct periods: 1912-1939, 1939-1950 and 1950-1957.

The 1912-1939 period

The first estimate is that of the period 1912-1913 originating from the last German official figures. The population of Cameroon was then estimated at 2 649 000 inhabitants of which about 2 000 000 were in the part which was to be placed under French mandate.

In 1921 France sent the League of Nations its first report on Cameroon. It gave 3 000 000 as the minimum population. During the same year, three different reports provided the following data :

Table 5

CAMEROON - EVALUATION OF THE INDIGENOUS POPULATION OF
EASTERN CAMEROON BASED ON AVAILABLE STATISTICS

YEAR	INDIGENOUS POPULATION in 000's	YEAR	INDIGENOUS POPULATION in 000's
1912	2 000	1939	2 606
1921	2 600	1940	2 632
1923	2 756	1941	2 703
1924	2 770	1942	2 717
1925	2 110	1943	2 767
1926	1 877	1944	2 798
1927	1 880	1945	2 816
1928	1 888	1946	2 816
1929	1 923	1947	2 816
1930	2 186	1948	2 902
1931	2 200	1949	2 902
1932	2 222	1950	3 061
1933	2 224	1951	3 063
1934	2 228	1952	3 065
1935	2 339	1953	3 072
1936	2 340	1954	3 118
1937	2 377	1955	3 144
1938	2 514	1956	3 171
		1957	3 187

Sources: 1912 - Last figures left by the Germans

1921 - Census of French colonies

Other dates - reports to the League of Nations, administrative censuses, statistical yearbooks and reports from health services.

-
- In his report on the future development of French colonies, presented to the Chamber of Deputies on 12 April 1921, A. Sarraut put forward the figure of 3 000 000 for the indigenous population of Cameroon.
 - The Census of French Colonies estimated this same population at 2 600 000.
 - Finally, the same population is estimated at 3 500 000 indigenous inhabitants by the Report on the Administration of Cameroon presented to the Chamber of Deputies on 7 September 1921 by the Minister for Colonies.

The above example shows the divergence of data originating from different sources. In this specific case, it is thought that the figure put forward in the census is likely to be the most accurate due to the effort displayed during the enumeration operations. On the whole the figures shown in Table 5 are those which have been selected as the most probable among several sources.

The evolution of the size of the indigenous population from 1912 to 1939 shows very uneven variations from one year to another.

Table 6

CAMEROON - EVOLUTION OF THE INDIGENOUS POPULATION OF
EASTERN CAMEROON FROM 1912 TO 1939

Period	1912	1923	1924	1926	1927	1931	1933	1934	1936	1937	1938
	to 1921	to 1924	to 1926	to 1917	to 1931	to 1933	to 1934	to 1936	to 1937	to 1938	to 1939
Variation en %	+23	+6	-47	0	+15	+3	-3	+5	+2	+6	+3

Such variations cannot be explained as being the result of natural evolution. The reasons must be found elsewhere.

The first one is the quality of sources. The unexplained discrepancies between the various historical sources have already been noted above. The figures put forward were mostly based on the number of taxpayers counted by district administrative officers, and must very often be regarded cautiously. Besides, figures were often adjusted by administrators according to the use which was going to be made of them. In fact "it is likely that political considerations led the central administration in 1924 to adjust the figures provided by the enumerations of 1923 in order to arrive at a little changed total". [8]

The sharp decrease from 1924 to 1926 can be explained by the adjustment made to the figures, an adjustment which is justified by two important points:

- the official report of 1926 shows that the population must have been of the order of 2 000 000 and that the exaggeration of previous evaluations had been overestimated. [8, p.22]
- besides, M. BREUIL believed that the population of French Cameroon in 1926 could be between 2 200 000 and 2 500 000 [8, p. 22]. Subsequent censuses tend to bear him out.

The difference between the year 1921 and the years 1924 and 1926 also deserves an explanation. It is possible that district officers exaggerated the population size of the regions placed under their authority, maybe in order to make up, in the data provided by native chiefs, for omissions due to the collection method itself. These omissions were certainly overestimated, unless the results of the 1926 census were far below reality.

In any case, the figures put forward before 1931 must be considered as being very approximate.

It is not until 1931 that the French colonial administration started to carry out more thorough enumerations leading to better evaluations until 1939. It must also be noted that at that time, besides a marked development in indigenous vital records with the number of centres going up from 68 in August 1930 to 323 in 1935, special surveys were organised with the purpose of collecting data on births, deaths and population composition.

Despite this effort to carry out more thorough enumerations between 1931 and 1939, variations from one year to another continue to be rather random (see Table 6). It must be emphasised that these variations could not be justified on the grounds of natural movement. Several hypotheses can be put forward, in particular:

- more thorough enumeration
- systematic overestimation of some components of the population

They can explain the substantial increase in population. This is the case for example for the period 1931-33 about which is said in the official report of 1933 "Having been enumerated in the most accurate way possible, the indigenous population shows on the whole a marked increase compared with the figures of the 1931 census".

The sharp decreases are more likely to have been the result of incomplete enumerations and adjustments to previous estimates thought to be excessive rather than of migratory movements which were after all rather limited at the time.

It can be stated therefore that the haphazard variations from one year to another of the population of Cameroon from 1921 to 1939 mainly arise from the undependability of the various censuses or enumerations, though from 1931 onwards, an upward trend is discernible, as the quality of sources improved.

This undependability is connected with the difficulties of investigation which are of two kinds according to whether they relate to the environment studied or the methods of investigation used.

- Difficulties due to environment

Apart from difficulties of access, which are considerable in some regions, there must be noted also :

- . the mobility of the population
- . changes in administrative districts (boundaries and names)
- . changes in name of individuals during their lifetime
- . the frequency of identical first and second names among the inhabitants of a locality
- . the lack of general education among the majority of the population
- . the diversity of languages and dialects

- Difficulties arising from the methods used

The tax assessment purpose of enumeration operations led to :

- . a confusion of "age classes" and of "categories of people liable to tax" and their concomitant variations according to the territory and period
- . the unavoidable lack of interest of the enumerators in the "non-taxables" (children, the elderly, the disabled)
- . lack of statistical preparation and shortage of staff available for censuses
- . lack of regularity in the timing of operations

On the subject of this period between the two wars, M. Kuczinski [7, pp.94-95] summarises the situation in the conclusion of his demographic study on French Cameroon :

"The enumerations of 1931-38, giving totals between 2 240 000 and 2 514 000 cannot be considered as satisfactory given that they show variances for each district which, until they had been explained in an acceptable fashion, have had to be viewed as the consequence of considerable over or underestimates. It is therefore not possible to say if the population of French Cameroon grew or declined during the twenty years of French occupation."

This opinion, valid as it may be, may nevertheless be qualified. After critical appraisal, these figures still reveal a tendency to increase. But it is impossible to make an exact estimate of the growth rate.

The period from 1939 to 1950

The period was marked by two quite thorough administrative censuses: the censuses of 1945 [1] and 1950 [3] .

Rising from 2 816 000 in 1945 to 3 061 000 in 1950, the indigenous population of Cameroon recorded a mean annual increase of 1.7% for the whole country.

Table 7

CAMEROON - EVOLUTION OF THE INDIGENOUS POPULATION OF
EASTERN CAMEROON FROM 1945 TO 1950

REGION	POPULATION IN THOUSANDS		GROWTH	
	1945	1950	Absolute	Mean Annual (%)
Adamaoua and North	1 072.5	1 202.8	130.3	2.3
South of Adamaoua	1 743.5	1 857.8	114.3	1.3
Together	2 816.0	3 060.6	244.6	1.7

But as Table 7 above shows, the difference, i.e. 244 000 inhabitants, comes mainly from the Adamaoua and Northern region (+2.3% per annum).

This more rapid growth in the north by comparison with the south does not however appear to be justifiable. It would rather appear to be related to the greater influence of the Administration which allowed more precise enumeration. However, a demographic surge among the animist population can be noted at this time.

The period from 1950 to 1959

This period was marked, as noted earlier, by the carrying out of four statistical censuses covering the towns of Douala (1955), Edea (1956), Yaoundé (1957), Ebolowa (1958) and the Mbalmayo sub-division (1959). For the rest of the country the estimates have been based on the administrative censuses. However, it is likely that as the exercise had by now become more familiar both to the people and the administrators, the data obtained should be increasingly closer to reality.

Table 5 shows the evolution of the figures for the period. An upward trend of around 1% per annum is apparent. On the basis of this trend the indigenous population of Cameroon on the 1st January 1960, Independence Day, would be around 3 200 000.

* Evolution of the non-indigenous population of Eastern Cameroon

Several censuses have been carried out among the non-indigenous population of Eastern Cameroon of which the most recent are those of: 1946 (15 April), 1951 (12 November) and 1957 (15 January). These censuses form part of the general censuses of the non-indigenous population of French overseas territories.

By "non-indigenous" was meant all persons either not themselves originating from Cameroon territory, or at least one of whose parents was not from Cameroon.

The results of the various operations, shown in Table 8, indicate the evolution of the non-indigenous population of Eastern Cameroon.

Knowing the size of the indigenous and the non-indigenous population, the evolution of the total population of Eastern Cameroon can be depicted. This is shown in Table 9.

Taking into account the observed trends, it can therefore be stated that on 1st January 1960, the date of the Independence of Cameroon, the population of Eastern Cameroon was in the order of 3 400 000 inhabitants.

Table 8

CAMEROON - EVOLUTION OF THE NON-INDIGENOUS POPULATION
OF EASTERN CAMEROON

DATES	TOTAL	Of which:	
		Douala	Yaoundé
1922	741	400	...
1927	1 909	819	325
1st July 1931	2 163	878	423
1st July 1936	2 383	730	880*
1st January 1941	2 857	791	670*
15th April 1946	3 891	1 406	920
12th November 1951	12 269	4 486	2 311
15th January 1957	16 157	5 410	3 750

* Region of Nyong and Sanaga

Source [13]

Table 9

CAMEROON - EVOLUTION OF THE TOTAL POPULATION
OF EASTERN CAMEROON
(colonial period)

YEAR	INDIGENOUS POPULATION in 000's	NON-INDIGENOUS POPULATION	TOTAL in 000's
1922	2 678	741	2 679
1927	1 880	1 909	1 882
1931	2 200	2 163	2 202
1936	2 340	2 383	2 342
1941	2 703	2 857	2 706
1946	2 816	3 891	2 820
1951	3 063	12 269	3 075
1957	3 187	16 157	3 203

b) Evolution of population figures for Western Cameroon

As has been pointed out above, little data are available for Western Cameroon. The first global data found date back only to 1953.

Before then the last official German figures of 1912-13 gave a population for British Cameroon of 649 000. It must be noted that British Cameroon at the time was larger than Western Cameroon because one of its parts, "Northern Cameroon" was later joined to the Federation of Nigeria.

According to the various reports of the British administration, Western Cameroon experienced the evolution shown in Table 10.

The population of Western Cameroon at 1 January 1960, therefore was in the region of 900 000.

By way of a conclusion to this first section, it can be said that at the time of its independence, the population of the United Republic of Cameroon must have been in the order of 4 300 000 inhabitants.

Table 10

CAMEROON - EVOLUTION OF THE POPULATION OF WESTERN CAMEROON
BEFORE INDEPENDENCE

DEPARTMENTS	1953			1954			1959		
	M	F	T	M	F	T	M	F	T
Bamenda	126.2	138.6	264.8	127.5	139.9	267.4	143.0	157.0	300.0
Nkambo	41.0	43.6	84.6	41.5	44.0	85.5	46.0	49.0	95.0
Wum	36.7	43.0	79.6	37.0	43.4	80.4	41.4	48.6	90.0
Victoria	55.6	29.9	85.6	56.1	30.2	86.3	61.7	33.3	95.0
Kumba	76.7	61.1	137.8	77.5	61.6	139.1	88.0	72.0	160.0
Mamfe	47.8	52.6	100.4	48.3	53.2	101.5	52.8	58.2	110.0
TOTAL	384.0	368.8	752.8	387.9	372.3	760.2	432.9	418.1	850.0

Source: [4]

2) The period after independence

Four major operations on a national scale have been undertaken in Cameroon since independence. These are :

- the regional surveys of 1960-65
- the administrative census of 1967
- the agricultural census of 1972-73
- the general census of population

The administrative census of 1967 was never completed in the field and for this reason never gave rise to a report. The few figures published by ORSTOM on this operation were in fact estimates.

As for the Agricultural Census, it covered only the agricultural population and for this reason did not give an estimate for the total population of the country.

Only the data given by the surveys of 1960-65 and the General Census of Population and Housing will consequently be used here.

a) The population of Cameroon based on the 1960-65 Surveys

These surveys present two major drawbacks :

* The division into regions :

The division of the territory into survey regions was done with a view to regrouping the population into homogenous groups in order to obtain a better understanding of the demographic phenomena (such as family structure and economic activity).

But if breaking down the area in this way helps in discerning socio-demographic phenomena, it has the inconvenience of not permitting the presentation of results according to administrative units, indispensable to most users.

* The duration of the collection period :

The second major drawback of these surveys resides in the fact that they were not carried out at the same time. As has been pointed out above, the surveys took six years to complete, too long to allow a meaningful comparison between the various regional statistics.

Despite these faults, however, the statistics allow an estimate of the total population of Cameroon. Indeed the dates of the various surveys mentioned above taken together determine a median

date, which is 1 August 1964. A projection of the statistics from the various regions at this date (1), adding complementary data on the areas not covered by the survey, allows an estimate of the population of the United Republic of Cameroon at 1 August 1964 of around 5 400 000 inhabitants.

b) The General Census of Population and Housing of April 1976

The United Republic of Cameroon carried out in April 1976 its first general census of population and housing. This made available a precise figure for the Cameroon population for the first time. It was concerned with the de jure population (residents present and residents absent).

The population enumerated was 7 131 833 inhabitants. However, the evaluation survey carried out at the conclusion of the census indicated an underestimate of approximately 7%. It is for this reason that Decree N° 77/786 of September 30th, 1977, announcing the results of the general census of population and housing in April 1976, fixes the population of the United Republic of Cameroon at 7 663 246 inhabitants, of which 51% females.

This census made possible for the first time a breakdown of the population of the United Republic of Cameroon by administrative region. This is shown in Table 11.

Table 11

CAMEROON - BREAKDOWN OF THE POPULATION OF
THE UNITED REPUBLIC OF CAMEROON BY PROVINCE

(April 1976)

PROVINCES	POPULATION	DENSITY
South Centre	1 491 945	12.9
East	366 235	3.4
North	2 233 257	13.6
North West	980 531	56.7
West	1 035 597	74.5
South West	620 515	24.9
Coast	935 166	46.2
United Republic of Cameroon	7 663 246	16.5

Source : [17]

(1) $P_t = P_o (1 + R)^t$

III. CONCLUSIONS

Knowledge of the population of the United Republic of has improved progressively over time. Data were essentially based on estimates by the colonial administrators in the early days, then on administrative censuses. As the administrative infrastructure of the country expanded, these censuses became more and more effective. However, no general census of population was possible during the colonial period. Only a few towns were subject to censuses.

Later, soon after independence, regional demographic censuses were carried out which, despite the long period of time necessary to cover the whole country, when taken together provide the first estimates of the national population based on a scientific source.

These surveys however did not make possible a breakdown of population into administrative units. The general census of population and housing in April 1976 filled this gap and has provided at the same time for the first time an accurate figure for the total population.

The post-censal work carried out, including a National Survey on Fertility and on Nutrition, forms, in conjunction with the statistics from the later census, a substantial body of data which remains to be explained.

As far as population is concerned, the evolution has been as follows :

Table 12

CAMEROON - PROPOSED EVOLUTION OF POPULATION

PERIODS	POPULATION IN THOUSANDS
1912 - 1913	2 649
1953	3 872
1954	3 900
1960	4 300
1964	5 400
1976	7 663

The population on 1 January 1975 is estimated to be 7 423 770 assuming growth rate of 2.5%.

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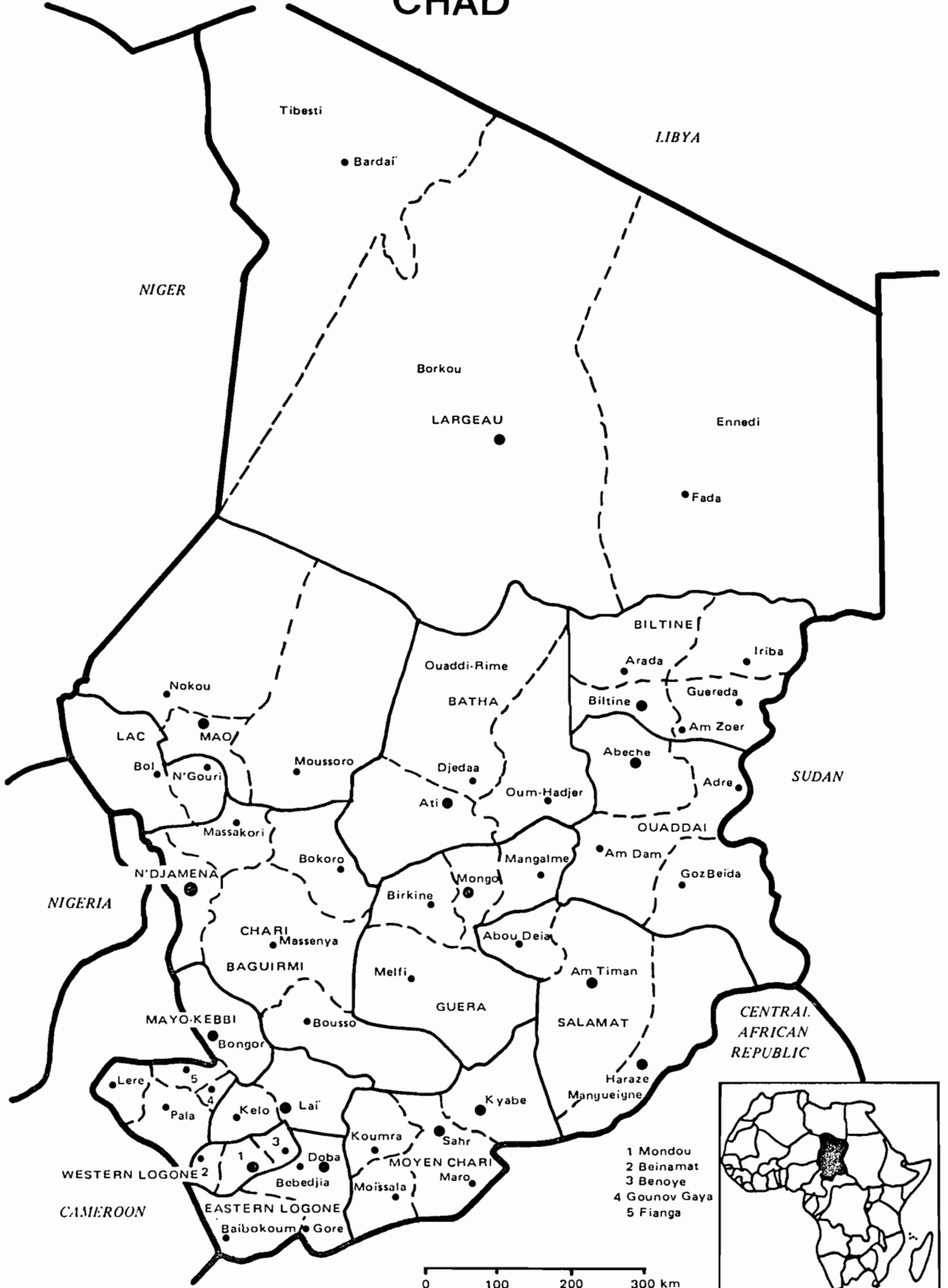
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CHAD

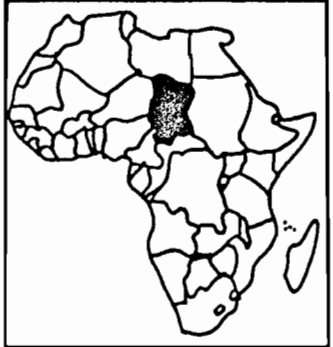
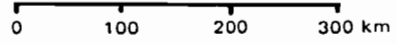
Ouaidou G. Nassour

NOVEMBER 1979

CHAD



- 1 Mondou
- 2 Beinamat
- 3 Benoye
- 4 Gounov Gaya
- 5 Fianga



C H A D

Contrary to the majority of African states which have carried out national censuses during the decade 1970-80, Chad, because of the Civil War which has lasted more than 13 years, has not been able to complete the general population census, for which the cartographic work that began in January 1975 has been suspended since 1977.

Apart from administrative census, the only scientific studies concerning the population of Chad have been the demographic sample survey of 1964 and the "improved" administrative census of March 1968. Based on the 1964 survey, demographic forecasts for Chad covering the period 1963-1985 were made by the Demographic Department of the U.N. Economic Commission for Africa (E.C.A.).

I. GENERAL BACKGROUND

1) Geographical situation and administrative structures of the Republic of Chad

Situated in Central Africa, the Republic of Chad covers an area of 1 284 000 km², being the fifth largest country in Africa in terms of surface area. Between 8° and 24° North by latitude and 14° and 24° East by longitude, Chad is characterised by its remoteness from the sea, being around 1 500 km from the coast. The neighbouring countries are : the Republic of Sudan to the east, Libya to the north, the Republic of Niger, Nigeria and Cameroon to the west, and the Central African Republic to the south.

Three regions can be distinguished :

a) Regions of Sahara and Borkou-Ennedi-Tibesti (BET)

Between the 14th parallel and the Libyan frontier, this desert zone covers about 750 000 km². Rainfall is very low, less than 300 mm per annum. The very sparse vegetation is concentrated around the foot of the massifs of Tibesti and Ennedi. The population of this region, very unevenly distributed, is islamic and made up mainly of the Teda-Daza and Kanembou to the north-west and arabic groups to the south-east. Originally white, the population is now very mixed. The dispersion of the population is reinforced by a mobility due to the nature of the environment.

b) The Central Region and East Chad

Situated to the south of the preceding area, this region is bounded to the south-west by the Chari Basin and covers about 373 900 km². Rainfall is higher than to the north and more spread in time (400 to 900 mm per annum). The wadis only flow during a few months in the year.

This is a saharo-sudanian zone of scrubland steppes where livestock rearing is the most important activity. The cultivation of millet, cotton and groundnuts is carried out along the wadis. The population, which is made up of sedentary cultivators and semi-nomadic livestock rearers, is generally islamic, except in a few districts of Guera, and consists essentially of groups of nilotic origin: Ouadians, Baguirmians, Arabs, etc.

c) The region of South Chad

This is the most populated area of Chad. It is made up of the two basins of Ghari and Logone and extends over approximately 130 060 km². Rainfall exceeds 700 mm per annum and reaches 1200-1300 mm at Sarh. The sudano-guinean type vegetation takes the form of savannas with baobabs and karitas with grasslands in the flood areas. It is first and foremost a cotton area, but rice, groundnuts and other staple foods are also grown there.

The population, which is on the whole unevenly distributed, is made up of crop farmers or sedentary pastoral farmers for whom fishing often represents a substantial addition to their diet. This region is mainly inhabited by Saras who form the most important ethnic group in Chad and who live in the valleys of Chari and Logone and by the group in the west (Toubouris, Mondang, Marba, Moussei, etc.) in Mayo Kebbi.

The administrative organisation of Chad splits the country into 14 prefectures made up of sub-prefectures, administrative districts and cantons, with villages at the bottom end of the scale.

2) The frontiers of the Republic of Chad - an historical background [18]

Chad became a Republic in November 1958, and after being a member state of the Community, it obtained its independence on 11th August 1960. The new state has inherited from colonial times its present frontiers with its neighbours (Libya, Sudan, Niger, Nigeria, Cameroon, and the Central African Republic).

Two kinds of legacy must be mentioned :

- the frontiers with Libya, Sudan, Nigeria and Cameroon were the result of international agreements signed at the beginning of the century between France, which wanted at any price to launch her conquest of the Chad Basin with recognised "rights", and the two other imperial powers, Britain and Germany, with which French interests clashed.

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- frontiers with Niger and the Central African Republic were simply the result of administrative decrees, issued much later, which divided French Africa into various colonies.
 - in 1890, before the conquest, Chad was made up of kingdoms: the Ouaddai, the Baguirmi, the Bornou. This was also the time of "Chefferies" which were non-centralised village organisations where the elders regulated, according to custom, social and religious life.

a) Cameroon-Chad frontier 1894-1919

* 1894 : First frontier - "The Duck's Bill"

An agreement signed in Berlin on 15 March 1894 between France and Germany established the border between Cameroon and the French Congo : the border line follows the 15° E meridian, then forms a shape nicknamed "The Duck's Bill" and extends as far as Milton (Chad) on the Chari by the 10th parallel. The Chadian villages of Bongor, Milton, Mailo, Koundoul and Guelindeg therefore became Cameroones.

* 1908 : Second frontier - The Duck's Bill is reduced

A treaty signed in Berlin on 18 April 1908 altered the 1894 frontier. "Chad gained the tip of the "Duck's Bill" but lost some ground around Lamé and the 10th parallel, and above all to the North-East of Baibokoum. Gains and losses made an even balance. Bongor, Guelinding, Koundoul still remained in Cameroon."

* 1911 - Third frontier - "Great Cameroon" as far as Lai and Gore

"In 1911, the Germans let France establish its "protectorate" over Morocco, but received "compensation" in the Congo. Cameroon gained 25 900 km² at the expense of Gabon, Middle-Congo, Oubangui-Chari and Chad. The present day sub-prefectures of Baibokoum, Bebedjia, Moundou, Benoyé, Bainmar, Kelo, Bere, Gounou-Gaya, Fianga, Lere and Pala became Cameroon's possessions. However, Chad gained what remained of the "Duck's Bill": Bongor, Guelendeng and Koundoul became Chadian."

* 1914 : Fourth frontier - The present day frontier

As a consequence of the Treaty of Versailles on 28 June 1919, the defeated Germany lost all its colonies "all that Chad had lost in 1911 was restored to it; it also kept what it had already gained (the tip of the "Duck's Bill")." The frontier line established in 1919 constitutes the present day frontier between the Republics of Chad and Cameroon.

b) Libya-Chad and Sudan-Chad frontiers* 1919 - Libyan frontier line is defined

"The Franco-British Convention of 8 September 1919 defined the northern frontier. In 1899, the angle of the diagonal which comes down from the Tropic of Cancer was not agreed. The British and French maps did not correspond. There was talk of a vague "south-east direction". It was then decided that this diagonal would join the 24° meridian at a latitude of 19° 30' north".

* 1924 - The Sudanese frontier is defined

After the capture of Abéché (1906) and the British penetration at Dar-Four (1916), a provisional frontier between Ouaddai and Dar-Four was established. The 1919 Convention recognised a first frontier. From 1921 to 1923, a delimitation mission made a detailed outline which was ratified by the Declaration of 21 January 1924".

c) Nigeria-Chad frontiers 1898-1906

Wholly situated in the waters of Lake Chad, the border between Chad and Nigeria was definitively determined by the treaty signed in London on 29 May 1906.

d) Central Africa-Chad frontiers 1906-1936

"When it was constituted in 1900, the 'Military Territory of the Country and Protectorate of Chad' included much of the present day CAE". On 11 February 1906, the 'Military Territory of Chad' and the Oubangui-Chari were created. From 1910 onwards, the Oubangui frontier was very much the same as today, especially when Baibokoum was united to Chad (in 1920). However, from 1925 onwards, Middle-Chari and Middle-Logone came under the jurisdiction of the Oubangui-Chari. Up till 1936, changes were frequent". To summarise :

- 31 December 1925 to 18 November 1932: Middle-Chari and Middle-Logone (Tandjile and the two present day Logones) were attached to the Oubangui-Chari.
- From 18 November 1932 to 15 November 1934: Koumra, Fort-Archambault (Sarh), Maro, Kyabe returned to Chad; Massala and Middle-Logone remaining with Oubangui-Chari.
- From 15 November 1934 to 29 April 1936: Middle-Chari, Middle-Logone and the Mayo-Kebi became dependencies of Oubangui-Chari.
- From 29 April 1936 to 28 December 1936: Chad recovered Middle-Chari, Logone and Mayo-Kebi; in addition, it administered Birao.

After 28 December 1936, the border between Chad and Central Africa did not change. Birao was returned to Oubangui-Chari.

e) Niger-Chad frontier 1912-1930

- On 11 February 1912: "A convention between the two Commanders of the Military Territories of Niger and Chad established a border up to the 16° parallel. Kanem would belong to Chad".
- 1916: "After the French penetration in Borkou, Enedi and Tibesti (1913), the frontier was extended to the north : Bardai and Zouai and the greater part of Tibesti were to be in the territory of Niger."
- On 11 November 1929, the whole of Tibesti was incorporated in Chad. The new border between the two countries was established in an Order of 18 February 1930 of the Governor-General of the AEF and an Order of 4 February 1930 of the Lieutenant-Governor of Chad.

This historical outline of the setting-up of the State of Chad is essential to an appreciation of the figures which will appear in this report.

II. SOURCES OF DATA

1) Administrative censuses and other administrative sources

a) Administrative censuses

They constitute the main source of information of the size of the country's population. The information of a demographic nature is recorded in the annual reports of the Heads of territorial administration.

* Legal basis of administrative censuses

The General Order of 26 December 1936 (J.O. 1936 p. 110) on the organisation and regulations of local administration in the AEF stipulates in Article 12 that the Heads of cantons "should keep up-to-date an enumeration list, by village" of the sedentary and transient populations. In Article 6, it specifies that the village chief "should help the Head of canton, land or tribe, to draw up enumeration lists for his village".

In February 1952, Circular N° 62 (AG of the Lieutenant-Governor, Head of the Territory of Chad) drew the attention of all regional and district chiefs to the importance of population enumerations. It says : "...I have mentioned above enumeration operations; in a country like Chad, where 45% of the financial economy depends on capitation duty, it is obviously essential that the tax structure should be carefully determined; ... However, I would like to reiterate that censuses are acts of fiscal justice and that they also represent for territorial authorities a key basis for setting up and carrying out economic programmes which inevitably depend on population density ...

to establish this close contact with the population under your jurisdiction, you, first of all, have recourse to enumeration operations during which you should be able to gather a host of vital information, consolidate your own experience and sometimes even revise your previous opinions. Notwithstanding additions and subtractions recorded following the declarations of village chiefs or heads of household, it must be stated that, on principle, any census which is more than 5 years old must be redone entirely. Furthermore, until Civil Registration becomes common practice, this work, the difficulty of which I am aware and of the errors it must give rise to, must be pursued by the district chief himself or his deputy and should on no account be handed down to junior officers without authority or experience. Finally, I must add that in writing my end-of-year report and in the recommendations I shall be called upon to make, the results you obtain in this respect will greatly determine the way in which you will be assessed" - end of quotation.

* Funds placed at the disposal of Sub-Prefects and Heads of administrative posts to carry out these censuses

There is no provision for special funds to be placed at the disposal of these officers for enumeration purposes. Prefects receive funds to be allocated to Sub-Prefects for the running of general administrative departments.

b) Other administrative sources

There must also be mentioned another administrative source: the Department for Major Endemic Diseases in Chad, which, for the purposes of its tracing campaigns and vaccinations, produces an annual estimate of the population of the country by prefecture. These data are published in the "Report of Technical Activities of the Department for Major Endemic diseases in Chad". [1]

2) Statistical Census

So far Chad has only had one census which could be said to comply with the norms of statistical censuses. This was the "Improved Administrative Census" of March 1968. Indeed, breaking with the tradition of administrative censuses, whose organisation was left to the initiative of local authorities, the Administrative Census of March 1968 without doubt displayed innovations which gave it a different complexion.

- First, its short duration, 1 month (March 1968).
- Then, the special training given to enumeration agents who, more numerous than for a conventional operation, broke with the custom of gathering together the inhabitants in the village square by starting to visit them in their smallholdings in order to fill in the documents designed for this purpose.

- And finally, the fact that the collected data were more detailed and were no longer concerned only with tax liability; the question of liability, although it appeared on the general questionnaire in column II, was not asked; the enumeration agent had to determine this on the basis of other questions.

3) Population sample surveys

The only sample survey carried out in Chad was that of 1964, whose objective was to define in a precise manner the population figures covered by the survey, its structure by age, sex, ethnic group, activity, as well as the main data on movements in the population (fertility, mortality, migrations), and the evolutionary trends during the following years. This survey lasted 8 months in the field: from December 1963 to August 1964.

4) Other sample surveys

The following other sample surveys should be mentioned:

- the 1965 Socio-Economic Survey
- the 1972 Budget-Consumption Survey, which took place in the town of N'Djemena
- also, the rural census of 1972/73

These localised studies do not provide an overall figure for the population of Chad.

III. CRITICAL STUDY OF SOURCES

1) Administrative censuses

The data given in Table 13 concern the indigenous population. The non-indigenous population, whose size is negligible, has not been taken into account.

The criticism usually levelled against administrative censuses concerns their primarily tax-assessment role and their methods of enquiry which encourage under-evaluation of the total size of the population. This is shown clearly in Table 14 the data for which comes from the 1964 Population Survey in Chad. [14]

As the authors of the survey noted :

* The divergencies observed for the prefectures of Ouaddai and Biltine can be seen as the result of :

- Firstly, a very substantial emigration of the male population towards Sudan,
- secondly, parts of the nomad population are sometimes attached to some villages for administrative purposes when in fact they do not live there most of the time: they only come once a year to pay their taxes.

Table 13

CHAD - EVOLUTION OF THE POPULATION

YEAR	POPULATION in '000s	REMARKS AND SOURCES
1913	1 045.0	- Monthly Statistical Bulletin n° 4, December 1952, referring to the reports of regional and district chiefs
1914	1 050.0	- Statistical Bulletin mentioned above
1915	1 081.9	- Statistical Bulletin mentioned above
1916	1 186.8	- Statistical Bulletin mentioned above
1917	1 080.2	- Statistical Bulletin mentioned above
1918	1 103.9	- Statistical Bulletin mentioned above
1919	1 057.0	- Statistical Bulletin mentioned above
	1 057.1	- From the annual report of the Lieutenant-Governor of Chad
1920	1 162.7	- Statistical Bulletin mentioned above
	1 285.1	- From the annual report of the Lieutenant-Governor of Chad
1921	1 171.9	- Statistical Bulletin mentioned above
	1 300.0	- with 700 000 km ² , report of the Lieutenant-Governor
	1 429.5	- Annual report of the Lieutenant-Governor
1922	1 429.8	- Statistical Bulletin mentioned above
1923	1 425.4	- Statistical Bulletin mentioned above
1924	1 476.7	- Statistical Bulletin mentioned above
	1 476.4	- 1924 annual report of the Lieutenant-Governor
1925	1 432.0	- Statistical Bulletin mentioned above
	976.6	- Statistical Bulletin mentioned above
1926	1 293.0	- Annual report of the Lieutenant-Governor
	956.1	- with 1 091 600 km ² , report of the Lieutenant-Governor
1927	950.3	- Statistical Bulletin mentioned above
1928	977.1	- Statistical Bulletin mentioned above
1929	977.1	- Statistical Bulletin mentioned above
	1 287.1	- Statistical Bulletin mentioned above
1930	1 112.0	- with 1 035 140 km ² , annual report of the Lieutenant-Governor
1931	1 088.7	- with 1 187 000 km ² , report of the Lieutenant-Governor
	1 401.0	- Report of the Lieutenant-Governor
	1 226.3	- Statistical Bulletin mentioned above
1932	1 226.5	- Statistical Bulletin mentioned above
	1 091.2	- 1 178 200 km ² , report of the Lieutenant-Governor
1933	1 226.3	- Statistical Bulletin mentioned above
	863.6	- 1 202 400 km ² , report of the Lieutenant-Governor
1934	1 325.1	- Statistical Bulletin mentioned above
1935	1 167.6	- Statistical Bulletin mentioned above
1936	1 545.4	- Statistical Bulletin mentioned above
	1 432.0	- Report of the Lieutenant-Governor
1937	1 555.9	- Statistical Bulletin mentioned above
1938	1 575.0	- Statistical Bulletin mentioned above
1939	1 586.2	- Statistical Bulletin mentioned above
1940	1 552.2	- Statistical Bulletin mentioned above
1941	1 656.1	- Statistical Bulletin mentioned above
1942	1 683.3	- Statistical Bulletin mentioned above
1943	1 847.8	- Statistical Bulletin mentioned above
1944	1 840.9	- Statistical Bulletin mentioned above
1945	1 911.3	- Statistical Bulletin mentioned above
1946	2 010.6	- Statistical Bulletin mentioned above
1947	2 097.7	- Statistical Bulletin mentioned above
	2 010.0	- Annual report of the Lieutenant-Governor
1948	2 166.7	- Statistical Bulletin mentioned above
	2 168.5	- Annual report of the Lieutenant-Governor
1949	2 238.5	- Statistical Bulletin mentioned above
	2 238.3	- Annual report of the Lieutenant-Governor
1950	2 250.2	- Statistical Bulletin mentioned above
1951	2 249.4	- Statistical Bulletin mentioned above
1952	?	
1953	?	
1954	2 441.7	- Statistical Bulletin mentioned above
1955	2 516.1	- Statistical Bulletin mentioned above
1956	2 579.3	- Estimate of the Statistical Office (Monthly Statistical Bulletin) with a rate of 2% base year 1920
1957	2 574.6	- Monthly Statistical Bulletin, referring to the reports of regional and district chiefs
	2 571.4	
1958	?	
1959	?	
1960	2 750.0	- Estimate of the Statistical Office with an annual rate of 2%
	2 675.0	- Monthly Statistical Bulletin referred to above
1961	?	
1962	2 727.3	- Notes on the improved administrative census of March 1968, Sub-Division of the Statistical Office, referring to the Ministry of the Interior.

Table 14

CHAD - COMPARISON BETWEEN THE RESIDENT POPULATION OBSERVED
DURING THE SURVEY AND THE ADMINISTRIVE POPULATION

Prefectures	Administrative population	Resident population estimated by the survey	Divergence from administrative population
Biltine	91 798	68 940	- 24.9 %
Ouaiddaï	247 675	239 850	- 3.2 %
Salamat	65 858	83 870	+ 27.3 %
Batha	153 179	156 420	- 1.7 %
Chari-Baguirmi	214 438	301 840	+ 40.8 %
Guéra	155 826	159 220	+ 2.2 %
Middle-Chari	284 622	373 590	+ 31.3 %
East Logone	178 179	236 180	+ 32.6 %
West Logone	142 673	190 390	+ 33.4 %
Tandjilé	189 001	227 570	+ 20.4 %
Mayo-Kebbi	361 604	486 500	+ 34.5 %
TOTAL	2 090 853	2 524 370	+ 20.7 %
of which urban centres	107 950	173 210	+ 60.5 %

* Regarding the other regions, the divergence reflects the relative quality of the administrative census.

Frequently, a number of these enumerations are out of date. Though they are sometimes up-dated, they are rarely re-compiled entirely, which affects the prefectures whose boundaries have been altered during the past few years.

Another criticism which can be levelled at the population figures given by the authorities is that these figures are obtained by adding the results gathered over a certain number of years (see below the reproduction of a note N° 368T of 27 September 1955, concerning the census, addressed to the Governor of Chad by the regional Head of Mayo-Kebbi). "...an account showing clearly the situation regarding censuses in the region of Mayo-Kebbi as of 1st September 1955".

- District of Bongor - censuses date from :

1951 for 452 people
 1952 for 4 793 people
 1953 for 13 071 people
 1954 for 43 146 people
 1955 for 20 216 people

On 31 August 1955, the total population of the district amounted to 81 678 inhabitants compared with 80 047...on 31 December 1954.

- District of Pal - censuses date from :

1953 for 7 037 people
 1954 for 27 648 people
 1955 for 32 655 people

On 31 August 1955, the total population of the district amounted to 67 330 inhabitants compared with 68 178...on 31 December 1954.

- District of Lere - censuses date from :

1952 for 6 093 people
 1953 for 11 456 people
 1954 for 19 455 people
 1955 for 29 591 people

On 31 August 1955, the total population of the district amounted to 66 595 inhabitants compared with 67 464...on 31 December 1954.

- District of Finaga - censuses date from :

1952 for 19 885 people
 1953 for 19 411 people
 1954 for 35 001 people
 1955 for 44 945 people

On 31 December 1955, the total population of the district amounted to 119 242 inhabitants compared with 118 331...on 31 December 1954.

In total, 127 407 people have been enumerated in the region during the first 8 months of 1955. The demographic situation is stable".

Table 15

CHAD - SUMMARY RESULTS OF THE 1955 CENSUS
IN THE MAYO KEBBI REGION

DISTRICTS	Population enumerated in					TOTAL	LIABLE TO TAX
	1955	1954	1953	1952	1951		
Bongor	20 216	43 146	13 071	4 793	452	81 678	44 823
Pala	32 655	27 648	7 027	-	-	67 330	37 512
Léré	29 591	19 455	11 456	6 093	-	66 595	36 081
Fianaga	44 945	35 001	19 411	19 885	-	119 242	52 852
TOTAL	127 407	125 250	50 965	30 771	452	334 845	171 268

The case of Mayo Kebbi is only one illustrative example among many others as the method of calculating the size of the population is practically the same from one region to another.

It sometimes happened that from one year to another, administrative authorities simply reported the population figures of the previous year, in the absence of any census. These censuses, it must be noted, were not carried out without difficulties. In this respect, the Chief of the Salamat region said in a letter addressed to the Chief-Governor of Chad "...Among the four districts of the region, Am-Timan is, because of the way of life of its inhabitants, by far the most difficult to enumerate as this can only be done effectively (except for Daguel) during the rainy season. Travelling is notoriously difficult during this season in the territory of Am-Timan, each stage meaning swimming across several rivers, walking many kilometers, thigh-deep in water...". The same regional Chief says..."If one summarises the situation on censuses in the region of Salamat, it can be observed that :

- Out of 93 102 people enumerated in the region, 58 792 have been enumerated in 1949, 1950 and 1951, 27 409 in 1947 and 1948, and 6 901 prior to 1947; the earliest censuses date back to 1940.

- During the past two years, the monthly count for each district Chief has been as follows :

. Melfi	878 people
. Aboudeia	870 people
. Haraze-Mangueigne	418 people
. Am-Timan	0 People

or as the Chief of the region of Ouaddai observed ..."low tax receipts are due to the anarchic spirit of the population. The natives manage to evade all forms of control, nomads scatter and tribes are disbanded, villagers disperse ... censuses no longer have any significance."

In another report can be read the following: "...the Mousseilles have paid their taxes for the first time. By that I mean they have paid in kind in the form of goats, the sums for which they were registered. But the Mousseilles did not want to be counted. When the Chief of the district attempted this, they made fun of him, giving him imaginary names such as 'catch me if you can' or 'look hard for me', etc...; the Chief of the district, hearing bursts of laughter at each declaration of identity, understood he was being fooled; he shut his register and merely proceeded to make estimates, on two occasions".

Such anecdotes are legion and one could well ask how much the demographic data published by the territorial administration, whether colonial or not, should be trusted. There is reproduced below a criticism of administrative censuses by a former adviser of the "Union Française" in a letter addressed to the High Commissioner of the Republic, Governor General of AEF, which read: ..."There has been no general census for about five years. Every year, district Chiefs base themselves on the previous census to fix the tax due from each village. In the meantime, there have been deaths, migrations abroad and death of livestock. This results in discontent which weighs heavily on the population. Certain individuals who change village for personal reasons, intending to live peacefully, are compelled by the Chief of their former village to which they have not belonged for two or three years, to pay taxes. This means that they pay tax twice : to the new village chief and the former, who claims that their names remain on the village register. Tax is even collected for the dead because their names have not been crossed off. As for those who have gone abroad, their taxes still continue to be paid by those who remain behind..."

The colonial administration was equally concerned with the problem of nomads. The documents which we have consulted however do not mention the numerical importance of this category of the population. Also, in a study on nomadisation in the Salamat region, dated 1948, the regional Chief at the time stated that the number of nomads was difficult to calculate.

2) Estimates by the Service for Endemic Diseases

The demographic data published by the Service for Major Endemic Diseases in Chad, in "Report of Technical Activities of the Service for Major Endemic Diseases in Chad" concerns the total population. Compared to other sources, these figures greatly under-estimate the population. The growth rate calculated on the basis of these figures varies from one year to another as indicated by the table below showing the evolution of population estimated by the Service.

Table 16

CHAD - EVOLUTION OF ESTIMATED POPULATION FROM 1975 TO 1978

Year	1975	1976	1977	1978
Population	3 375 00	3 442 000	3 537 771	3 687 918
Growth compared with preceding years	1.99	2.78	4.24	

The Population Projections for Chad, 1963-1985, presented by the E.C.A. [15], gives for the periods 1970-1975 and 1975-1980 annual growth rates of respectively 2.06% and 2.25%, and population figures estimated at :

4 030 000 inhabitants in 1975
 4 121 000 inhabitants in 1976
 4 213 000 inhabitants in 1977
 4 309 000 inhabitants in 1978

Comparison between these two series of figures gives the following divergences (compared with B. Gil's estimates) in absolute and relative terms :

1975	1976	1977	1978
-655 000	-679 000	-675 229	-621 082
- 16.3%	- 16.5%	- 16.0%	- 14.4%

3) Administrative Census of March 1968

The criticism which can be made of this census concerns its non-national character, for field operations did not entirely cover the fourteen prefectures comprising the country. The authors of the census resorted to estimates in order to complete their data. Seventy per cent of the total population was effectively enumerated; the remaining thirty per cent was covered by estimates as Table 17 below shows [16].

Table 17

CHAD - EVOLUTION OF THE POPULATION (a) BY PREFECTURES
FROM 1964 AND 1968 CENSUSES

PREFECTURE	1964 (b)	1966 (d)	1968	
			Enumerated(c)	Estimated(d)
Total	3 254 000	3 371 000	2 437 008	3 492 000
Batha	296 000	306 000	...	316 000
B.E.T.	75 000	77 000	...	79 000
Biltine	129 000	133 000	113 680	137 000
Chari-Baguirmi	402 000	414 000	359 554	426 000
Guéra	159 000	164 000	140 535	170 000
Kamen	170 000	176 000	163 978	182 000
Lac	115 000	119 000	94 738	123 000
Western Logone	190 000	210 000	231 385	231 000
Eastern Logone	236 000	246 000	257 023	257 000
Mayo-Kebbi	486 000	498 000	454 329	510 000
Middle Chari	374 000	383 000	370 960	392 000
Ouaddai	310 000	320 000	...	330 000
Salamat	84 000	86 000	...	88 000
Tandjilé	228 000	239 000	250 826	251 000

(a) this concerns the resident population in Chad, excluding Chadians living abroad.

(b) Population Survey of Chad 1964.

(c) Administrative Census of March 1965.

(d) Estimate on the basis of demographic data from the 1964 Survey with that of the March 1968 Census for the Prefectures of Western Logone, Eastern Logone and Tandjilé.

In the absence of any explanation of the approach adopted, it suffices to note the criticism made above. It should also be noted that this operation did not address the problem of the nomadisation of Chad.

4) Population Survey of Chad - 1964

This is the most trustworthy source for any demographic information. All the same it must be noted that this survey only covered eleven of the fourteen prefectures, four of which had been partly included in the domain reserved for the sedentary population of the prefectures concerned. This excludes the study of the nomadic population. According to the surveyors "the study of this zone (500 000 km²) of very low population density, inhabited mainly by nomads, would have presented serious difficulties, taking account of the distances to be covered and the dispersal and mobility of the population. It would nevertheless be of great interest to obtain, in the course of later surveys, worthwhile information on the nomadic population whose demographic structure we know nothing about." The authors of the survey did not fail to encounter a certain number of difficulties during the execution, phase, as they state in their final report, notably :

"During the operation, a certain number of difficulties were experienced, of which the most important were as follows :

- the training and control during one year of a hundred young Chadians at eleven-plus level, whose near future was uncertain (they were only employed for the duration of the survey), was an increasingly perilous balancing-act the closer the survey drew towards its end. Furthermore, the very difficult living conditions for the managers and surveyors in the bush did not improve the atmosphere.
- the vast distances to cover (the domain of the survey included Massakory, Guereda, Am-Timan and Lere) despite the very tight schedule.
- the mobility of the population, the prevailing ignorance and the mistrust of the villagers. In the north, eighty per cent of the population of a village would very often be dispersed in ten or more little rural hamlets (Dankouch). Incidentally, it is for this last reason that the sub-prefecture of Iriba was not able to be enumerated."

The regional nature of this operation could only lead to an estimate of the total population of the country which is given in Table 18.

As this table indicates, all the demographic data on fertility, mortality, etc... of the 1964 survey on the whole of the country is based on 78% of the population (60% of the population for the northern region of Chad). One can certainly conclude therefore that an under-estimation of the total population of Chad is likely.

Table 18

CHAD - ESTIMATE OF THE TOTAL POPULATION IN 1964 BY PREFECTURE

Prefectures	Population estimated by the survey (rounded figures)	Estimate from other sources		Total (h)
		(a)	(g)	
B.E.T.	-	75 000	(b)	75 000
Kanem	-	170 000	(b)	170 000
Lac	-	115 000	(b)	115 000
Biltine	69 000	60 000	(c)	129 000
Ouaddai	240 000	70 000	(d)	310 000
Salamat	84 000	-		84 000
Batha	156 000	140 000	(e)	296 000
Chari-Baguirmi	302 000	100 000	(f)	402 000
Guéra	159 000	-		159 000
Middle Chari	374 000	-		374 000
Eastern Logone	236 000	-		236 000
Western Logone	190 000	-		190 000
Tandjilé	228 000	-		228 000
Mayo-Kebbi	486 000	-		486 000
Total	2 524 000	730 000		3 254 000
Percentage	77.6	22.4		100.0

Notes by the organisers of the survey

- (a) These figures related to the zones not enumerated in the course of survey. Taking the variable precision of these different estimates into account, the population of Chad can be estimated at around 3 300 000 inhabitants.
- (b) B.E.T. Kanem-Lac. These are total population figures for these prefectures corrected and rounded. The calculation was made on the basis of administrative figures available in 1962.
- (c) Biltine - the figure of 60 000 includes the population of the sub-prefectures of Arama and Iriba.
- (d) Ouaddai - the figure of 70 000 includes the nomads attached to the nomade sub-prefecture (about 53 000) and the nomad groups attached to the sub-prefectures of Am-Dam and Goz-Beida (about 17 000).

- (e) The figure of 140 000 represents the population of Ouaddi-Rime and the nomad population of the sub-prefecture of Oum-Hadjer.
- (f) The rounded figure of 100 000 represents the population of N'Djamena (formerly Fort-Lamy).
- (g) Apart from N'Djamena, the above estimates are very approximate and probably still below the true figures, based on the administrative censuses of 1962, corrected by the mean divergence of 20.7% shown by the survey.
- (h) This figure only represents the resident population in Chad, excluding Chadians resident abroad, principally in Cameroon and Nigeria, probably numbering between 250 000 and 500 000.

IV. CONCLUSIONS

1) Results

Taking account of the fluctuations described in the various frontier lines of Chad with its neighbouring countries, the evolution of the population of Chad which is proposed only holds for the period from 1937 (year when the colony of Chad established definitive frontiers) to 1985. Different population projects for Chad have been made among which should be mentioned :

- that of the French Secretary of State for Foreign Affairs [17]
- that of the authors of the Population Survey of Chad, 1964, covering the period 1964 to 1985
- that already mentioned, carried out by B. Gil, covering the period 1963 to 1985
- and that covering the period 1920-1970, carried out by the Statistical Bureau of Chad in May 1957.

These various projections give, for the middle of 1963, the population figures shown below :

Table 19

CHAD - VARIOUS ESTIMATES OF THE POPULATION IN 1963

Projection source	Population at 30 June, 1963 (in 1000s)	Annual Growth Rate
Statistical Bureau	2 934	2%
Population Survey	3 209	1.4%
E.C.A	3 213	Base year
S.E.A.E.	3 239	1.69%

The first projection, based on figures from administrative censuses, has been eliminated. The figure for 1963 given by the projections of the E.C.A. has been taken as the datum point in the re-evaluation of the total population. Therefore, for the figures relating to the years 1964 to 1985, the growth rates given by the E.C.A. projections have been applied to the 1963 figure.

For the years from 1936 to 1962, the growth rates from the projection of the S.E.A.E. have been applied to the 1963 figure.

2) Sources

These data, it must be noted, only represent an attempt at an estimate of the total population of Chad. What the country needs is a series of statistical censuses covering the whole of the territory, both for a better understanding of the total population and of the demographic characteristics of the nomad element of the population.

Utilisation of data on population change based on annual adjustment of the figure can only be possible with the development of Civil Registration, for in Chad the recording of vital statistics is far from accurate and must be improved. This is why the Statistical Department for Economic and Demographic Studies has incorporated in its demographic programme the improvement of the Civil Registration system; to this end a request has been made by the Chadian Government to the United Nations Fund for activities related to population (UNFPA). It will therefore be some time before one can use civil registration statistics in Chad.

Table 20 shows the evolution of the total population of Chad from 1937 to 1985.

Table 20

CHAD - EVOLUTION OF THE TOTAL POPULATION FROM 1937 TO 1985

(at 30 June each year)

Year	Population (in 1000s)	Annual Growth Rate (%)
1937	2 302	
1938	2 318	
1939	2 334	
1940	2 351	0.7 (1937-1940)
1941	2 378	
1942	2 406	
1943	2 434	
1944	2 463	
1945	2 491	
1946	2 521	
1947	2 550	
1948	2 580	
1949	2 610	
1950	2 641	1.17 (1940-1950)
1951	2 672	
1952	2 718	
1953	2 759	
1954	2 799	
1955	2 841	
1956	2 882	
1957	2 925	
1958	2 968	
1959	3 011	
1960	3 055	1.47 (1950-1960)
1961	3 107	
1962	3 160	
1963	3 213	1.69 (1960-1963)
1964	3 268	
1965	3 323	
1966	3 380	
1967	3 438	
1968	3 497	1.71 (1963-1968)
1969	3 567	2.02 (1968-1970)
1970	3 640	
1971	3 715	
1972	3 791	
1973	3 869	
1974	3 949	
1975 (1.1) (30.6)	3 990	
	4 030	2.06 (1970-1975)
1976	4 121	
1977	4 213	
1978	4 309	
1979	4 405	
1980	4 504	2.25 (1975-1980)
1981	4 611	
1982	4 720	
1983	4 831	
1984	4 945	
1985	5 061	2.36 (1980-1985)

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DJIBOUTI

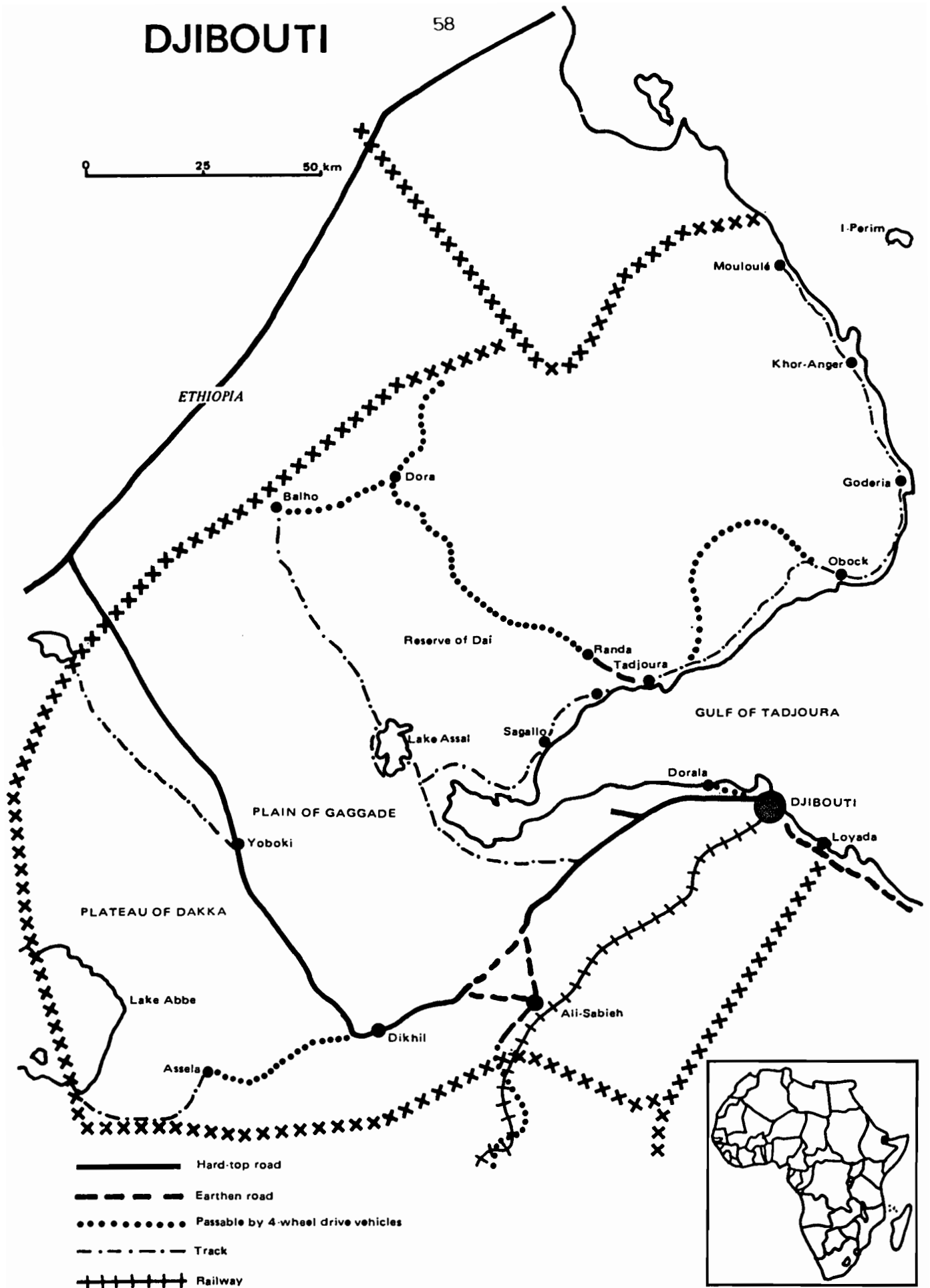
Agnès Guillaume

SEPTEMBER 1979

DJIBOUTI

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D J I B O U T I

I. INTRODUCTION

Bounded on the north and west by Ethiopia, on the east by the Gulf of Aden, and on the south by the Republic of Somalia, the Republic of Djibouti constitutes a territory of about 23 000 km².

The country was a French possession for more than a century; the French presence in the "territory of Obock" dates back to 1862 and was made official by the Decree of 20 May 1896 which gave it the name of "French Somaliland and dependencies". It became an overseas department in 1946. A referendum took place in the country on 19 March 1967: the country remained a part of the French Republic; it was given a new status and a new name "French Territory of the Afars and Issas", from the name of the nomadic tribes which make up its population :

- the Afars wander in the north-east of the country and on both sides of the border with Eritrea;
- the Issas make more substantial movements within the country and across frontiers.

A new referendum took place on 8 May 1977 and on 27 June 1977. The territory proclaimed its independence and was made the Republic of Djibouti.

II. DEMOGRAPHIC DATA SOURCES

As far as demographic data are concerned, the situation of the Republic of Djibouti is very bad. The only available data on population come from censuses made every five years between 1921 and 1936, and between 1946 and 1956.

The censuses concern effectively only a small proportion of the population : in fact, nominative censuses are limited to the "European and assimilated" population. For the indigenous population we only have estimates.

Periods and methods of estimation were quite variable.

a) Period of estimation

In 1931, the enumeration took place during the first quarter of the year; on the other hand, in 1936, it was carried out at the time when the nomads move up to the heights of the border regions of Abyssinia.

The difference in the time of estimation may partly explain the variations observed.

Table 21
DJIBOUTI - EVOLUTION OF THE POPULATION

YEAR	INDIGENOUS POPULATION	NON-INDIGENOUS POPULATION
1921	56 000	369
1926	85 000	540
1931	68 000	356
1936	44 000	1 881
1945	43 000	1 415
1949	54 000	2 039
1951	60 000	2 170
1957	63 000	4 360
1961	74 000	7 200

b) Method of estimation

It is not known exactly what method of estimation was used. Article 5 of the Decree of 18 March 1921 mentions only that "each District Chief will endeavour to determine the number of indigenous inhabitants by race and tribe on the basis of the information which will be provided by the Okal." For the other years, no information is available.

Finally, civil registration is very imperfect, especially for deaths. It operates essentially only in the capital. In 1978, 6 044 births and 847 deaths were registered.

III. MAIN DEMOGRAPHIC CHARACTERISTICS

In 1976, the population was estimated (on the basis of work carried out in 1971-1972 by SEDES during an identification mission) at 250 000 inhabitants, of which 160 000 in Djibouti-ville. These data appear consistent when compared with the electoral rolls, which give a total of 110 000 adults (males plus females) aged 18 and over. The natural rate of increase would be 2½% per year, and the life expectancy at birth 50 years. According to a survey carried out at Djibouti-ville on 124 000 inhabitants on 1 October 1972 and at Dikhil-ville in 1976, the population is young : 51% is under 15 years.

The sex ratio varies among the tribes: 57.6% male for the Afars, 52% for the Issas and 45.5% for the other Somalis.

Population data are too fragmentary and too unreliable to allow an estimate of demographic trends. The projections (see Table 22 and Chart 2) are in fact rather contradictory : for example, Table 22 presents various estimates from 1885 to 1972, which indicate very sharp variations from one year to another; on the other hand, Chart 1 shows a smoother development, but the sources are not stated, except to mention a census necessitated by the 1967 referendum, which gave 125 000 inhabitants.

One common characteristic appears : the demographic imbalance represented by the town of Djibouti; the concentration of population there is substantial (between half and two thirds of the total population). The growth of Djibouti-ville has been very quick as it saw its population triple between 1895 and 1900 following the construction of the railway link to Addis-Ababa, and the increase has been steady since 1947 when the port was created. Its population was estimated to be 115 200 inhabitants in 1972 (according to the identification mission of the CEGD).

Its population is very cosmopolitan : it consists mainly of foreigners (Europeans, Arabs, Somalis, Asians) and Issas (the town is their movement zone); on the other hand, Afars are not numerous (less than 5% in 1967). A fairly substantial transient population composed of families and men seeking employment is attracted to the town. Its population is very young (see Chart 2, age pyramid).

IV. DIFFICULTIES OF COLLECTION

These are manifold :

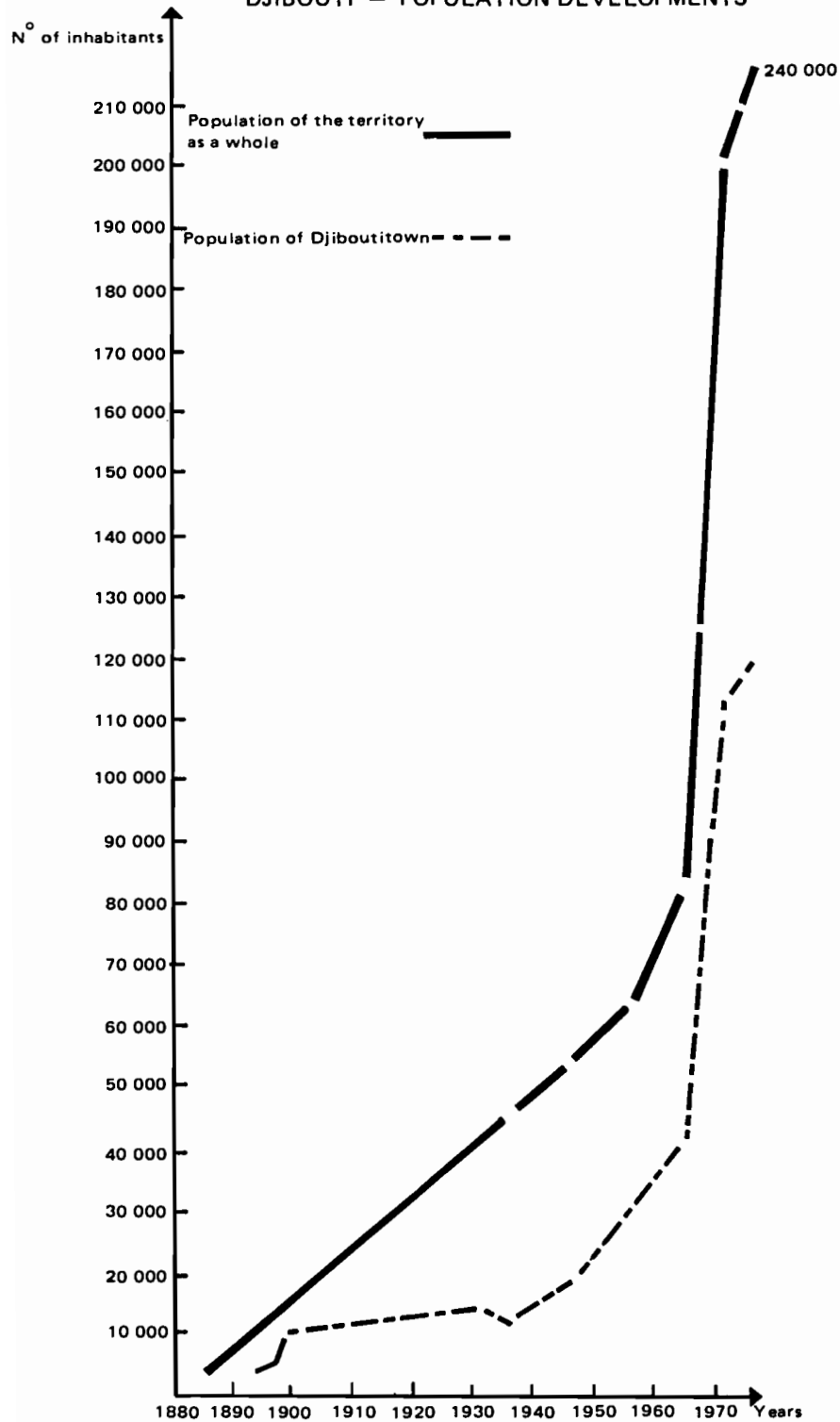
- the frontiers of the country are not well established :
 - . estimates of its surface area sometimes vary;
 - . nomads and Somalis coming from the Democratic Republic of Somalia and Ethiopia often cross the border;
- the nomadisation of the Afars and Issas, as well as their feuds, complicate enumeration operations.
- last, one must mention the substantial immigration, in particular of Arabs and Somalis, and the flow of refugees from Dgaden who are concentrated in the main town. The number of refugees was estimated to be 20 000 in 1977 by the Refugee Committee. This figure may be an under-estimate, bearing in mind the "clandestine refugees" whose number can be estimated to be 50 000, and the total Djibouti population to have been 300 000 inhabitants in 1977.

Since the time of independence, no figures have been published. During the last few years, operations have taken place on the territory geared towards a population enumeration. However, no information concerning them is available.

Table 22
DJIBOUTI - POPULATION OF THE FRENCH TERRITORY OF AFFARS AND ISSAS
FROM 1885 TO 1972

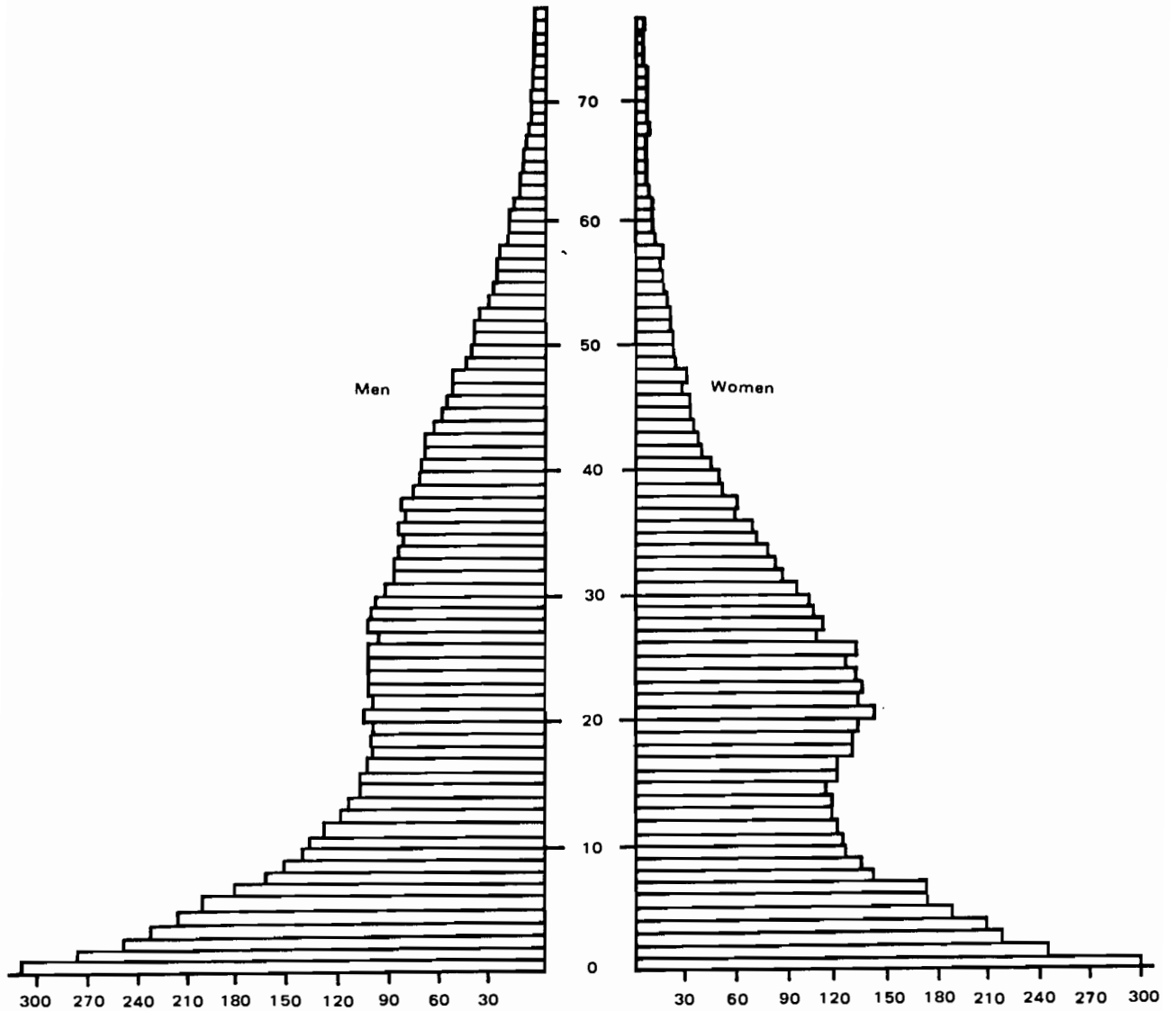
YEAR	TOTAL POPULATION	POPULATION OF DJIBOUTI-VILLE	REMARKS
1885	22 500		Concerns the territory of Obock only
1891	200 000		
1893		1 250	
1895		4 500	
1897		6 000	
1898		10 000	
1900	50 000 or 200 000	15 000	For the Territory, the figure of 200 000 is the most frequently quoted
1902		13 500	
1906	208 000	8 000	"enumerated and estimated"
1910	90 000	10 000	
1911		13 500)	There is no census of population as a whole
1913		16 700)	
1921	65 000	8 500	
1926	85 000	?	General statistics in France do not show any particular information on Djibouti
1927	85 000	9 400	
1931	69 000	10 000	
1936	46 000	10 000	
1939		16 000	
1942		6 000	
1945	85 000	15 000	Notes and documentary studies. These figures seem particularly inflated
1946	46 000	17 000	
1947	54 000	19 000	
1950	53 000		For 1950, 1951, 1953 and 1955 population figures supplied for the Territory concern non-Europeans only
1951	59 000	26 000	
1953	62 000	30 000	
1954	62 800		French Overseas Ministry
1955	65 000		
1956	67 500		
1957	70 000	31 500	
1958	72 500		
1959	75 000		
1960		32 000	
1961	80 000	40 000	
1963	81 500	41 500	
1966		62 000	
1967	125 000	62 000	
1972	120 000	40 000	Declaration of Mr. Krieg at the National Assembly (May 1972)
		120 000?	Paper of the Haut-Commissariat (December 1972)
		85 000	Le mois en Afrique (January 1973)

CHART 1
DJIBOUTI — POPULATION DEVELOPMENTS



Source : (17)

CHART 2
DJIBOUTI — PYRAMID AGE IN 1972



Source : C.E.G.D. analysis of ten percent sample of identification mission data

V. CONCLUSIONS

Population data are very unsatisfactory since no operation has been carried out in the territory since 1960.

Based on the identification mission (which gives a figure of 250 000 inhabitants in 1976) it would seem that the population would have been about 230 000 inhabitants on January 1st, 1975.

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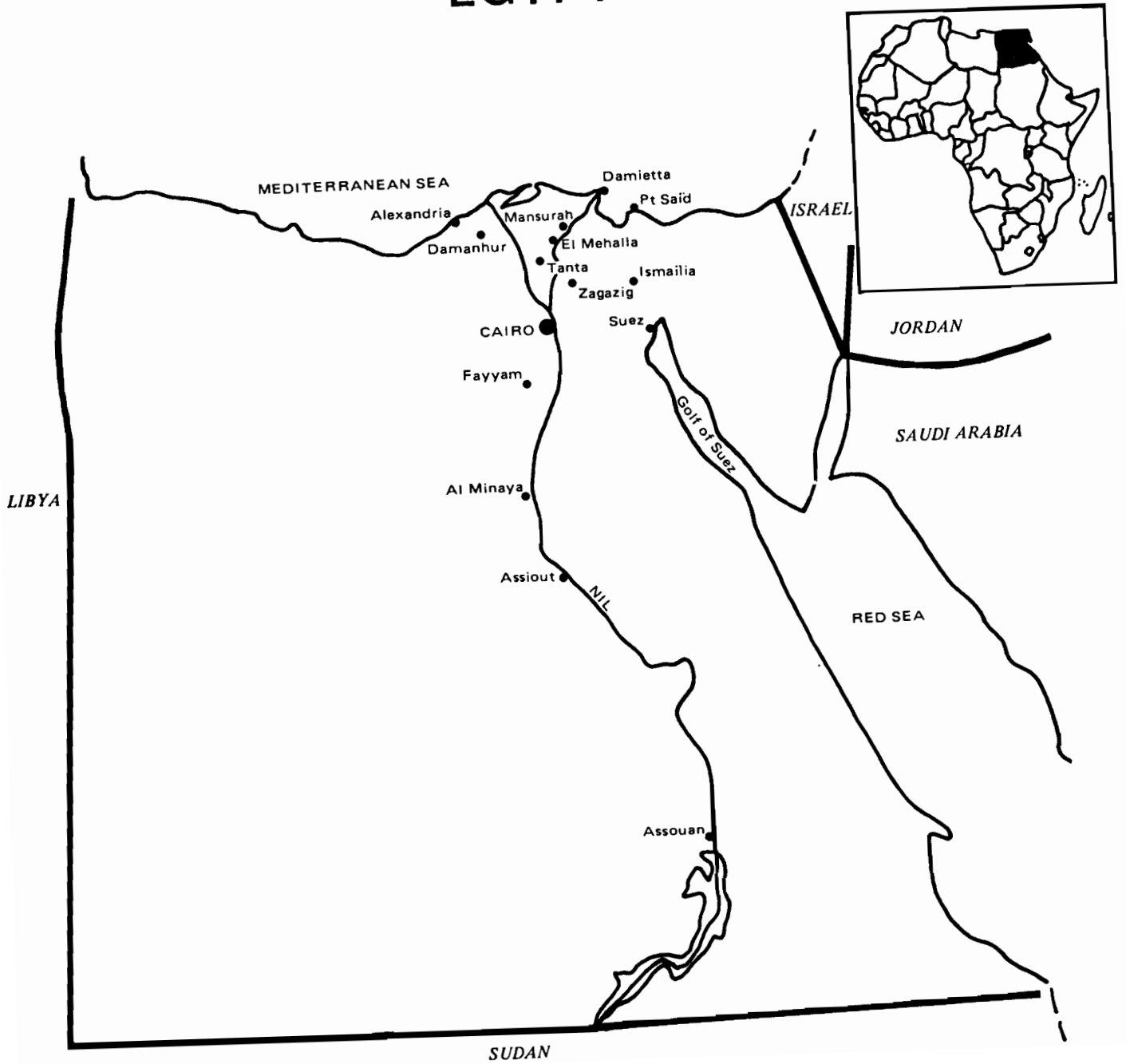
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EGYPT
Ferial Drosso

S E P T E M B E R 1 9 7 9

aire

EGYPT



E G Y P T

I. INTRODUCTION

In terms of contemporary history - references have been found to censuses dating back to the time of the Pharaohs, the tax and military reasons for which are apparent - one must go back to 1897 to find the first serious census to be carried out in Egypt.(1) From that date, censuses took place every ten years until 1947. The one which was scheduled for 1957 took place in 1960, followed by a less complete one in 1966 and finally, the latest was carried out on 22-23 November 1976. (2) According to this census, the population of Egypt amounted to 38 228 000 of which 36 656 180 present at census time, 1 425 000 resident abroad and 147 000 living in the Sinai occupied zone. (3) By 24 January, 1979 it would be expected to have reached 40.5 million including Egyptians living abroad (figure obtained from "El Ahram el Iktissadi", the economic supplement of the daily paper "El Ahram").

On the other hand, as far as the 19th Century is concerned one is reduced to estimates; those used here are those of D. Panzac [17] who evaluated the total population of Egypt at 4 500 000 in 1800. He based this estimate on a statement made in 1833 to a French diplomat by Mohamed Ali that he had at his disposal 870 000 men over 17 years old, which would approximately correspond to a total population of this order. Furthermore, this figure would provide Cairo with a demographic base commensurate with its importance in the country, that is 5.7% for most of the century (4) [20]. This would provide a sound and plausible basis for the subsequent evolution of Egyptian population as shown by D. Panzac in the following table.(5)

-
- (1) There was a previous one in 1882 but it was carried out during the unsettled period of nationalist opposition to the recent English occupation. It was also the first attempt to carry out a census using modern methods and the figures obtained are still greatly underestimated.
 - (2) Some of the results are not yet available, which explains why some of the calculations do not take it into account.
 - (3) See Table 28 for a population breakdown by governorate.
 - (4) Today, with nearly 9 million inhabitants, the conurbation of Greater Cairo accounts for almost 22% of the population of the country.
 - (5) With these annual growth rates the Egyptian population by 1975 would be 37 016 000 persons, including those living abroad.

Table 23
EGYPT - EVOLUTION OF THE POPULATION FROM 1800 TO 1975

Year	Population	Annual rate of increase (in ‰)
1800 (E)	4 500 000	-
1846 (E)	5 400 000	5
1882 (E)	7 800 000	12
1897 (C)	9 734 000	15
1907 (C)	11 191 000	15
1917 (C)	12 670 000	13
1927 (C)	14 217 000	12
1937 (C)	15 921 000	12
1947 (C)	18 967 000	19
1960 (C)	26 085 00	26
1966 (C)	30 076 000	26
1976 (C)	36 656 000	23

E = estimate; C = census

Source: [18]

It should be noted that the spectacular growth of the Egyptian population must be considered in the context of the characteristics of this country: the disparity between its physical area (1 million km²) and its populated area (36 000 km²); one is faced here with densities which are among the highest in the world.(1)

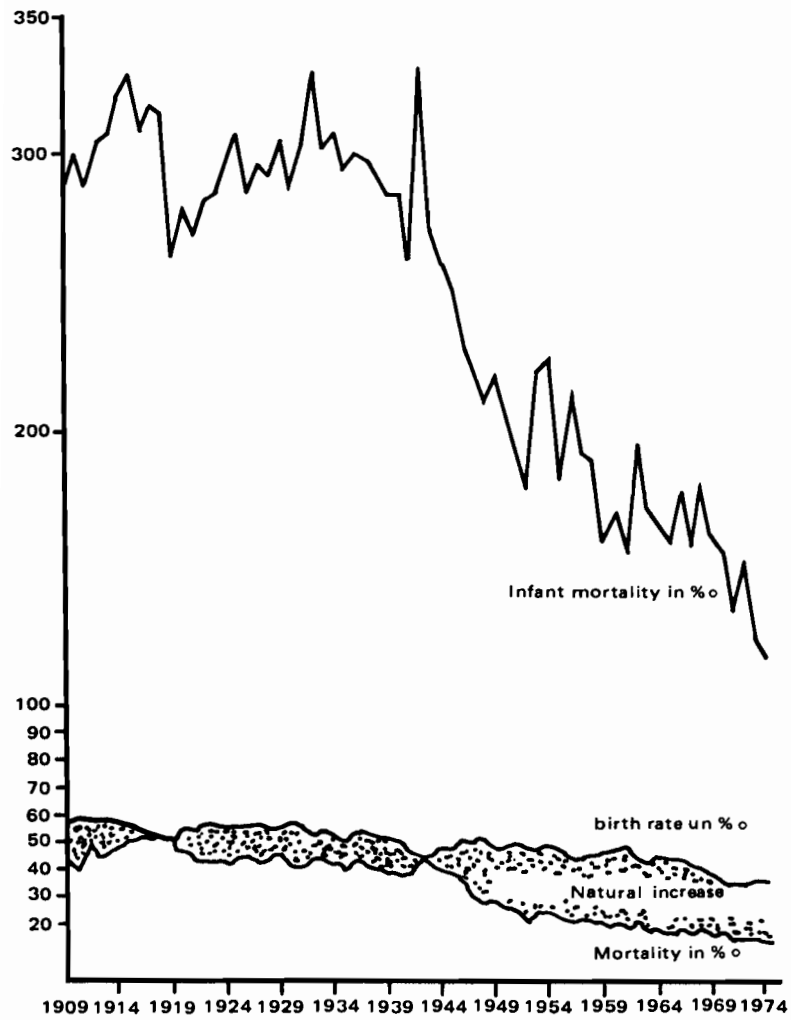
The following chart shows in detail the evolutionary trends in Egypt's population between 1909 and 1974. (2)

An important progress in infant mortality is evident (although the ratio remains high : 120 per 1000) as is a rapid fall in the death rate and a gradual decline in the birth rate (about 35 per 1000). Life expectancy at birth has increased from 24 years in 1936-1938 to 52 years in 1970-1972. The population is obviously young,

(1) See Table 29.

(2) Inadequacies in Civil Registration have been taken into account in the construction of this graph; see further for sources and their reliability.

CHART 3
EGYPT-POPULATION TRENDS 1909-1974



Source : (17)

those less than 20 years of age constituting more than half of the population. However, although this trend continued upward until 1970 (47.6% in 1937, 48% in 1947, 51.1% in 1960 and 52.6% in 1970), it has more recently started to decline: the under-20 year olds constituted 51.6% of the population in 1973 (1).

Another characteristic aspect of the evolution of the Egyptian population is the strong trend to urbanisation (one could even say the "ruralisation of Cairo", since half the population of the metropolis is of rural origin). There is also important internal migration, particularly from the south of the country towards the north (2).

In addition, we show in the appendix a few tables on the distribution of population between rural and urban areas labour force, income and the level of education of the Egyptians. From these one should be able to get an idea of the demographic situation in Egypt.

II. SOURCES AND THEIR RELIABILITY

The information available for Egypt is derived from three sources: census, Civil Registry and demographic surveys. It must be noted that compared with other Arab or African countries, Egypt is distinguished by the quality of its demographic data. A number of factors certainly contribute to this:

- a long-established tradition of state control and centralisation
- a population almost entirely sedentary or sedentarised (3)
- clearly defined boundaries (even if there has been since 1967 the problem of enumeration in the territories occupied by Israel)
- emigration which has been negligible for a long time (4)

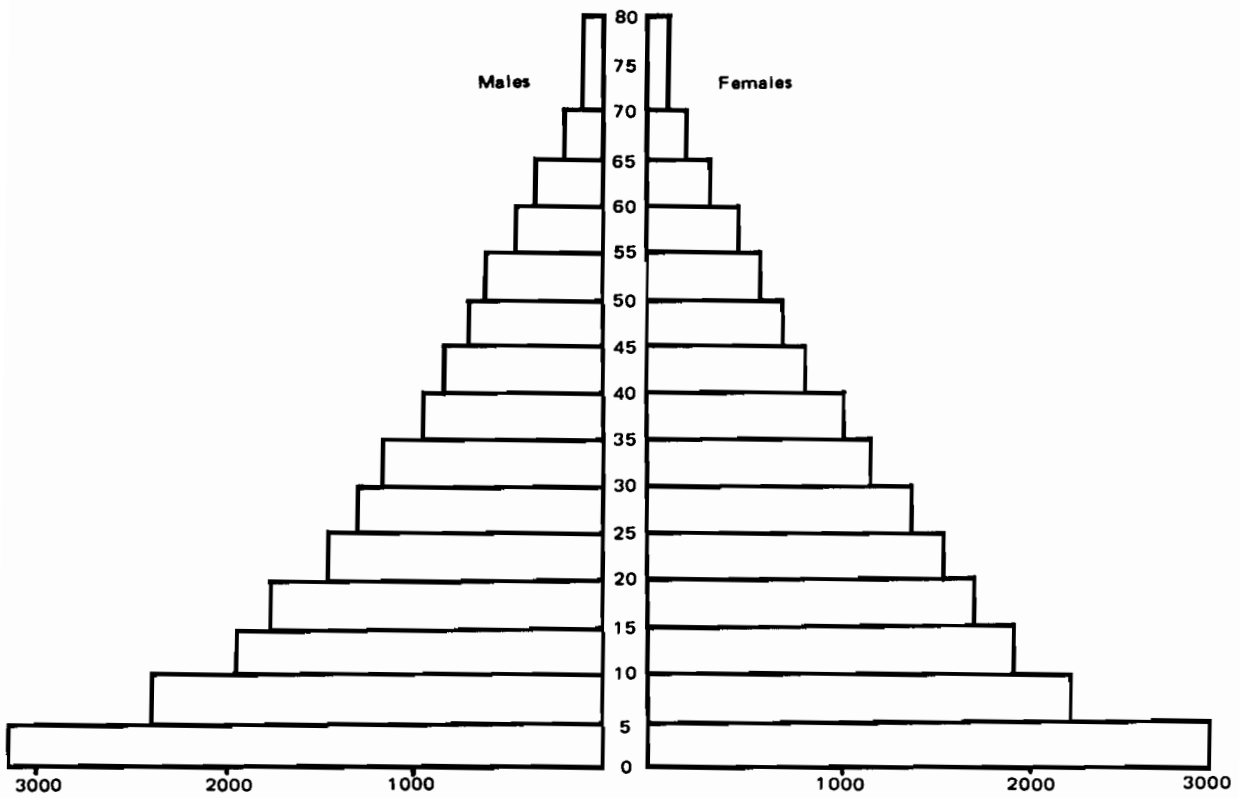
(1) See Chart 4 for the age pyramid in 1973 and Table 30 for the development of the age structure since 1927.

(2) See Tables 31 and 32. In Egypt, as elsewhere, it is not easy to define a rural zone. The definition used in Egypt is primarily administrative which means that it is likely to be submitted to modifications without any direct connection with demography.

(3) Egypt has no more than a few thousand nomads.

(4) Today, however, because of the economic and demographic situation the Egyptian Government authorises and even encourages the emigration of Egyptians, in particular towards the countries of the Arabian Gulf.

CHART 4
EGYPT-AGE PYRAMID 1973
 Population in thousands



Source : Central Agency for public mobilisation and statistics

- an ethnically homogenous population; it is calculated that nowadays only 6% of the population is of Arabic origin and 2% of Berber origin (1). It must be added that Egypt is also spared the problems of linguistic minorities and that foreigners, the proportion of which has never exceeded 1.5% (in 1937), represented only 0.5% of the population in 1960. Since then their number has continued to decrease, reaching 0.26% in 1976. There is, however, the resurgence of the Copt problem. Though officially denied, this problem expressed itself, among other things, in a war of numbers: government statistics give a figure of 2½ million Copts, the Copts themselves estimate their numbers at 6 million. How numerous they are in reality is not known, but it is certain that 2½ million is below the true figure.

1) Surveys

A great many demographic household surveys have been made during the last few years; some were sample surveys based on censuses, others were exhaustive surveys (2). They have been for the most part carried out in the context of policy on the family and birth control. Most of the time scientific work is coupled with social work with, from 1953 onwards, particular emphasis on the necessity to control population growth. To this effect the National Committee for Population Studies is equipped with sub-committees working in the fields of health, public hygiene and social welfare.

2) Censuses

It has been noted that these have been frequent. They have been held about every ten years. They have also improved with time. However, they do not escape the inadequacies which characterise operations in developing countries, in particular under-enumeration and above all under-enumeration of children under 10. Such gaps obviously affect the evaluation of the growth rate, and consequently all other measures derived from it.

Censuses are the responsibility of the Central Agency for Public Mobilisation and Statistics, an organisation created in 1964 by presidential decree which brings together all statistical work carried out in Egypt. As one can imagine, such control by a state organisation facilitates neither access to information nor its collection by independent researchers.

Some details concerning recent censuses follow.

(1) Islamisation should not be confused with Arabianisation.

(2) Among the most recent and valuable was the one carried out in three villages of the Menoufeia Governorate by the Social Research Centre of the American University of Cairo in conjunction with the Health Ministry and the Population and Family Planning Board. [11]

1947 Census

This census has been the subject of much controversy but it remains of great importance as there were no further censuses until 1966. El Badry can be safely followed in his estimation that the figure of almost 19 million inhabitants is too high. In his opinion, this figure can only have resulted from over-estimation (see p.77 note (1)) otherwise a very high increase rate for the period 1937-1947 would be implied; there is no reason to believe that there were during that period significant changes in mortality, birth rates or migrations.

1966 Census

This was the first census in which sampling was used, and was based on the de facto population.

1976 Census

There are still not enough results on this census to form an accurate picture, but it appears that, while being more ambitious in its objectives, its quality was inferior to that of its predecessors.

It included exhaustive data on the number of inhabitants, their main age characteristics, marital status, nationality, social status, economic characteristics as well as data on housing conditions of families and the extent to which they benefited from existing infrastructure, accompanied by a general census of property to establish its quantitative and qualitative importance. All business enterprises were the subject of a parallel census.

For the first time, the questionnaires were designed to facilitate the rapid extraction of many preliminary results. The first were published in April 1977. Nevertheless, one should be cautious in comparing global results from this census with those of 1960 and 1966 because of frontier realignments following the war with Israel. This problem will be resolved with the publication of "shiakha" level data. (The shiakha is the smallest administrative unit in the country, the government being the largest.)

Taking account of the under-enumeration of children below the age of 10, N. Fargany [9] has corrected the data provided by the censuses: only the 1947 figure borrowed from El Badry is lower than the one given by the census (1). The revised data are shown in the following two tables and graphs.

(1) See above the paragraph on the 1947 census.

CHART 5
EGYPT TRENDS OF POPULATION GROWTH (ENUMERATED AND ADJUSTED)

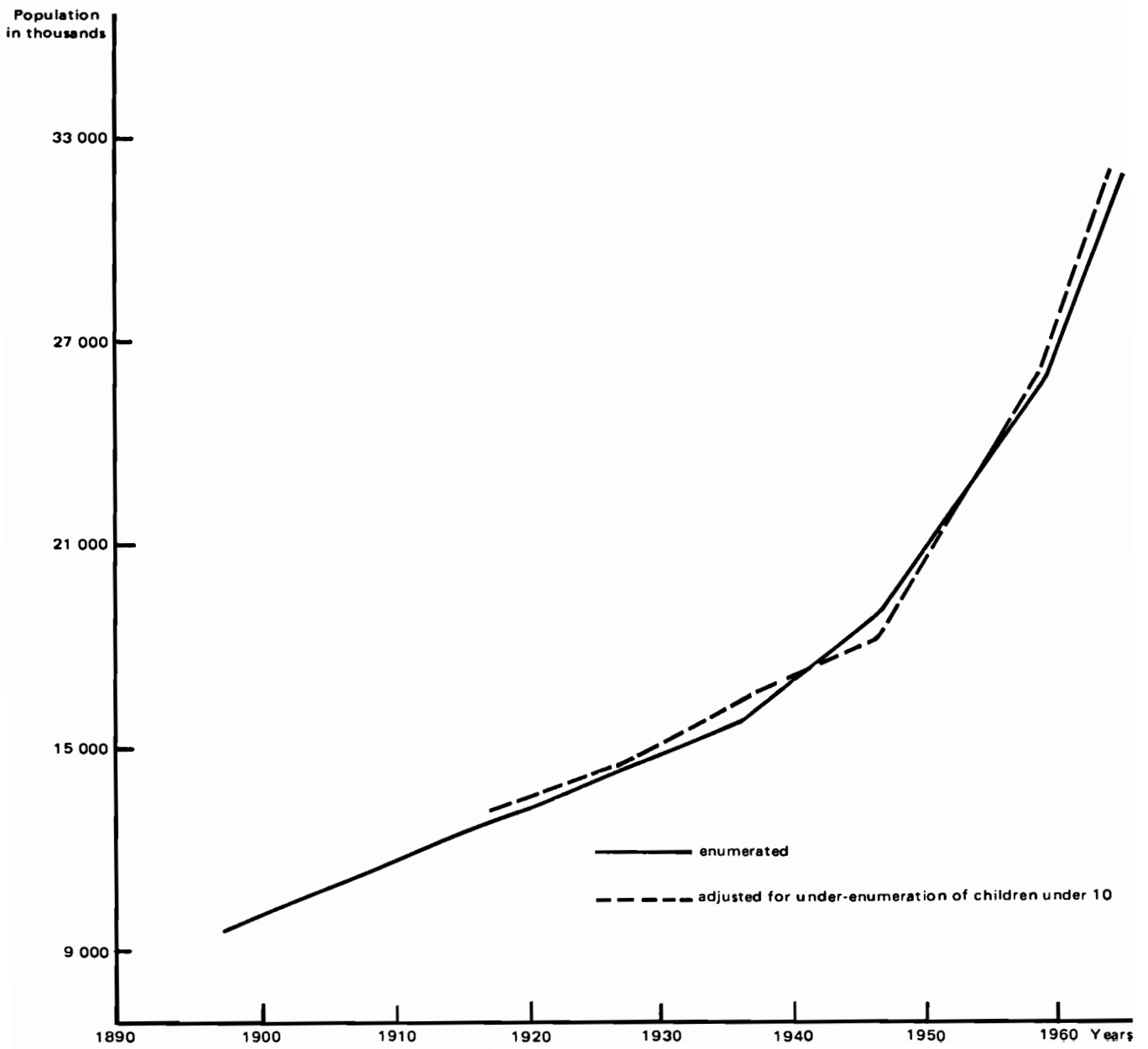


Table 24
EGYPT - CENSUS POPULATION
ADJUSTED FOR THE UNDER-ENUMERATION OF CHILDREN UNDER 10

Year	Population by 000's			Sex ratio
	M	F	Total	
1917	6 586	6 514	13 100	101.1
1927	7 287	7 274	14 561	100.2
1937	8 274	8 170	16 444	101.3
1947(*)	9 152	9 111	18 263	100.6
1960	13 156	13 147	16 303	100.1
1966	15 580	15 499	31 079	100.5

*El Badry's estimate

The adjusted data result in particular in sex ratios which are more acceptable than those obtained from the censuses, especially for the year 1947 (1). These ratios are presented in Table 26.

(1) This abnormal ratio as with the over-estimation of the total population is probably a sequel to a census carried out in 1945 to produce ration books: the number of households had been inflated by a large number of servants who were for the most part of female sex.

TABLE 25
EGYPT-ANNUAL INCREASE RATE ADJUSTED
FOR UNDER-ENUMERATION OF CHILDREN UNDER 10

Interval	Annual growth rate (%)		
	M	F	Total
1917-1927	1.02	1.13	1.08
1927-1937	1.25	1.14	1.20
1937-1947	1.01	1.09	1.05
1947-1960	2.49	2.52	2.50
1960-1966	2.98	2.90	2.94

CHART 6

EGYPT ANNUAL INCREASE RATE (ENUMERATED AND ADJUSTED)

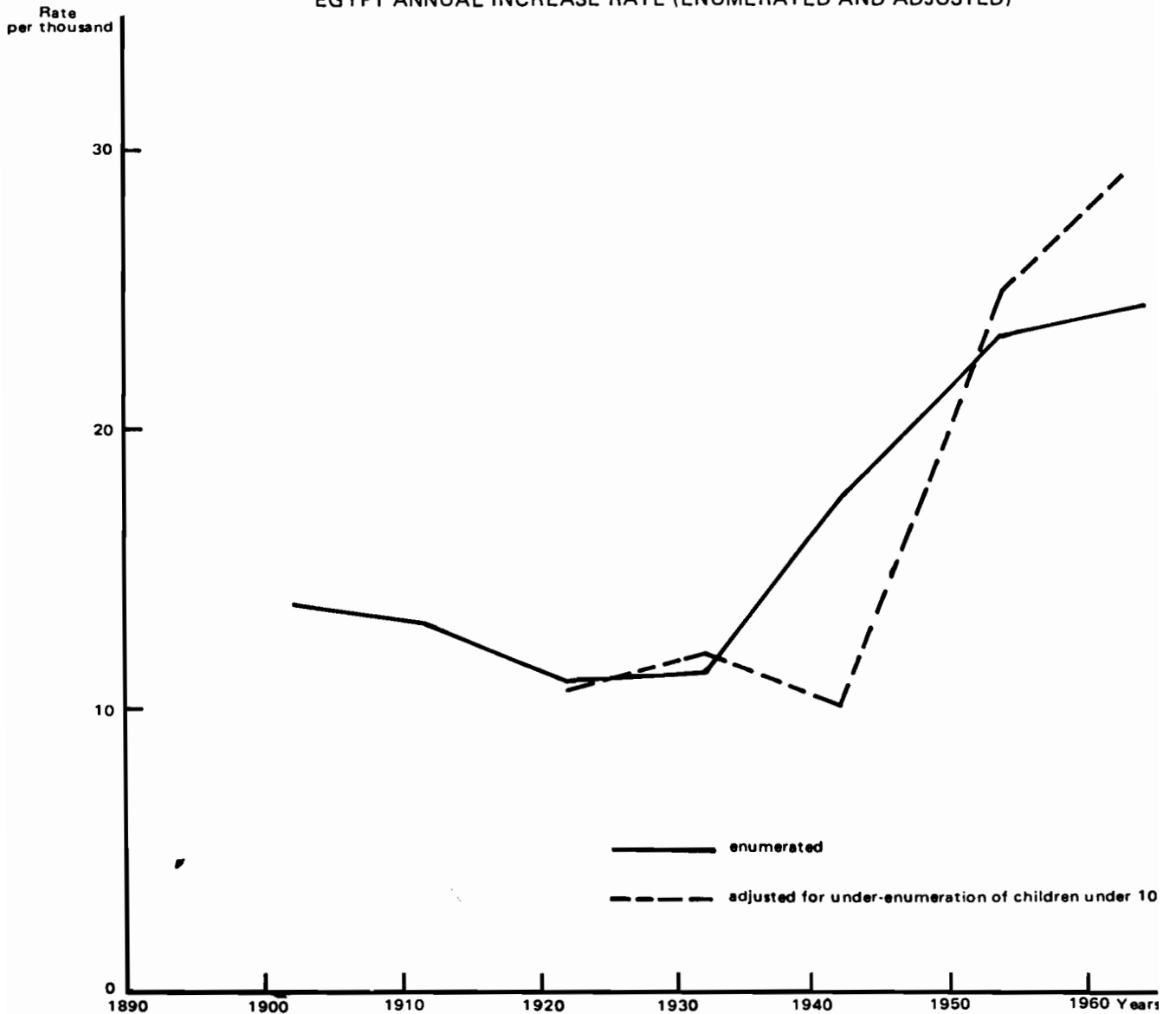


Table 26
EGYPT - SEX RATIOS
UNCORRECTED FOR UNDER-ENUMERATION OF CHILDREN UNDER 10

YEAR	SEX RATIO	YEAR	SEX RATIO
1897	103.4	1937	100.2
1907	100.8	1947	98.1
1919	100.0	1960	101.2
1927	99.1	1966	101.8

3) Civil Registration

Born in practice in 1898, the Egyptian Civil Registration was modified in 1912 and reorganised in 1962. For a long time, it suffered from a very serious degree of under-estimation, mainly in the countryside. It is estimated that around 1940-1941 only three-quarters of births and half of infant mortality below the age of one are recorded in the books. Continuous efforts made it possible to progressively close the gaps: in 1964-69, recorded births represented 93% of actual births but infant deaths registered represented only 73% of the total figure. The fact remains that the quality of birth and death registration always depends on the place where the event happens, as well as on the sex involved.

As far as the place where the event happens is concerned, great disparities are to be observed between Upper Egypt (south of Cairo) and Lower Egypt (north of Cairo) and the urban governorates: Cairo, Alexandria, Port-Said, Ismaleia and Suez. It is obviously the latter regions which enjoy the best enumeration, followed by Lower Egypt which, though it is as rural as Higher Egypt, benefits from the proximity of Cairo and Alexandria. Equally crucial to the quality of registration is the vicinity of a clinic. Thus, El Badry compared four villages similar from a geographical point of view and obtained the results shown in Table 27.

The influence of the place where the event happens is particularly pronounced in the area of infant mortality.

Table 27

EGYPT - INFLUENCE OF DISTANCE ON CRUDE DEATH RATES
ACCORDING TO CIVIL REGISTRATION

VILLAGE	DISTANCE TO THE CLINIC IN KM.	CRUDE DEATH RATES	
		1948	1951
1	0	32	38
2	2	19	33
3	2	23	28
4	6	12	29

The study of sex ratios at birth and at death throws light on differences in the quality of registration according to sex. Births and deaths of women are not as well recorded as those of men and this is not surprising given the place women occupy in Egyptian society. In addition, it should be noted that improvements achieved in Civil Registration are more notable in the case of men than of women and that differences in registration according to sex must be considered in conjunction with the regional differences mentioned earlier.

Table 33 gives rates of birth, death, growth and infant mortality between 1906 and 1973 calculated on the basis of registrations and subsequently corrected by Fergany.

III. CONCLUSIONS

The 1976 census has uncovered certain new elements :

- For the first time in history, a large number of Egyptians living and working abroad were counted. These are 1 425 000, or 3.7% of the population .
- The annual growth rate between 1966 and 1976 was 2.31%. This represents a significant decline compared with the previous decade, but it remains high and signifies that the Egyptian population increased by one person every 41 seconds during the past ten years.
- The fall in infant mortality has modified the age structure of the population: the proportion of under 12 year-olds has risen from 35.5 in 1960 to 31.6% in 1976.

- The number of unmarried adults has risen in a spectacular fashion, especially in towns. It can be supposed that this is only a calendar phenomenon: the housing crisis and economic difficulties oblige many young people to postpone their marriage. This phenomenon will probably also have an impact on the infant mortality rate.

Table 28
EGYPT - BREAKDOWN OF POPULATION BY GOVERNORATE, 1976

GOVERNORATE	POPULATION	GOVERNORATE	POPULATION
Cairo	5 084 463	Behera	2 545 246
Alexandria	2 318 655	Ismalia	351 889
Port Saïd	262 620	Giza	2 419 247
Suez	194 001	Beni Suef	1 108 615
Damietta	557 115	Fayoum	1 140 245
Dakhalia	2 732 756	Minya	2 055 739
Sharkia	2 621 208	Assyout	1 695 378
Kalyubia	1 674 006	Souhag	1 924 960
Kafr El Sheikh	1 403 468	Kena	1 705 594
Gharbia	2 294 303	Assouan	619 932
Menoufia	1 710 982		

Source: Preliminary results of 1976 census, Central Agency for Public Mobilisation and Statistics, CAPMAS

Table 29
EGYPT - TRENDS OF DENSITY

CENSUS	DENSITY WITH REGARD TO TOTAL AREA	DENSITY WITH REGARD TO INHABITED AREA
1928	14.2	273
1937	15.8	306
1947	18.9	365
1960	25.9	499
1966	30	578
1976	38.2	735

Source: Central Agency for Public Mobilisation and Statistics, CAPMAS

Table 30
EGYPT - PERCENTAGE DISTRIBUTION OF THE POPULATION BY AGE
SINCE 1927

AGE	1927	1937	1947	1960	1970
0 - 4	14.4	13.2	13.6	15.9	16.8
5 - 9	13.1	13.9	12.7	14.6	13.8
10 - 14	11.1	12.0	11.7	12.3	11.8
5 - 14	24.2	25.9	24.4	26.9	25.6
15 - 19	9.1	8.5	10.0	8.3	10.2
20 - 24	7.8	8.0	7.3	6.9	8.7
25 - 29	8.6	8.2	7.8	7.4	7.5
15 - 29	25.5	23.7	25.1	22.6	26.4
30 - 34	7.5	7.5	6.9	6.4	6.4
35 - 39	6.6	7.2	6.9	6.7	5.4
40 - 44	5.6	5.9	6.0	4.9	4.6
45 - 49	3.8	3.1	4.4	4.4	3.8
30 - 49	23.5	24.7	24.2	22.4	20.2
50 - 54	4.0	4.2	4.6	3.8	3.2
55 - 59	1.6	1.7	1.8	2.4	2.6
60 - 64	2.8	2.7	2.9	2.6	2.0
65 - 69	0.9	0.9	0.9	1.3	1.5
50 - 69	9.3	9.5	10.2	10.1	9.3
70 +	3.1	3.0	2.5	2.1	1.7
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Central Agency for Public Mobilisation and Statistics, CAPMAS

Table 31

EGYPT - URBAN AND RURAL POPULATION FROM 1887 TO 1974

YEAR	URBAN POPULATION		RURAL POPULATION		TOTAL
	Inhabitants	%	Inhabitants	%	
1897 (R)	1 655 000	17.0	8 079 000	83.0	9 734 000
1907 (R)	2 125 000	19.0	9 058 000	81.0	11 191 000
1917 (R)	2 640 000	20.9	10 029 000	79.1	12 670 000
1927 (R)	3 715 000	26.1	10 502 000	74.9	14 217 000
1937 (R)	3 995 000	27.4	11 926 000	72.6	15 921 000
1947 (R)	6 259 000	33.0	12 708 000	67.0	18 967 000
1960 (R)	9 863 000	38.0	16 222 000	62.0	26 085 000
1966 (R)	12 385 000	41.2	17 691 000	58.8	30 076 000
1976 (R)	16 092 000	43.9	20 564 000	56.1	36 656 000

Source: [18]

Table 32
EGYPT - INTERNAL MIGRATION 1965-1970 (1)

GOVERNORATES	MIGRATION (in 000's)				PERCENTAGE OF URBAN POPULATION		
	M	F	Total	Annual rate	1966	1970	1973
Cairo	+222.6	+205.7	+428.3	+ 2.1	100.0	100.0	100.0
Alexandria	+ 24.9	+ 23.1	+ 48.0	+ 0.5	100.0	100.0	100.0
Port-Saïd (2)	- 87.7	- 85.0	-172.7	-12.5	100.0	100.0	100.0
Suez (2)	-130.2	-121.9	-252.1	-19.8	100.0	100.0	100.0
Damietta	+ 13.2	+ 12.9	+ 26.1	+ 1.2	26.5	27.8	28.5
Dakahliyah	+ 33.9	+ 45.3	+ 79.2	+ 0.7	20.6	20.3	20.2
Sharkiyah	+ 54.7	+ 64.3	+119.0	+ 1.1	18.5	20.0	21.2
Qaliubiyah	+ 62.2	+ 59.1	+121.3	+ 2.1	31.4	34.7	37.2
Kafr-El-Sheikh	- 2.8	+ 6.7	+ 3.9	+ 0.1	19.0	20.3	21.4
Gharbiyah	+ 14.3	+ 26.6	+ 40.9	+ 0.4	31.5	31.6	31.7
Munufiyah	- 25.1	- 20.1	- 45.2	- 0.6	16.3	17.0	17.5
Beherah	+ 28.9	+ 46.4	+ 75.3	+ 0.8	17.9	17.4	17.0
Ismailiyah (2)	-104.5	-100.6	-205.1	-12.2	100.0	100.0	100.0
Giza	+ 91.6	+ 78.1	+169.7	+ 2.1	39.2	43.0	45.1
Beni-Suef	- 31.3	- 24.5	- 55.8	- 1.2	22.0	22.4	22.7
Fayoum	- 7.9	- 1.7	- 9.6	- 0.5	21.6	21.9	22.4
Minyah	- 35.1	- 28.0	- 63.1	- 0.7	19.9	20.4	20.7
Assiout	- 29.6	- 31.0	- 60.6	- 0.9	23.7	24.8	25.6
Suhag	- 42.3	- 52.8	- 95.1	- 1.1	20.2	20.0	20.0
Qena	- 29.2	- 27.4	- 56.6	- 0.8	19.0	19.4	19.8
Assouan	+ 52.3	+ 44.8	+ 97.1	+ 3.9	35.1	39.6	39.8

Source: Central Agency for Public Mobilisation and Statistics, CAPMAS

- (1) - = net emigration
+ = net immigration

- (2) The 1967 war was responsible for the massive emigration from these governorates.

Table 33

EGYPT - BIRTH RATE, DEATH RATE, RATE OF NATURAL INCREASE, AND INFANT MORTALITY RATE
(ENUMERATED AND ADJUSTED, 1906-1973)

YEAR	Crude birth rate		Crude death rate		Rate of natural increase		Infant mortality rate	
	Enumerated	Adjusted	Enumerated	Adjusted	Enumerated	Adjusted	Enumerated	Adjusted
1906	43.0	60.3	23.6		19.4			
1907	42.8	59.8	27.0		15.8			
1908	44.4	61.6	24.8		19.6			
1909	41.6	57.7	26.4	48.5	15.2	9.21	128	282.6
1910	43.1	59.5	20.0	39.3	23.1	20.20	137	300.6
1911	42.7	58.7	27.5	50.0	15.2	8.7	133	289.9
1912	42.5	58.5	24.0	44.8	18.5	13.7	140	303.2
1913	41.8	58.8	25.0	46.6	16.8	12.2	143	307.7
1914	42.5	57.8	27.4	49.9	15.1	7.9	150	320.7
1915	41.8	56.6	28.2	50.8	13.6	5.8	155	329.2
1916	40.3	54.4	29.9	52.1	10.4	2.3	146	308.1
1917	40.1	53.9	29.5	51.3	10.6	2.6	152	318.6
1918	38.9	52.1	39.4	65.3	- 0.5	-13.2	151	314.4
1919	37.8	50.4	29.4	48.9	8.4	1.5	128	264.7
1920	42.2	56.1	28.0	47.8	14.2	8.3	137	281.4
1921	41.8	55.3	25.5	43.5	16.3	11.8	133	271.3
1922	43.1	56.8	25.1	43.2	18.0	13.6	140	283.6
1923	43.1	57.1	25.8	44.3	17.3	12.8	143	287.7
1924	43.9	57.4	24.9	43.0	19.0	14.4	150	299.7
1925	43.5	56.6	26.4	44.9	17.1	11.7	155	307.5
1926	44.3	57.4	26.9	44.9	17.4	12.5	146	287.6
1927	44.1	56.9	25.3	42.6	18.8	14.3	152	297.3
1928	43.8	56.3	26.9	44.3	16.9	12.0	151	293.2
1929	44.6	57.1	27.9	46.0	16.7	11.1	159	306.5
1930	45.4	57.9	24.9	41.3	20.5	16.6	151	289.0
1931	44.5	56.5	26.6	43.5	17.9	13.0	160	304.0
1932	42.5	53.7	28.5	45.9	14.0	7.8	174	328.2
1933	43.8	55.1	27.5	44.0	16.3	11.1	162	303.3
1934	42.2	52.9	27.8	44.0	14.4	8.9	166	308.4
1935	41.3	51.6	26.4	41.4	14.9	10.2	161	296.9
1936	44.2	55.0	28.8	44.7	15.4	10.3	164	300.1
1937	43.4	54.0	27.1	42.1	16.3	11.9	165	299.6
1938	43.2	53.3	26.3	40.5	16.9	12.8	163	293.7
1939	42.0	51.6	25.9	39.5	16.1	12.1	161	287.9
1940	41.3	50.5	26.3	39.6	15.0	10.9	162	287.4
1941	40.4	49.2	25.7	39.9	14.7	9.3	150	264.0
1942	37.6	44.4	28.3	44.2	9.3	0.2	168	330.8
1943	38.7	45.3	27.7	41.1	11.0	4.2	160	275.3
1944	39.8	49.7	26.0	40.2	13.8	9.5	152	262.3
1945	42.7	48.9	27.7	39.7	15.0	9.2	153	255.4
1946	41.2	51.9	25.0	35.7	16.2	16.2	141	233.2
1947	43.7	50.4	21.4	30.0	22.3	20.4	127	226.5
1948	42.6	52.8	20.4	28.0	22.2	24.8	139	214.6
1949	41.6	48.8	20.6	28.7	21.0	20.1	135	221.8
1950	44.2	51.5	19.0	26.5	25.2	25.0	130	208.2
1951	44.6	51.4	19.2	26.5	25.4	24.9	129	196.2
1952	45.2	50.7	17.8	22.8	27.4	27.9	127	180.4
1953	42.6	48.8	19.6	26.0	23.0	22.8	146	223.2
1954	42.6	49.7	17.9	24.8	24.7	24.9	138	229.0
1955	40.3	49.5	17.6	23.8	22.7	25.7	136	184.9
1956	40.7	46.4	16.4	22.4	24.3	24.0	124	214.1
1957	38.0	42.8	17.8	22.6	20.2	20.2	130	195.0
1958	41.1	45.3	16.6	22.4	24.5	22.9	112	191.6
1959	42.8	47.1	16.3	21.0	26.5	26.1	109	161.9
1960	43.1	47.7	16.9	22.2	26.2	25.5	109	170.6
1961	44.1	49.0	15.8	20.1	28.3	29.9	108	159.8
1962	41.5	45.9	17.9	22.6	23.6	23.3	134	196.4
1963	43.0	43.3	15.5	18.8	27.5	24.5	118	171.3
1964	42.3	46.3	15.7	19.5	26.6	26.8	117	168.3
1965	41.7	45.2	14.0	17.3	27.7	27.9	113	160.9
1966	41.2	44.5	15.9	19.4	25.3	25.1	127	179.1
1967	39.2	42.1	14.2	17.0	25.0	25.1	116	161.9
1968	38.2	40.8	16.1	19.1	22.1	21.7	131	181.0
1969	37.0	39.1	14.5	16.9	22.5	22.2	119	162.8
1970	35.1	37.1	15.1	17.2	20.0	19.9	116	157.1
1971	34.6	36.4	13.1	14.8	21.5	21.6	103	138.0
1972	34.1	35.7	14.4	16.0	19.7	19.7	116	153.8
1973	35.4	36.9	12.8	14.1	22.6	22.8	98	128.6

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and two specialist Egyptian reviews published in Cairo :

- The Egyptian Population and Family Planning Review
- Population Research and Studies

ETHIOPIA

Habtemariam Tesfaghiorghis

MAY 1979

ETHIOPIA



E T H I O P I A

I. DATA SOURCES

In the long history of Ethiopia's existence, no census of population has as yet been taken. Due to paucity of population data, it would be difficult to reconstruct historically the size and growth of the Ethiopian population prior to 1950. Since the 1950s, estimates of the population size are available with varying reliability and from a variety of sources. The first estimate of the size of the population was obtained from the 1956 head-count of the population undertaken by the Ministry of Interior for the purpose of determining the number of constituencies and election of representatives to the chamber of Deputies of the first parliamentary election held in 1957.

For the evaluation of the size of population, the following sources of data are used in this study :

- administrative head counts undertaken for purposes of parliamentary elections
- registered number of voters in the fifth parliamentary election
- National Sample Surveys, First and Second round
- Small Scale Agricultural Sample Census

II. CRITICAL STUDY OF THE SOURCES1) Administrative Head Counts

Administrative head counts are held for purposes of parliamentary elections. The village or nomad chiefs are required to make a head count of the population under their jurisdiction and supply the information to their immediate administrative officials. Due to problems of counting procedures, lack of compliance as a result of suspicion about the purpose, transportation problems, or lack of administrative supervision and follow-up, the data are subject to a wide margin of error.

Ponsi has assessed the quality of the administrative head count as follows [7, p.7] :

"According to the Ministry of the Interior's population head count for 1962, the total population of Ethiopia was assessed at 24 130 000, a figure which is slightly larger than the Central Statistical Office's estimates for Ethiopia's population eight years later, i.e. 24 069 800. The Ministry of the Interior had collected these data

for the second parliamentary election by sending two sets of forms to each provincial governor with orders to pass them on to their sub-alterns in the awraja, weredas and mikartil weredas under their Jurisdiction. Threats of fines and other penalties were intended to ensure compliance with the order of providing an accurate head count of the people living in their administrative districts and sending these figures back to the head office. The degree of compliance varied greatly from no data whatsoever (e.g. Keffa), to data for one awraja only (Wollaita for Sidamo), to fairly complete coverage (Hararge, especially the towns). The 1966 assessment followed a similar pattern (total population 27 824 119) while the 1956 assessment was simply meant to provide the U.N. office with some indications of the size of the total population of Ethiopia (20 000 000)".

Because of the unreliability of the population estimate based on administrative head count, an estimate of the total population at the present time is not attempted here. But for nomadic population, rural population of Eritrea and other non-surveyed areas, the population estimate of these areas is mainly based on the administrative head counts.

2) Registered Number of Voters in the Fifth and Latest parliamentary Election of June 1973

The population size of a country can be estimated from the registered number of voters on the assumption that the number of voters plus non-voters equals the total population. The number of non-voters is obtained by multiplying the number of voters by appropriate multiplying factors. A voter must be at least 21 years of age, usually resident in the area and must be an Ethiopian citizen. The number of registered voters during the five parliamentary elections in 1957, 1961, 1965, 1969 and 1973 were 3 784 226; 3 939 094; 5 137 157; 5 249 896 and 7 326 356, respectively [4, pp. 37-39].

An attempt is made here to estimate the population size based on the latest parliamentary election of 1973. The registration of voters took from September 1972 to early January 1973 and the number of registered voters is taken to refer to January 1973. For the fifth parliamentary election 7 326 356 voters were registered of whom 74 percent were male and 26 percent were female. The percentage age-distribution of voters is such that 66 percent, 26 percent and 9 percent were in the age groups 21-35, 36-50 and over 50 years, respectively [4, p. 34]. The existence of serious under-registration of voters by age is depicted by comparison of the observed age-distribution of voters with the expected percentage age-distribution of population aged 21 and over. Table 34 gives the comparison of the age-distribution along with the distribution of male voters by age.

Table 34

ETHIOPIA - OBSERVED AND EXPECTED PERCENTAGE AGE-DISTRIBUTION
OF POPULATION AGED 21 AND OVER AND OBSERVED AGE-DISTRIBUTION
OF MALE VOTERS

AGE GROUP	OBSERVED (%)	EXPECTED (a) (%)	MALE VOTERS
21 - 35 years	66	50	5 421 503
36 - 50 years	25	31	1 355 376
Over 50 years	9	19	487 935
TOTAL 21 YEARS AND OVER	100	100	5 421 503

(a) Source: [2, Table III, P.37]

The estimation of total population from the registered number of voters is made under the following three assumptions :

a) The number of registered male voters was about correct while the number of female voters was under-registered. Female population aged 21 and over is estimated by dividing the number of registered male voters by sex ratio of the population aged 21 and over.

Number of registered male voters	5 421 503
Sex ratio of population aged 21 years and over	1.02
Number of females aged 21 years and over	$\frac{5\ 421\ 503}{1.02}$
	= 5 315 199

The ratios of male and female non-voters to voters aged 21 years and over as computed from the adjusted age-sex distribution of the population of Ethiopia are 1.283 and 1.237, respectively.

Males under 21 years of age	$5\ 421\ 403 \times 1.283 = 6\ 955\ 788$
Females under 21 years of age	$5\ 315\ 199 \times 1.237 = 6\ 574\ 901$
Total Population as of January 1973 voters + non-voters	$10\ 736\ 702 + 13\ 530\ 689 = 4\ 267\ 391$

b) Male registered voters aged 21-50 is about complete and should represent 81 percent rather than 91 percent of the population aged 21 and over while those aged above 50 years are under-registered and should correspond to 19 percent of the population aged 21 and over. Adjustments for female under-registration is made as in assumption one.

Registered male voters aged 21-50 years	4 933 568
81% of voters	4 933 568
Therefore 19% of voters	1 157 257
Male population under 21 years of age	6 090 825 x 1.283 = 7 814 528
Female population 21 years and over	$\frac{6\ 090\ 825}{1.02} = 5\ 971\ 397$
Female population under 21 years of age	5 971 397 x 1.237 = 7 386 618
Thus the total population as of January 1973 would be	27 263 368

c) Registered male voters aged 21-35, are about correct while those aged 36 and over are under-registered. According to the expected percentage-age-distribution of population aged 21 years and over, the population aged 21-35 years should be equal to the population aged 36 years and over and this is the basis for the adjustment.

Registered males 21-35 (=those aged 36 years and over)	3 578 192
Thus total males aged 21 and over	7 156 384
Males under 21 years of age	7 156 384 x 1.283 = 9 181 641
Females aged 21 and over	$\frac{7\ 156\ 384}{1.02} = 7\ 016\ 063$
Female population under 21 years of age	7 016 063 x 1.237 = 8 678 870
Thus the total population as of January 1973 was	32 032 958

The main drawback of this method is under-registration of voters, especially females. The Electoral Board noted the following problems of registration [4, pp. 59-60] :

- Failure of some registrars in understanding and implementing directives that are issued from time to time.
- A large number of people who did not show up during the scheduled registration period turned up at the closing time and thus many of these did not get the chance to register.
- The lack of birth certificates and usual residence identification cards created procedural problems of registration.
- By virtue of the mobility of nomads in search of water and pasture, many nomads were not found in their registration districts during registration.

3) National Sample Surveys and other Demographic Surveys undertaken by the Central Statistical Office

The Central Statistical Office has undertaken two rounds of multipurpose national sample surveys that covered the sedentary rural and urban areas of the country, the first round and second round being conducted in 1964-67 and 1968-71, respectively. The Office has also undertaken a population census of the two cities, Addis Ababa and Asmara. Currently, detailed urban population data will be obtained from the Manpower and Housing Sample Survey conducted in 18 major urban areas in 1978 and the Addis Ababa Demographic survey of August 1978, which are being processed.

The basic sources for the official population estimate for the surveyed areas are the two rounds of national sample surveys, especially the second round due to its better design. As a source of estimating the population size of the country, the two national sample surveys have the following weaknesses :

- Nomads were excluded.
- Due to problems of security, the population of Eritrea was not surveyed.
- A large number of urban localities was not surveyed due to problems of security and transport inaccessibility. However, in terms of total urban population coverage the majority of urban population could be considered as covered by the surveys.
- For purposes of current population estimate, the results of the two national sample surveys are out of date.

Since the population of the non-surveyed areas constitutes a significant population, the estimation of the population of Eritrea and nomadic areas is treated separately in Section III.

4) Small-Scale Agricultural Sample Survey

An estimate of the rural population was obtained from the 1976/77 Small-Scale Agricultural Sample census conducted by the Ministry of Agriculture and Settlement. Estimates obtained from the Sample census put the rural population of the surveyed regions for January 1977 at 24 080 800 [14, p.49]. It did not survey the rural population of two regions, namely Eritrea and Tigray for reasons of security and like the C.S.O.'s national Sample surveys, it excluded the nomadic population. The survey was a two-stage sample design, the first stage consisting of the stratification of farmers' associations by regions and cropping pattern and a sample of farmers' associations were selected at random and proportionally to the total number of farmers' associations in each stratum. At the second stage, some percentages of holders' households were selected [14, p.2]. As is evident from the design, the reliability of the population estimate much depends on the adequacy and completeness of the sampling frame of farmers' associations and the sampling procedure followed.

III. ESTIMATES OF THE POPULATION OF NON-SURVEYED AREAS

1) The Population of Eritrea

The two national sample surveys did not cover the rural population of Eritrea due to problems of security. However, the urban population was surveyed during the Urban Survey, First Round with the exception of some major urban areas such as Keren, Akordat, Tesseney, Om-Hajer, and Barentu. Based on administrative headcounts, the Eritrea regional administration office had put the 1965 population of Eritrea at 1 583 864 of which 1 433 864 was rural and 282 858 was urban [15, p. 34]. For the rural population this estimate is accepted, but for the urban areas the C.S.O.'s population estimate of the surveyed urban areas is accepted as reliable. The Regional Administration Office of Eritrea gave the 1965 population of the urban areas of Akordat, Keren, Om-Hajer, Tesseney and Barentu at 20 000, 17 857, 15 000, 12 000 and 5 000, respectively.

2) Estimates of the Nomadic Population

The nomads wholly or partly inhabit about 43 out of the 102 awrajas (districts) of the country and 100 weredas (sub-districts) out of the 568 weredas. In terms of land area, the nomads occupy more than one-third of the total area of the country. According to the assessment by the Ministry of Land Reform, the nomads constitute 8 percent of the total population and occupy or roam over an area of more than half of the total area of the country [6, p.3]. The nomads inhabit the lowland areas of the country which are the Northern, Western, Southern and Eastern lowlands. Nomads are found in all regions of the country but the majority of them are found in Hararge, Eritrea, Bale, Sidamo, Wollo, Tigray and Gamo-Gofa.

An attempt is made here to present estimates of nomadic populations by regions using available administrative data and other sources.

Hararge

The part of Hararge region known as Ogaden (six districts) is inhabited mostly by nomads. According to administrative data supplied by nomad chiefs, there were 660 000 nomads and 160 500 sedentary population in the Ogaden as of 1968 10, p.55 . The nomads living outside Ogaden but in other districts of Hararge are estimated to be 336 000 [13, pp. 30 and 34]. Thus, the total number of nomads in Hararge region as of 1968 can be put at 996 000.

Eritrea

There are nine districts in Eritrea and due to lack of adequate information on the districts that are inhabited by nomads, four districts namely Hamasien, Akeleguzai, Serae, and Karen are assumed sedentary and the rest nomadic or partly nomadic. Based on the 1965 administrative data, the population of the five assumed nomadic districts was 432 812.

Bale

In Bale, Elkere district and the other four sub-districts are completely nomadic. The estimated population of Elekere district as of 1970 was 138 000 and of the four sub-districts was 243 000 [10 p.54]. Hence, the estimated nomadic population as of 1970 was 281 000.

Sidamo

Borena and Arero districts are mainly nomadic and the remaining four districts are partly nomadic. The data available refer to Borena and Arero districts. A special study of the pastoralists in the two districts was undertaken by the Livestock and Meat Board which resulted in a population of 261 000 of which 236 000 are nomadic and 25 100 are sedentary [5, pp. 31-34].

Nomads in Eastern Lowlands of Wollo and Tigray

According to data supplied by administrative officials, the nomads inhabiting these areas were estimated at 150 000 in 1967. [10, p. 56].

Gamo-Gofa

Geleb and Hamer Bako is the only nomadic district and the estimated population as of January 1978 was 168 600.

Illubabor

Nomads are found in Gamballa, and Mocha districts. For January 1977, the nomads in Gambella and Mocha may be estimated at 57 500 [10, p. 57] and 30 400 [11, p. 6], respectively.

Shoa

A small number of nomads is found in three districts of the Eastern lowlands bordering the Awash valley. As of 1974, the Kereyu nomads were estimated at 10 000 [13, p.45]. The Adal nomads in Yerer and Kereyu district and the nomads found in the other two districts may be estimated at about 25 000 giving an estimated total nomads in Shoa of 35 000.

Summary

To present an estimate of the total nomads in the country, the estimated nomads by region were up-dated to January 1975 by assuming that the nomadic population grows constantly for the periods 1960-1970, and 1970-1975 at 2.2 and 2.3 percent per annum respectively. Applying these rates the estimated size of the nomadic population as of January 1975 would be 2 718 547. The estimated size of the nomadic population should be used with caution because of the weakness of the sources used. It should also be noted that the estimate is not complete due to the fact that data on the number of nomads in Keffa, Wellega, Gojjam, Begemder and Arssi regions are not available. However; the number of nomads in these regions may be assumed insignificant.

IV. RESULTS AND CONCLUSIONS

The population estimates from the various sources were up-dated to January 1975 by assuming that the population grows at a constant rate of 2.2 and 2.3 percent per annum for the periods 1960-1970 and 1970-1975 respectively (1). The results are shown in Table 35.

The estimated population size of Ethiopia in January 1975 ranges between 25 362 743 and 33 478 795. Due to the serious under-registration of voters already noted, the population estimate of 25 362 743 according to the first assumption cannot be accepted. Thus the possible population size ranges between 27 181 200 and 33 478 795. Compared with the other sources, the official estimates based on national sample surveys are too low. If we assume the mean value to approximate the true population value, the mean estimate would be 29 800 091. An assessment of the possible population size by regions was made and it resulted in a population of 30 060 400 which is accepted as the plausible new population size estimate of Ethiopia. As compared with the new population estimate, the official figure of 27 181 200 underestimated the population size by 9.6 percent. The urban and nomadic population constitute 10.4 and 9.0 percent respectively of the total population. The new population estimate by region for January 1975 and the official estimate as well as the percentage under-estimation of the official figure from the new estimate are given in Table 36. Table 37 presents data on the rural sedentary, nomadic and urban population by region in January 1975.

(1) The 2.2 percent rate was calculated from the first and second stages of the national demographic sample survey. The 2.3 percent rate was calculated from the results of the population projections for the period 1960-2000 [2].

Table 35

ETHIOPIA - ESTIMATES OF POPULATION SIZE FROM VARIOUS SOURCES -
JANUARY 1975

SOURCE	SEDENTARY RURAL POPULATION	NOMADIC POPULATION	URBAN POPULATION (a)	TOTAL
Register of voters according to :				
1st Assumption	-	-	-	25 362 743
2nd Assumption	-	-	-	28 493 887
3rd Assumption	-	-	-	33 478 795
National Sample Survey :				
First Round	-	-	-	28 185 035
Second Round	-	-	-	27 181 200
Small-Scale Agricultural Sample Census	25 817 152	2 718 547	3 125 838	31 661 537

(a) Urban population as mostly obtained from the two national Sample Surveys, and urban area defined as localities with inhabitants of 2 000 and over.

The fact that the official 1975 population figure is over-estimated is corroborated by estimates prepared for Ethiopia by the United States "Bureau of the Census". This body calculated recent demographic estimates for countries and regions throughout the world in its publication "World Population 1977". It estimated the mid-1975 Ethiopian population to be 29 529 000, or 7.3 percent higher than the official estimate at the same date (27 520 900).

Table 36

ETHIOPIA - COMPARISON OF THE NEW AND OFFICIAL ESTIMATES
BY REGION - JANUARY 1975

REGION	POPULATION (in thous ands)		DIFFERENCE	
	Official Estimate (a) (1)	New Estimate (2)	(1)-(2) = (3)	(4) = $\frac{(3)}{(2)} \times 100$
Arssi	1 007.2	1 210.1	- 202.9	- 16.8
Bale	767.5	852.0	- 84.5	- 9.9
Gamogoffa	875.9	879.5	- 3.6	- 0.4
Gojjam	1 784.0	1 869.6	- 85.6	- 4.6
Gondar	1 797.4	1 857.8	- 60.4	- 3.3
Eritrea	2 124.7	2 362.0	- 237.3	- 10.0
Hararge	2 735.2	3 145.5	- 410.3	- 13.0
Illubabor	707.5	848.3	- 140.8	- 16.6
Keffa	1 413.7	1 607.7	- 194.0	- 12.1
Shoa	5 565.4	6 337.9	- 772.5	- 12.2
Sidamo	2 457.1	2 894.2	- 437.1	- 15.1
Tigray	1 892.0	1 900.0	- 8.0	- 0.4
Wollega	1 767.9	1 780.1	- 12.2	- 0.7
Wollo	2 285.7	2 515.7	- 230.0	- 9.1
TOTAL	27 181.2	30 060.4	-2 879.2	- 9.6

(a) Source [3]

Table 37

ETHIOPIA - NEW POPULATION ESTIMATE - JANUARY 1975
(population in thousands)

REGION	RURAL SEDENTARY POPULATION	NOMADS	URBAN POPULATION	TOTAL
Arssi	1 154.6	-	55.5	1 210.1
Bale	510.9	314.1	27.0	852.0
Gamogofa	703.5	156.6	19.4	879.5
Gojjam	1 765.2	-	104.4	1 869.6
Gondar	1 735.1	-	122.7	1 857.8
Eritrea	1 276.2	-	546.7	2 362.0
Hararge	1 780.0	1 163.2	202.3	3 145.5
Illubabor	740.5	83.8	24.0	848.3
Keffa	1 525.4	-	82.3	1 607.7
Shoa	4 890.8	35.7	1 411.4	6 337.9
Sidamo	2 387.7	247.1	259.4	2 894.2
Tigray	1 688.8	89.5	121.7	1 900.0
Wollega	1 722.4	-	57.7	1 780.1
Wollo	2 335.0	89.4	91.3	2 515.7
TOTAL	24 216.1	2 718.5	3 125.8	30 060.4

Note : Ethiopia is divided administratively into 14 regions, 102 districts ("awrajas"), 570 cantons ("weredes"), about 25 000 peasant associations totalling 7 million members, and about 260 urban centres of 2 000 inhabitants and more, organised in about 1 140 urban dwellers associations.

Suggestions for Improving Data Sources

The foregoing discussions reveal that it has not been possible to estimate the population size of Ethiopia with certainty due to the fact that no census of population has been taken as of yet, and the national Sample Surveys were geographically incomplete and out of date. To fill up the current critical demographic data gap and improve their quality the following measures are strongly recommended.

- A comprehensive census of population covering all sedentary rural areas, nomadic and urban areas of the country should be taken as soon as the situation matures (it has already been noted that security problems have been a hindrance to complete geographical coverage and thus a conducive socio-political situation is a necessary condition for taking a census).
- As an interim measure, nation-wide demographic surveys should be taken to fill the data gaps. Future demographic surveys should have complete geographical coverage and be representative of all categories of the population : sedentary rural population, nomadic and urban population.
- The Central Statistical Office in cooperation with concerned offices and agencies should initiate and establish a complete and up-to-date register of the resident households within urban dwellers' associations and members of peasant association areas (farmers' associations). Such registers would produce data for estimating population size at any point in time for any administrative level by applying appropriate multipliers to the number of registered resident households and peasant members. Currently the peasants in rural areas are organised into peasant association areas on an area of about 800 hectares and having membership of about 300 peasant families. The urban population is organised into urban dwellers' association areas where each association comprises at least 2 000 urban residents. These are the smallest administrative divisions in the rural and urban areas and constitute a useful statistical frame of administrative areas.
- Expansion of the current experimental vital registration system that is under way in a sample of urban and rural registration areas. The outcome of the expansion of the experimental registration should lead to the establishment of a nationwide vital registration system subsequent to the taking of a population census.
- Establish and maintain a register of Ethiopians living abroad and foreign nationals residing in Ethiopia.
- To minimise data errors introduced from data collection to processing stage, intensive training and field checks, legible handwriting, use of mostly pre-coded questionnaires and computer-edit programmes are recommended.

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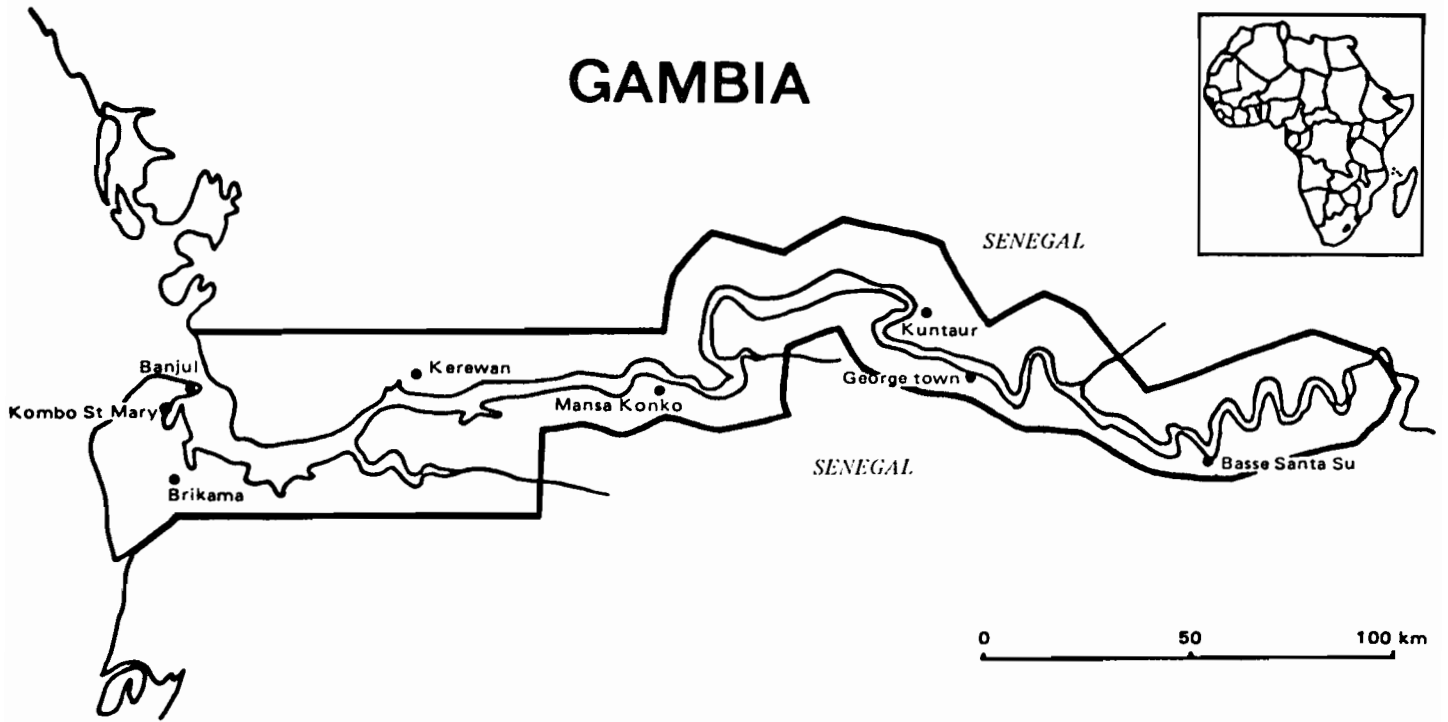
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GAMBIA

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GAMBIA



G A M B I A

I. SOURCES OF DEMOGRAPHIC DATA

The first attempts at estimating the Gambia's population were made in 1881 and 1891. However, estimates derived from these attempts are not comparable with figures from later censuses due to boundary changes. The estimates of the country's population derived from subsequent censuses are given in Table 38 below.

Censuses prior to 1963 do not appear to have been very reliable. For these censuses the whole country was covered by only four travelling Commissioners, each with a staff of one clerk. The Commissioners personally over a period of months counted the people of each village as they toured their areas. Kuczynski [4, p.33] states that "the 1911 count was certainly incomplete, though more complete than that of 1901". With regard to the 1921 census he states that, "there is no evidence that this (1921) count was incomplete". Even if the 1921 count was complete, the 1931 count which recorded a lower figure than 1921 does not seem to have been so. The population estimates from these censuses thus seem to be of doubtful reliability.

Table 38

GAMBIA - POPULATION AT SUCCESSIVE CENSUSES

YEAR	POPULATION	AVERAGE ANNUAL INTERCENSAL GROWTH RATE
1901	90 404	
1911	196 101	4.9
1921	210 611	3.7
1931	199 520	-0.6
1963	315 486	1.4
1973	493 499	4.6

No censuses of the country were conducted in the years between 1931 and 1936. In 1944 only Banjul was enumerated whilst in 1951 only Kombo St. Mary was covered. The 1963 census was the first simultaneous census to be carried out in the country. It was followed 10 years later by the 1973 census. These censuses form the main source of data on the Gambian population. The only other relevant data available consist of studies of small groups of the population.

Table 38 shows the estimates of the Gambian population derived from censuses. The trend over the years is rather irregular and suggests coverage errors. The average annual growth rates derived from the censuses prior to 1963 seem quite unreliable, the period between 1921 and 1931, for example, showing a negative rate of growth. Caldwell concludes that "taking the record at face value we could draw the conclusion that prior to 1931 (or perhaps some subsequent turning point) population growth was slow or even uncertain, with increase or decrease determined almost at random by the occurrence and timing of epidemics".[1] The reason for the marked fluctuations in the growth rates are not known for certain but it is still unlikely that the true values have followed a declining trend. There have been no major disasters, emigrations or evidence of declining birth rates. On the other hand, it is reasonable to assume that mortality rates must have declined as a result of expansion and improvement of medical and health services, and that migration into the country has been on the increase as a result of the relatively better economic circumstances compared with neighbouring countries. These would point to an increasing rate of population growth.

It is also likely that the coverage achieved by the censuses has varied over time. With the censuses prior to 1963 "people were bidden from near and far to a meeting place, and there made to give a report on the number of persons living in their village"[5]. As such not every village was visited and no enumeration of individual persons made.

For the 1963 census the country was divided into enumeration and supervisory areas, short training courses of census officials held, a specific time period set for the enumeration and some effort made at controlling the quality of the data collected and published.

For the 1973 census, even more meticulous procedures were adopted. Enumeration and supervisory areas were better defined and mapped, more comprehensive training courses were given and field supervision was more stringent. Thus the results of these two censuses are perhaps the only reliable source of data on the country's population.

Some estimates of the evolution of the Gambian population over the past thirty years have been made and are given below in Table 39. These are derived mainly from back-projections of the 1963 and 1973 censuses using various assumptions. The estimates show a wide range of variation and are presented here merely to give an idea of the possibilities. The plausibility of these estimates is open to question and cannot for sure resolve the question of the evolution of the Gambian population with any great degree of certainty due to the 30 year gap between the 1931 and 1963 censuses and the absence of accurate age data.

Table 39
GAMBIA - POPULATION ESTIMATES FOR 1950-1965
 (in '000)

SOURCE	1950	1955	1960	1965
United Nations	347	366	391	422
U.S. Bureau of the Census	282	317	357	404

II. STUDY OF SOURCES - 1963 AND 1975 CENSUSES

Table 40
GAMBIA - POPULATION ENUMERATED IN 1963 AND 1973 BY AGE AND SEX

AGE	1963		1973	
	M	F	M	F
0 - 4	22 253	22 264	41 232	41 751
5 - 9	22 454	21 821	36 825	36 435
10 - 14	15 454	14 340	24 587	22 868
15 - 24	27 044	33 191	40 236	43 774
25 - 34	29 438	32 681	40 382	42 749
35 - 44	18 678	14 802	26 395	24 146
45 +	25 528	15 538	39 864	30 450
N.S.	-	-	865	940
TOTAL	160 849	154 637	250 386	243 113

Table 40 shows the population by age and sex recorded for the 1963 and 1973 censuses. The age groups are those used in 1963 and do not permit comprehensive comparisons with the more detailed breakdowns used in 1973. These two censuses provide the basis of demographic measures on the Gambian population.

1) De facto Population

Both the 1963 and 1973 censuses were 'de facto' counts of the population. In 1963 the unit of enumeration was 'households' for Banjul and 'compounds' for the rest of the country. In 1973, however, 'households' were used for the whole country. The choice of 'households' defined as groups of "persons who normally live and eat together", led to confusion. Thus although interviewers were trained to enumerate people according to "where they happened to be at census moment" (de facto), they were to do so according to the household they happened to be in implying a "de jure" enumeration. In practice, a "de facto" enumeration was employed as people were enumerated in the household they were found in, whether they normally lived and ate there or whether they were strangers and happened to be there. But the confusion created by this definition of household, in the minds of both the census agents and those enumerated led, as a subsequent study of tape recorded interviews showed, that "in the majority of interviews, the household concept was either misinterpreted or not used at all." [3]

Because of the variety of living and eating arrangements in the country, interviewers and respondents were often confused as to what household to allocate a respondent to or whether a particular respondent should be enumerated or left out. Although it is perhaps reasonable to assume that the resultant numbers of persons double counted would be balanced out by the numbers omitted, this may not have been so. A study of the census documents on 4 villages in Kiang West District which involved the matching of respondents with records of residents of these villages (kept and updated continuously by the Medical Research Council) showed that the number of persons missed by the census was nearly twice the number double counted. [2] One can conclude that it is perhaps likely that the total population may have been understated for both censuses although the 1973 census may have attained a relatively better coverage. The implication here is that though it is possible that the 1973 census undercounted the country's population, the apparent growth rate between the 1963 and 1973 censuses may be misleading as part of this increase is due to coverage errors.

2) Migration and Inter-Censal Growth

The 1963 and 1973 censuses suggest that the country's population increased from 315 486 to 493 499 thus showing an apparent annual rate of increase of 4.5% for the country. After detailed analysis of the data on fertility, mortality and place of birth for the two censuses, it was estimated that 2% per annum could be attributed to natural increase, 0.8% per annum to net migration into the country and 1.7% to an undercount of the population in 1963.

However, more recent evidence seems to suggest that migration into the country takes place on a larger scale than was originally thought to be the case. The study on 'foreign farmers' (agricultural migrant labourers) estimated the number of non-Gambians engaged in this activity in 1974-1975 at 24 000 [7]. Of this number, 58% had moved into the country during that year. Of the remainder (i.e. those who were already in the country during 1973-1974) three-quarters had also been there during the 1973 wet season and furthermore 82% of these people expressed a desire to settle in the country. When one

considers the fact that there are other migratory streams into the country, with possibly similar consequences as for foreign farmers, a figure of between six to seven thousand migrants settling annually in the country is perhaps a conservative estimate. This figure is about twice that estimated for the 1963-1973 intercensal period.

It thus seems that a perhaps significant proportion of the intercensal apparent rate of increase originally attributed to an undercount of the population in the 1963 census was probably due to immigration, wrong reporting of nationality or place of birth being greater in 1973 than in 1963. This implies that the rate of population growth is likely to be higher than the 2.8% per annum previously estimated (2% for natural increase and 0.8% for immigration.) In contrast the highest U.N. estimates for the periods 1965-1970 and 1970-1975 are 1.8% and 1.9% per annum respectively. [8]

3) Foreigners

Table 41 shows a breakdown of the population by nationality for the 1963 and 1973 censuses. It shows that over ten percent of the population in 1973 were foreigners.

Table 41

GAMBIA - POPULATION BY NATIONALITY 1963 AND 1973

	1963	1973	% Increase	Annual Average Growth Rate
Gambians	279 931	440 706	57.4	4.8
Other Africans	34 938	50 843	45.4	3.9
Non-Africans	617	1 159	88.0	
N.S.	-	791	-	
Total	315 486	493 499	56.4	4.5

In the analysis of the 1973 census data, after making due allowance for mortality among the foreign born population in 1963, the rate of net migration into the country during the intercensal period was estimated at 0.8% per annum. This gives a figure of 34 000 immigrants during the period, which accounts for 14% of the intercensal increase. Thus of the 52 000 foreigners enumerated during the 1973 census, more than half were estimated to have moved into the country during the intercensal period. However, it is very likely that there was a significant amount of misreporting of birth place or nationality resulting in an underestimation of the number of foreigners. With

the changing political and economic circumstances in many African countries foreigners usually have some motive to conceal their nationality. Furthermore the study of migrant farmers, mentioned previously, suggests that "the foreign farmer system might be a means of transitional mobility - leading to permanent settlement" [7]. The size of the migration flows suggests that the estimates of the contribution of migration to the 1963-1973 estimated population growth rate was too low and that consequently the undercount of the 1963 census may therefore have been less than was estimated. It is estimated by the author that 17.8% of the intercensal growth is attributable to net immigration (against 14% for the first estimate) and 37.8% to the underestimation of 1963 (against 44%).

4) Households

The application of this concept posed a number of problems mainly due to the difficulty of conveying its meaning in the local languages and the variety of living arrangements in the country frequently resulting in difficulty in deciding whether to include or exclude a particular respondent in a given household.

Subsequent study of a sample of recorded interviews showed that for only 5% of the interviews was the census definition of household correctly utilised. For 46% of the households interviewed, the concept was defined variously as "yard/compound", "those who slept here", "house", or even "farming unit". For another 48% of the interviews, no definition at all was used [3].

It is difficult to estimate the degree to which the misapplication of the household concept would have biased the census count towards either an under- or overenumeration of the population. However, it does seem to have been a significant source of error.

5) Fertility

Another factor which must have affected the estimate of the total population in 1973 is that of fertility reporting. Because of cultural factors, women would normally report adopted children or children of relatives, living with them, as their children. Though the concept of women's biological children was stressed in the census as well as that of 'live birth', interviewers generally avoided specifying the biological aspect (presumably to avoid offending respondents). The first factor (biological) would tend to result in an over reporting of children (i.e. assuming that adopted children are reported on both by their adopted as well as biological mothers). Similarly non-application of the live birth concept would tend to result in still births and abortions being counted as births. However, one factor of even stronger cultural bias is that of reluctance to count all children a woman has given birth to. Also there are problems associated with memory lapses and difficulties in handling high numbers all of which may result in an understatement of fertility. It is perhaps reasonable to assume, in the absence of contrary evidence that the effect of all these factors would be to balance each other out. However, more detailed study of these is needed.

III. CONCLUSIONS AND CURRENT ESTIMATES

Prior to 1963, the course of evolution of the Gambian population is not clear for certain. Though censuses have been conducted since 1881, their results are of doubtful reliability. Census procedures were very rudimentary and the figures derived from them can only be regarded as rough estimates. Also the 32 year gap between the 1931 and 1963 censuses leaves much room for conjecture.

Whilst the 1963 and 1973 censuses represented substantial improvements on previous censuses, problems still remain in the estimation of the rate of growth of the country's population. These are due to difficulties in collecting reliable age data in censuses, estimation of the contribution of migration to growth, determination of the degree of undercoverage in these censuses and the complete absence of vital statistics data for the country as a whole. In such a situation, it is difficult to be dogmatic. However, this is not peculiar to Gambia and is faced by many African countries. Table 42 shows estimates of the population between 1965 and 1975. It should be borne in mind that though the 1963 census reported 315 000 people, this figure is perhaps an undercount. Analysis of the 1973 census resulted in an adjusted figure of 382 000 for 1963. This estimate was arrived at using the reverse survival techniques.

Table 42

GAMBIA - RECENT ESTIMATES OF THE POPULATION, 1965-1975

(in thousands)

SOURCE	1963	1965	1970	1973	1975
United Nations	-	422	463	-	509
U.S. Census Bureau	-	404	458	-	524
Statistics Department - Gambia	382	-	-	496	524

Based on the assumption that the fertility and migration rates remain constant during 1973-1975, and that the death rate declines slightly, the projected population of the country for 1975 is 524 000 [6]. This figure follows from the hypothesis that the birth rate of 49 per thousand estimated from 1973 census data remains constant over the projection period. This assumption is based on the fact that with the young age structure of the population, fertility increase which would be the logical outcome would perhaps be balanced out by the impact of the expansion of family planning programmes and improvements in educational and socio-economic standards, at least for the foreseeable future.

As regards mortality, it is assumed that improvements in medical and health services would result in a slight mortality decline between 1973 and 1975 such that expectation of life increases by about one third of a year annually. The estimated rate of net migration of 0.8% per annum is also assumed to have continued beyond 1975.

Table 42 shows that the United Nations projections estimates a lower figure for the Gambia's 1975 population. However, it appears more likely than not that the Gambian population in 1975 was perhaps greater than the figure of 524 000 estimated by the Statistics Department of Gambia.

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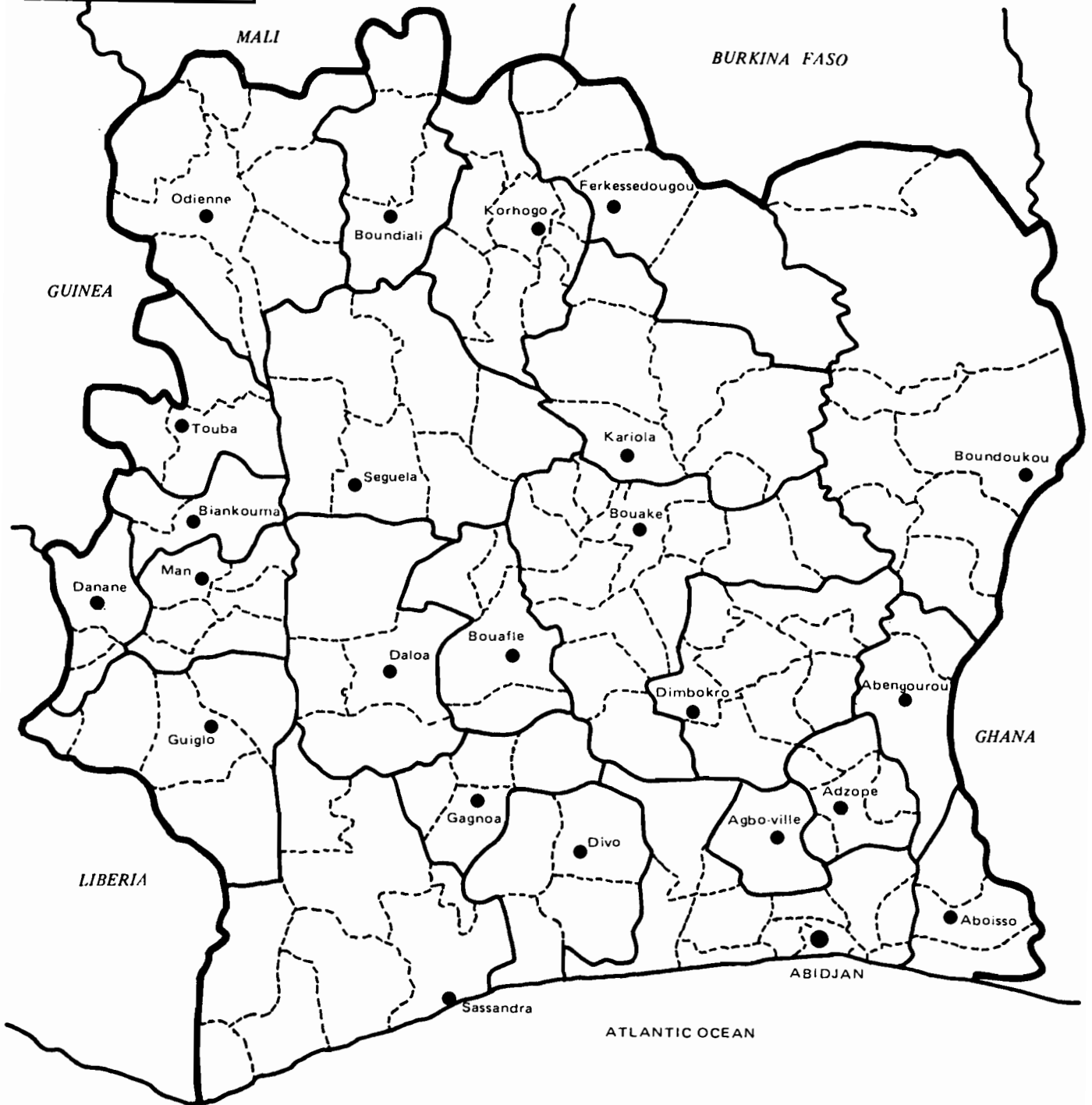
IVORY COAST

Francoise Binet

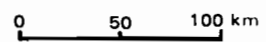
Claude Paulet

NOVEMBER 1979

IVORY COAST



- Department boundaries
- Administrative capital of department
- - - Sub-prefecture boundaries



I V O R Y C O A S T

I. SOURCES OF DATA

The first calculations of the population of the Ivory Coast go back to 1917, and up to 1956 they are based on the administrative censuses (1917, 1936, 1946, 1950, 1955, 1956). The censuses were in fact phased over time, the administrative authorities carrying out a census of a certain number of villages each year, and population figures therefore being periodically brought up to date. Apart from the fact that these censuses generally lack precision on fundamental individual characteristics (age, sex, marital status...) their degree of underestimation is considered significant: 15% for the period 1917-1936, 22% for the period 1946-1956 [5], 25% for 1956 [2].

From 1955 onwards, a serious effort was made in collection, manifesting itself in a series of censuses and surveys in urban and rural areas:

- censuses of Abidjan (1955), Agboville (1956), Man, Dales, Abengourou, and Dimbokro (1957), Bouaké (1958);
- surveys of Bongouanou (1955-56), the first agricultural sector (circles of Aboisso, Agboville, Grand Bassam, Lagunes except Abidjan) (1957-58), the eighth agricultural sector (circles of Korhogo and Odienné) (1958), the rest of the Ivory Coast (circles of Abengourou, Bondoukou, Bouaflé, Bouaké, Daloa, Dimbokro, Gagnoa, Grand Lahou, Katiola, Man, Sassandra, Séguéla, Tabou, Abidjan district) (1958). Unfortunately, the various operations were carried out in an uncoordinated manner.

During the years 1962-1963, the Ministry of Health carried out a count of the population village by village as part of a mass campaign for the eradication of smallpox [3].

During the same period, the Ministry of Finance, Economic Affairs and Plan launched a series of studies designed to provide base data for the regionalisation of economic development, each of these studies incorporating a demographic sample survey: Bouakka region (1962-1963), Korhogo region (1962-1963), Man region (1962-1963), South-East region (1963-64), Dalos region (1963-1964), Odienné region (1963-1964), Dabou region (1965) and the Abidjan suburban zone (1963-1966).

Using the findings of these surveys as well as of several urban censuses carried out after 1960 (Abengourou 1962, Grand Bassam and Korhogo 1963, Toumodi and Bougouanou 1964, Anyama and Dabout 1966, Bingerville 1967) the Ministry of the Plan arrived at an estimate of the population of the Ivory Coast in 1965, not only numerically but also by sex and age groups as well as providing the first reliable data on movements [4].

Finally, in 1975, the first general census of the population was carried out by the Statistical Board (Ministry of Economy and Finance), resulting in population figures which the previous compilations did not give a hint of.

Table 43
IVORY COAST - EVOLUTION OF THE POPULATION
FROM DIFFERENT SOURCES

YEAR	TOTAL	IVORIAN POPULATION	NON-IVORIAN POPULATION
1917 (1)	1 532 000	-	-
1936 (1)	1 931 000	-	-
1946 (1)	2 118 000	-	-
1956 (1)	2 661 000	-	-
1965 (2)	4 000 000	3 300 000	700 000
1975 (3)	6 709 600	5 230 580	1 479 020

Sources: (1) [2]
(2) [4]
(3) Census listings

II. CRITICAL STUDY OF SOURCES

Emphasis will be placed on those sources which are most widely used at present or in the process of being made available :

- the synthesis of Regional Studies 1962-1964
- the General Population Census of 1975
- the multiround demographic survey in the process of being completed

For the latter exercise, the appraisal will be relatively limited by the force of circumstance in so far as full results are not yet available.

1) Reference Population

De jure and de facto population

Given the importance of migration in the Ivory Coast, and the variety both in size, frequency and classification of these movements, the total population of a region or the country can vary considerably depending on whether the de jure or the de facto population is concerned. In the application and analysis of recent exercises, it is essentially the de jure population which is involved, but its definition varies from one survey to another.

For example, according to Louis Roussel, in the regional surveys of 1962-1965, the residence criterion applied in principle for foreign labourers was a stay of at least five years in the Ivory Coast. Obviously the foreign population is thus greatly minimised.

At the General Census of Population in 1975 every person who had stayed at the place of census for six months or more was considered to be a resident. Meanwhile as far as the multi-round demographic survey is concerned the qualification is residence of six months or the intention of staying for an equal or greater period in the locality.

The problem of foreigners

The number of foreigners resident in the Ivory Coast according to the various surveys and censuses is a function partly of the criteria adopted for the definition of the "residence status", and partly the interpretation of the definition of foreigners itself.

When a continuous stay of five years in the Ivory Coast is applied as the criterion of residence - as was the case in the regional surveys of 1962-1965 - there is considerable underestimation of the number of foreigners in comparison with the criterion of six months applied during later collection exercises. As many foreigners are employed as agricultural labourers, their length of stay in a given place is effectively linked to the farming calendar.

But even more delicate is the definition of "foreigners" which itself depends on the method of determining Ivory Coast nationality. In theory, any person whose father or mother is of Ivory Coast nationality themselves possess nationality. In practice it is not usually possible to verify the nationality of people surveyed, as the possession of national identity cards is not widely established, especially in rural areas. In general, personal declarations by surveyed populations have to be trusted and there is the near-certainty that numerous "foreigners" belonging to ethnic groups common to the Ivory Coast and neighbouring states, distinguished neither by dialect or way of life, declare themselves as Ivory Coast nationals.

We are therefore dealing with transfers which swell the declared Ivory Coast population. However it must be noted that these transfers are not haphazard: the age pyramid of the declared Ivory Coast population at the census of 1975 is in fact very regular, in particular as regards the sex ratio, while the age pyramid for the foreign population displays all the characteristics of a migrant population (high male ratio, spectacular peaks for the active age group, etc...). These transfers are therefore in fact foreigners to some extent settled in the Ivory Coast, living with all their family.

The transfers simply change the ratio of Ivory Coast nationals to foreigners without affecting the global population figure.

Nevertheless it appears that the total population is underestimated to the extent that many foreigners avoid censuses or surveys whether through fear (the foreigners leave the camp on the arrival of the survey interviewers), or because they are in an illegal situation (in the case of foreigners who have established farming camps in classified forests) or because they are away from their home when the survey passes the locality (in the case of Europeans) and are not taken into account.

It is to be regretted that the control survey which followed the 1975 census took place in very unfavourable circumstances and could not be utilised, thus rendering impossible the measurement of this underestimation. The comparison of figures obtained from different rounds of the demographic survey will probably allow some adjustments to be made.

2) Field

The geographical coverage of the various collection exercises has been described in the first chapter. The delineation of urban zones has followed the progress of urbanisation in time but is not always based on clearly defined criteria, making comparisons rather difficult. Just prior to the 1975 census, a list of localities comprising the "urban sector" was defined based in part on the size of towns and in part on the estimated percentage of the active non-agricultural population. The same list was used for the multiround demographic survey.

The fact that the same definition of "urban sector" was retained allows useful comparisons. However it must be noted that the official boundaries of a certain number of localities which have recently attained full commune status have been changed and therefore that for the purposes of analysis the figures must be corrected correspondingly.

A detailed analysis of the locality file in the process of being computerised (including not only demographic data but also on equipment and infrastructure) will probably allow different criteria of urbanisation to be tested and the elaboration of a more precise classification of the urban environment.

3) Factors likely to influence quality of collection

Motivation of surveyed population

In rural areas, the population is usually not reticent at surveys after the supervisor has suitably prepared them for the arrival of the interviewers. Refusals are rare and usually end up being overcome. However it appears that, as has already been pointed out, a certain number of foreigners avoid the survey.

In urban areas, by contrast, the difficulties are greater because the population often views the visit of the interviewer as a waste of time, even an infringement of privacy, and the rhythm of city life does not allow lengthy explanations of the aims of the survey. For this reason, it is essential to distribute hand-outs before the survey explaining its objectives and specifying a date. It should also be noted that the city dwellers are more sensitive than the villagers towards the attitude of the interviewer, the time of the visit, and in certain cases to the nature of the explanations capable of being offered.

Difficulties of surveying

These are naturally very numerous and it will suffice to list them briefly :

- Season : in the rainy season many areas are difficult to reach and there is a great temptation of the interviewer to avoid certain hamlets or camps;
- Habitat : in the towns it is extremely difficult to count the population of certain districts where the yards are overcrowded (figures of 100 per compound are not rare) or in shanty town areas;
- Village organisation : throughout the forest areas, and to a lesser extent in the savannah, the cultivators move incessantly between their village residence and the farming encampment which can obviously lead to omissions and double-counting;
- Dialect : sixty dialects are spoken in the Ivory Coast and it is not always possible to interview each inhabitant in his or her own language, while migratory movement produces intermingling so that villages where only one dialect is spoken are rare. Resorting to interpreters, often essential, very probably detracts from the quality of the information obtained.

Training of interviewers

The classroom training of interviewers, intensive as it is, cannot replace actual job experience and it is in fact only after a month in the field that interviewers can really be evaluated and the quality of collection considered truly satisfactory, assuming that super-

vision has been very thorough. It is therefore not so much the theoretical training of interviewers which poses a problem as practical experience and supervision. However the lack of finance generally makes it impossible to keep interviewers between two surveys and hence to constitute a body of experienced interviewers. It also often precludes a lengthy practical training course. Furthermore the shortage of interviewers does not allow strict quality control for large scale operations.

Sampling problems

These are in various degrees and include :

- rapid obsolescence of the sampling frames available, even faster where migratory movements are significant;
- the difficulty of establishing a viable sampling plan for all aspects of surveys with multiple objectives (e.g. the regional survey of 1962-1965) or a satisfactory one as far as migratory movements are concerned;
- the often doubtful extent to which sampling units are respected by the survey interviewers in the absence of very strict supervision;
- the ignorance of the population who find it hard to understand why one part of the village is surveyed and not another and above all why the whole family in the traditional sense is not surveyed.

III. CONCLUSIONS

1) Proposed evolution of the population size from 1920 to 1975

Table 44

IVORY COAST - PROPOSED EVOLUTION OF THE POPULATION SIZE FROM 1920 TO 1975

YEAR	POPULATION
1920	1 825 000
1930	2 075 000
1940	1 350 000
1945	2 525 000
1950	2 775 000
1955	3 050 000
1960	3 865 000
1965	4 500 000
1970	5 500 000
1975	6 702 000

Source: [1]

These estimates have been made by the Ministry of Planning (Board for Development Studies). The population figure for 1965 has been adjusted to take into account the underestimation of foreign population.

2) Proposed improvement

The multi-round demographic survey will fill enormous gaps in the knowledge of population movement. The latest data available effectively dates from the regional surveys of 1962-1965.

The implementation of a project for the improvement of Civil Registration would allow the evolution of birth-rate and mortality to be observed. This would however not be sufficient for the annual updating of the population figure given the importance of migration which accounts for nearly 30% of population growth. However, given the sensitivity of migratory movement to the economic and political situations in the countries of the region, it is extremely risky to hypothesise on the evaluation of the rate of migration. Counting at the frontier of international rail travellers on the Abidjan-Ouagadougou line would provide an excellent indication of movements between Upper Volta and the Ivory Coast and the National Institute of Statistics and Demography of Upper Volta has elaborated a project to accomplish this. But it will remain very difficult to evaluate the trend of migratory movements relating to the other neighbouring countries.

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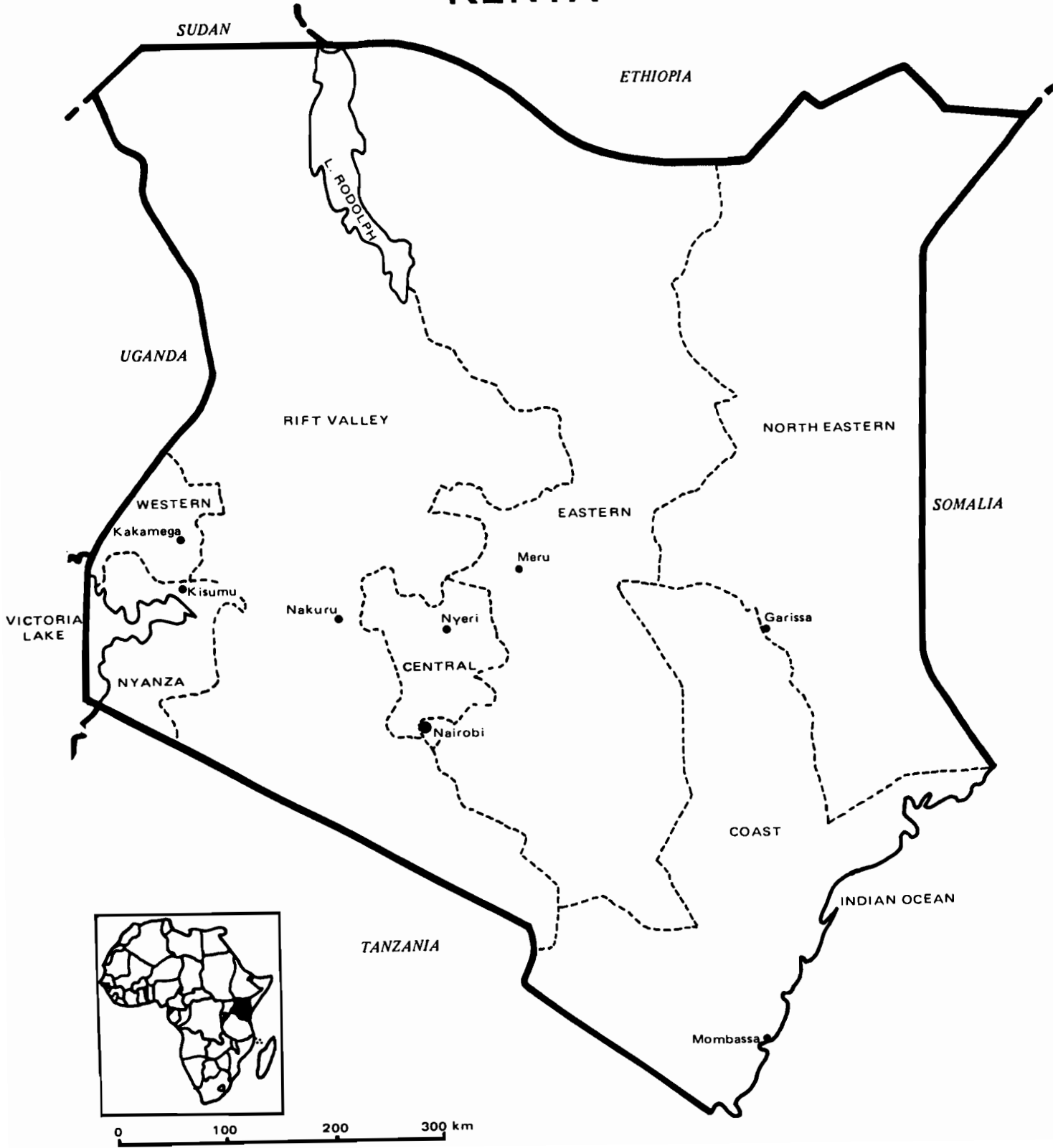
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KENYA

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KENYA



K E N Y A

The major sources of demographic data for Kenya are censuses, vital registration and sample surveys. The last two are conducted to help in studying the population characteristics in detail. Censuses thus form the major source of data for estimating population size. Although some surveys incorporating population data have been carried out in the country, they have been limited in their demographic analysis and therefore have been less useful in estimation of the country's population size.

1. Pre-Second World War estimates

Estimates of Kenya's population size exist as far back as the 1870s with the coming of the explorers. However, the estimates before 1948 (when the first national colonial census was taken) were mere guesses based on observations and impressions of the administrators.

Kenya's first official population estimate was made in 1897 by the resident Governor, Sir Arthur Hardinge, who put it at 2.5 million. Between 1902 and the outbreak of the First World War, the population of Kenya was variously quoted as either 4 million or 3 million and between the wars the official estimates of the African population showed steady increase from 2 549 300 in 1925 to 3 413 371 in 1931. The means by which these estimates were constructed were obscure but were undoubtedly based principally on the Hut and Poll Tax records which were defective in two ways : no account was taken of the male tax defaulters from the registers and secondly the number of dependents per adult male were based on little more than guesswork.

All the censuses taken in 1911, 1921, 1926 and 1931 were confined to non-Africans. However the 1931 census was extended to include the African population of Nairobi and Mombasa and as many natives as possible residing on non-native premises and farms. The total number enumerated was 70 448 or 2.4% of the estimated total African population of Kenya.

In all, the available evidence points to a very obscure and confusing demographic posture of the country before the first census in 1948. It is not possible therefore to give a precise estimate of the population before this date.

2. The 1948 Census

A 1945 proposal to hold a complete census of the East African territories was effected in 1948 when the first national census covering the whole population was carried out in all three countries.

The Kenyan 1948 census however had its own problems. For example, it was conducted in three stages : the non-African population was enumerated in February and that of the African population in August. The last stage involved the Northern Province including Samburu district where only limited samples of the population were undertaken. These factors cast much doubt on the population estimates as derived from the census. The reported figure of 5.4 million for the whole country could as well have been an underestimate as was proved later by the 1962 census.

The errors were attributed to omission of areas, double counting of population and mistakes due to inability of enumerators to understand their work. Added to this was the problem of the lack of enough enumerators and limited communications especially in the rural areas. The nomadic nature of the population further complicated the situation.

However, the 1948 census remains a historic landmark in the census history of Kenya. Of the reported 5 407 599 total population 5 252 753 were classified as Africans, and 154 846 as non-Africans.

3. Inter-censal estimates 1948-1962

During the 1950s, annual estimates of the African population of Kenya were based on an assumed rate of growth of 1.5% per annum. In 1961 estimates were revised in the light of both the results of censuses of Tanzania and Uganda and of a re-examination of the fertility and mortality data obtained in Kenya in 1948. The revised rate of growth of 2.25% per annum gave a total estimate of 7 155 000 compared to the previous one of 6 453 000 given by the 1.5% rate of growth.

The low population totals were attributed to two factors, partly to the low estimation of the 1948 census but mainly to the under-estimation of the rate of growth which was assumed to be in the region of 2.8% instead of 2.25%. The 1962 census figure of 8 365 942 showed indeed that these two estimates were under-estimated by 1.2 million or 30%.

4. The 1962 Census

The 1948 census was reckoned as a major feat taking into account the problems encountered in recruiting and training the enumerators. The later censuses were therefore staggered. These problems also cropped up in the course of the second national census which was held in August 1962. It gave a total population of 8 636 263 million including 2 629 persons in transit. Ethnic breakdown indicated a

total African population of 8 365 942; 176 613 Asians, 55 759 Europeans and 34 048 Arabs. 3 901 persons were classified as others. Compared to the 1948 results, the population had nearly doubled. The growth rate for the inter-censal period 1948-1962 was estimated at 3.2% from census data, which was higher than had been assumed.

Like the 1948 census, the 1962 census was conducted in stages thus allowing the infiltration of the same errors of the last census. The Northern Province census was conducted on a de jure basis. Furthermore, the estimation of African population of Turkana, Samburu, Marsabit and Isiolo districts was based on sample counts rather than complete enumeration.

These factors reduced the reliability of the data for the Northern Province and therefore those of the whole country. Also it would seem the number of some of the tribes in the North Eastern parts of the country were exaggerated in this census.

Other problems also persisted during the census. It is documented that some districts experienced extraordinary rains during the census night and most roads were rendered impassable. Politically, it is argued, the timing of the census was wrong. Kenya's independence was round the corner. Many administrative changes were taking place with the resignation of many colonial administrators. These changes, as was later realised, made the verification of some of the results from certain districts very difficult as the new personnel were in no position to account for the various mistakes.

One other serious problem revealed by the 1962 census was the incompetence and dishonesty on the part of some enumerators, who entered wrong and sometimes fictitious information on the schedules. Re-enumeration in certain areas had to be carried out to verify the results.

Despite these problems, the 1962 census was considered to be one of the most thorough and successful population censuses hitherto held in East Africa.

5. The 1969 Census

The first post-independence census planned and administered by the Kenyan government was held on the night of 24th-25th August 1969. Results from this census returned a total population of 10 942 705 of which 10 753 202 (98.25%) were Africans. A 3.3% inter-censal rate of growth was also calculated, all indicating a rapid increase of population.

The 1969 census differs from the two previous ones in that for the first time, an attempt was made to enumerate the population on a de facto basis throughout the country. A sample census of 10% of the rural population was also simultaneously carried out in order to secure more detailed data on certain variables, unlike in 1962 when it was taken weeks later.

The 1969 census was also the first one in which the enumeration areas were clearly delineated by maps. Although this census could be said to have been national in scope and coverage, the issue of the Northern Province remained. The nomadic nature of the population presented the problem of underestimation. Another factor influencing the 1969 results was the General Elections held countrywide two months after the census.

Apart from these few problems, the 1969 census was well planned, receiving maximum publicity and the results were not in much dispute with the projected figures. The 1969 figures have since been used for planning in the country.

The fourth round of census is expected to be conducted throughout the country on the night of 24th-25th August 1979. According to the available projections by the Central Bureau of Statistics and the Population Institute at the University of Nairobi, the population is expected to be in excess of 15 million (15 427 000) by this time. The estimations for the other years made by the Central Bureau of Statistics are as follows :

Table 45

KENYA - EVOLUTION OF THE POPULATION FROM 1970 TO 1980

DATE	BASED ON A SERIES*	BASED ON B SERIES*
1970	11 247 000	
1972	12 091 000	
1974	12 935 000	
1975	13 413 000	
1976	13 853 000	13 842 000
1977	-	14 314 000
1978	14 348 000	14 806 000
1979	-	15 313 000
1980	-	15 877 000

* A - SERIES - Assumes decline in age-specific fertility rates leading to a fall in total fertility rate from 7.6 in 1969 to 6.9 in 1980

* B - Assumes no change in age-specific fertility rates through 1980.

The United Nations data sheet 1978 also provides population estimates for Kenya, 14.8 million, which is in close agreement with the above projections based on the B-Series.

6) Sample Surveys

Post-census surveys have been used to a limited extent in the estimation of population size in the country. Of the three national censuses so far held in the country, post-census surveys were carried out only in 1962 and 1969. These surveys were conducted to obtain more detailed information on general population characteristics i.e. mortality and fertility. It should however be noted that during the 1962 census, sample surveys were conducted in some parts of the country to verify the results.

Apart from the above surveys, the Central Bureau of Statistics in the Ministry of Economic Planning has since 1972 embarked on a series of National Demographic Sample Surveys in order to be able to obtain information on general population characteristics, fertility, mortality and migration, which would be comparable to those obtained in the census of 1969.

So far four of these surveys have been conducted. The results from these surveys still give enough evidence of the country's high fertility with a rising total fertility of 8.0 (1978) and rate of growth of 3.5% (1978). These indices point to an ever increasing total population, a point to be confirmed by the results of the forthcoming national census.

Though not so useful, in the estimation of population size, these surveys nevertheless provide very useful demographic data.

Conclusion

We have pointed out that prior to the 1948 national census, the country's population estimates were made by various administrators either from Poll Tax lists or from observed number of huts. We have also shown that these population estimates were in most, if not in all cases, underestimates of the country's population size as the census later proved.

We have further indicated that of the three censuses so far held in the country, i.e. 1948, 1962 and 1969, only the last one gave estimates which agreed with other sources available at the time. Analysis of 1948 and 1962 census results proved them to be underestimates. This was attributed to various factors, among which, lack of enough enumerators, natural hazards, poor communications, dishonesty on the part of the few enumerators and the underestimation of both the early censuses and the inter-censal growth rates. However, indications from the results of these censuses are that Kenya's population is growing very rapidly. Even most of the work on Kenya's population by Professor Ominde, Director of the Population Studies and Research Institute at the University of Nairobi, tends to confirm this threatening rate of population growth, said to be one of the highest in the world. With a present rate of growth of more than 3.5%, the country's population is expected to be more than 15 million in 1979, the time of the next census.

Vital Registration and Sample Surveys are still in experimental stage as sources of data for population estimation in the country. The former is urban-based and is yet to attain national coverage. The latter is limited in coverage to certain areas only. However, with increased government involvement, they will form very useful sources of demographic data.

Other useful non-conventional sources of data that could be useful in updating the population estimates would be the electoral lists, voter's cards and the identify cards' registers that will be available after this year's General Elections. But above all, the pending 4th round of National Census will be very useful in updating the data. We may also add that, with the establishment of the Population Institute at the University of Nairobi headed by Professor Ominde, more detailed information not only on Kenya's population size but also on its growth and distribution will be available. Emphasis will be on the major determinants of population namely : fertility, mortality and migration. With such information available, proper planning of the economy will be carried out to sustain the rapidly increasing population.

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LIBERIA

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AUGUST 1979



L I B E R I A

I. DATA SOURCES1) Introduction

Liberia, a small West African State, with an area of about 38 000 square miles was declared an Independent Sovereign State in 1847, 26 years after its founding. The founders of this State were the freed slaves of African origin who were re-patriated from the United States of America. Since that time this group, including those from Central Africa who were en route to America but were later set free and placed on the shores of Liberia, continued to handle the affairs of the government until the Unification and Integration Policy was instituted during the reign of the late President William V.S. Tubman, 1945-1971, which brought more aborigines into the ruling machinery of the country.

The country is located within the fertility zone of West Africa bordered by the Republic of Sierra Leone in the West, Ivory Coast in the East, the Republic of Guinea in the North and the Atlantic Ocean in the South. The birth rate of the zone is estimated to be between 40-50 live births per 1 000 population, while the death rate ranges between 17-27 per 1 000 [10].

Liberia, like many other developing countries, lacks long-standing statistical records particularly on population, size and structure. However, prior to the first National Census of Population in 1962, limited head counts were carried out in several major towns and cities between 1956 and 1958. These included the 1956 census of the capital, Monrovia, which gave an estimated population of 41 391, and that in 1958 of Greenville, the Administrative Headquarters of Sinoe County, which gave an estimated population of 3 628 persons. The prime objective of these limited censuses was to acquaint the public with the idea of census taking and to train prospective census personnel. Besides knowing the total counts, no further analysis and publication was made of the information gathered. Therefore, no historical comparison can be made of the information with subsequent population statistics.

Long before the limited head counts of cities and towns, Liberia's population was assumed to be 2.5 million, figure which was used by historians, politicians and researchers up to the time of the first National Census in 1962. The 1962 census count put the total population at the much lower figure of 1.02 million. Eight years later the population was estimated to be around 1.5 million. The esti-

mate was based on the Population Growth Sample Survey which was conducted between 1969 and 1971. Following the survey came the second National Census of Population and the first Census of Housing. This was in 1974, 12 years after the first National Census. The total population was put at 1.5 million, the same total estimated for 1970 from the Survey. The Survey estimate was considered to be on the high side, arising from the sampling procedure.

2) 1962 Population Census

The first truly scientific source of demographic data was the first national census of population in 1962. This was the first major undertaking of the newly established Bureau of Statistics and Economic Research, for that matter the first major commitment of the Government of Liberia to a statistical development programme as an indispensable basis for sound socio-economic development planning. The result of that census continued to serve as a benchmark for subsequent population studies of Liberia.

The 1962 Population Census was conducted in accordance with the principles and recommendations laid down by the United Nations including all six essential features of (a) full government sponsorship, (b) universality, (c) simultaneity, (d) defined territory, (e) individual enumeration and (f) compilation and publication of data. Modern census techniques were applied in all stages of the programme with good results.

The enumeration, which was conducted in April 1962, was 100 percent enumeration with a household questionnaire containing 16 items. These covered almost all the basic items (with a few adaptations to local conditions) recommended by the United Nations.

3) Population Growth Survey

a) Presentation

In 1969 the Government of Liberia, through the Ministry of Planning and Economic Affairs, initiated the Liberian Population Growth Survey, with technical and financial assistance from the United Nations Agency for International Development. The prime objectives were to provide the Government of Liberia with more accurate and current estimates of births and deaths. A secondary, but equally important goal was to present yearly data on fertility and mortality patterns, migration, age and sex distribution, marital status, literacy and school attendance. The results of this continuous survey were released in several annual publications which were widely distributed. The first and second sets of series were released for the mid-year population 1970 and 1971. The series included: (a) Series P 1 and 2 (population patterns), (b) Series N 1 and 2 (patterns of natality), (c) Series D 1 and 2 (patterns of mortality), (d) Series M 1 and 2 (patterns of migration) and (e) Series S 1 and 2 (demographic patterns in Liberia). The survey was suspended in May 1973 in order to make room for the National Population and Housing Census which was scheduled for February 1974.

b) General Survey Design

The Liberian population growth survey was based on a statistical sampling technique where the sample unit is a single household. Sample estimates were generated for: (a) the country as a whole (b) rural areas and (c) urban areas. The sample consisted of 100 randomly selected villages located in 50 clans. Every household in a sample village was included in the enumeration. In the urban areas, 100 sample "blocks" made up of approximately 200 persons each were selected. Every household within these blocks was enumerated. A dual method was used to collect the data. The first is an agent who makes regular monthly visits to each household in his assigned area and reports the demographic changes which have occurred during the past months. The second source is staff supervisor who independently calls on each of these same households every six months. The two reports were compared and all the differences were verified. All estimates were computed using the Chadraskar-Deming formula :

$$N = C + N1 + N2 \frac{(N1) \times (N2)}{C}$$

c) Coverage

The survey included approximately 70 000 people or roughly 5 percent of the 1968 current estimated population of Liberia. Included in the survey were persons residing in single or multiple dwelling units such as huts, houses, apartments and non-detached houses. Persons who normally reside in these units but who were temporarily absent were also included as household members. Excluded were hospital patients, military and police personnel in barracks, inmates in lodging houses, schools, and other institutions, and non-Liberians in concession compounds, missions, and embassies.

4) 1974 Census of Population and Housing

Under the United Nations African Population Census Programme, Liberia was fortunate in obtaining technical and financial assistance from the United Nations' Fund for Population Activities in order to conduct the census.

The experience gained during the 1962 census coupled with that of the demographic survey were utilised to a great extent in the planning and execution of the second population census of Liberia which was conducted in February 1974. The objectives of the 1974 census remained virtually the same as in 1962. However, the institutional framework for implementing the census mandate was somewhat more developed than in 1962.

The major purposes of the 1974 Census of Population and Housing were stated as follows:

- 1) to determine the current size and distribution of the population
- 2) to document the present status of the population on the basis of selected socio-economic indicators
- 3) to give an overview of living and housing conditions in the country
- 4) to indicate any demographic changes that have occurred since the 1962 census
- 5) to evaluate any qualitative socio-economic changes in the population that have occurred since the 1962 census.

Since one of the major purposes of the 1974 Census was to compare the results with the 1962 Census, the census was conducted on a de jure basis, the primary enumeration unit being the household. The questionnaire, definitions and concepts were essentially the same as in the 1962 census, with the addition of questions on fertility, mortality and migration.

The census also included questions on housing and living conditions as proposed by the Ministry of Housing which in effect made the 1974 exercise a census of population and housing.

Because of the length of the questionnaire (26 items) a systematic sampling technique was employed for the collection of information on housing. While all the basic questions were asked of all households, only one household in five was required to answer questions on housing.

Items of Inquiry in the 1974 Census of Population and Housing

Because of the sampling scheme introduced for the housing questions, two forms were adopted; a short form which included items on population to be completed for four out of every five households, and a long form which included both questions on population and housing was completed for one of every five households.

Questions on population included : (1) name, (2) relationship with the head of household, (3) sex, (4) completed age, (5) marital status, (6) county of birth, or origin of birth, if outside Liberia, (7) length of residence, (8) citizenship, (9) tribal affiliation (10) literacy status, (11) school attendance, (12) highest grade completed in school, (13) number of children ever born, (14) children born in past 12 months, (15) economic activity, (16) usual occupation, (17) economic sector, and (18) work status.

Questions on literacy, school attendance and highest grade completed in school were only asked of all persons 5 years of age and over, while questions on fertility were asked of all women 10 years of age and over, and that of economic activity was asked of all persons 10 years of age and over.

Questions on housing included: (1) type of housing unit, (2) tenure of housing unit (owned or rented), (3) construction materials of outer walls, (4) size of structure in terms of rooms and number of occupants, (5) modern amenities, (6) death in housing unit during the past 12 months, (7) availability of radio in housing unit, and (8) the monthly income of the head of household.

Questions concerning structure size and number of occupants were framed to indicate the number of households in the dwelling unit, the number of rooms in the particular household, the number of persons in the same household and persons in the household under 14 years old. "Modern amenities" comprise inside piped water, electricity and inside flush toilet.

5. Other Censuses and Surveys

a) On-going Demographic Survey

In pursuance of the recommendations of the African Census Programme of the United Nations Economic Commission for Africa, and fulfilling the urgent governmental needs of development planning, a proposal for technical and financial assistance for a continuous demographic survey at national level was submitted to the United Nations in 1974. The proposal was approved but the survey only became operational in mid-1977 after the appointment of the Survey Director.

The first two rounds of the survey which were completed in early 1979 are now being processed and should be available before the end of the year. The basic items of inquiry in the two rounds included, among others, births, deaths, in and out migration, and the characteristics of the household composition - relationship, sex, age, marital status, tribal affiliation, religion, literacy, occupation, industry, disability and work status.

b) Agriculture

Between the years of 1960 and 1975 several agricultural surveys and a census were carried out. Most of the surveys, however, were intended to collect information useful in establishing data collection methods. It was in 1971 that the first National Census of Agriculture was conducted. The activities of this census extended through 1974. The main objective of this census was to take an inventory of the agricultural characteristics of the country. Data on crops and livestock production in Liberia were however observed to be extremely limited.

A rice survey was carried out in 1975 to assess the level of production of this staple crop, for which self-sufficiency was a goal. The survey showed a year-to-year fluctuation of production levels. For example, while the total production of rice for 1974 was estimated at about 250 000 metric tons, this figure went down by about 20 000 metric tons in 1975, the reason being heavy rain fall which prevented more land clearing. The survey however indicated a trend of steady increase in production from 1960 to 1967, and a more rapid rate of increase in production from 1967 to 1975.

c) Household expenditure survey

In 1976, the Ministry of Planning and Economic Affairs carried out a household expenditure survey in both urban and selected rural areas of Liberia to provide information concerning the pattern of household expenditure and other socio-economic characteristics of the Liberian population. Perhaps the major information was the provision of weights for the revision of the consumer price index and the calculation of consumer price indices for the various county towns.

The data collection phase of this survey terminated on June 30, 1978 and processing of returns is under way.

II. CRITICAL STUDY OF THE 1962 AND 1974 CENSUSES

Liberia is no exception to the rule that attempts to improve data quality are made in successive censuses. The 1962 census being the first national census confined itself to the collection of data on population characteristics. As well as improving population data quality, the 1974 census expanded its scope by introducing a new questionnaire on housing on a 20 percent sample of households.

The 1962 census of population was basically a count of persons. A standard set of questions was put to every household after preliminary trials of methods and procedures. A similar procedure was followed in the 1974 Census of Population and Housing. The two censuses were conducted on a de jure basis, except that individuals of no fixed address were enumerated where they happened to be on census day. The age and sex distribution of the two censuses is given below in Table 46 indicating population change over the years.

1) Foreigners

For classification, the question of citizenship in the 1962 census was based on an affirmative answer to the question: "Is this person a Citizen of Liberia?" No specific definition of citizenship was provided. However, the 1974 census treated the question on citizenship rather more elaborately: citizenship in the 1974 census referred to the current status and not to the status at the time of the person's birth. A person born in another country who became a naturalised

Table 46
LIBERIA - POPULATION BY AGE GROUP AND SEX :
1962 AND 1974 CENSUSES

AGE GROUP	1962 CENSUS			1974 CENSUS		
	Both Sexes	Male	Female	Both Sexes	Male	Female
All Ages	1 016 443	503 588	512 855	1 503 368	759 109	744 259
Percentage	100.0	49.5	50.5	100.0	50.0	49.5
Under 5 Years	165 382	81 625	83 757	227 725	115 252	112 473
5 - 9 "	133 762	68 809	64 927	223 927	114 597	109 330
10 - 14 "	78 595	43 483	35 112	163 338	87 537	75 801
15 - 19 "	83 297	39 248	44 049	159 046	75 571	83 475
20 - 24 "	84 358	34 757	49 601	121 519	54 473	67 046
25 - 29 "	95 292	40 220	55 072	120 655	53 717	66 938
30 - 34 "	81 991	36 750	45 241	140 746	47 107	57 639
35 - 39 "	69 438	34 459	34 979	93 290	47 344	45 946
40 - 44 "	58 611	31 367	27 244	66 973	36 109	30 864
45 - 49 "	44 262	24 715	19 547	57 034	31 689	25 345
50 - 54 "	34 293	19 746	14 547	46 211	26 076	20 135
55 - 59 "	22 777	13 296	9 481	29 517	17 775	11 742
60 - 64 "	23 881	13 130	10 751	33 835	19 118	14 717
65 - 69 "	16 106	8 808	7 298	21 107	12 101	9 006
70 - 74 "	9 321	4 963	4 358	14 394	8 855	5 539
75 years and over	15 077	8 212	6 865	20 051	11 788	8 263

citizen of Liberia was recorded as a Liberian. A person born in another country or born to an alien family and having lived in Liberia most of his or her life but not having obtained Liberian citizenship was recorded as non-Liberian. In both censuses, citizens living abroad permanently were excluded. However, Government officials working abroad were included in the total population. The number of foreigners living in Liberia was quite insignificant relative to the total population: 2.5 percent in 1962 and 3.7 percent in 1974.

2) Scope

The two censuses were national for they covered all places of abode in the territorial limit of Liberia. Nomads are non-existent in Liberia. The predominantly rural population is urbanising gradually. In 1962 about 80 percent of the population lived in rural areas and 20 percent in urban areas.

The definition of rural and urban remained the same in both censuses. A rural locality is defined as one having fewer than 2 000 inhabitants, unless it possesses amenities such as schools, hospitals, electricity and water supplies: in this case it is classified as urban, as are all localities with a population of 2 000 or more. In 1974 the rural population was estimated at 71 percent and the urban population 29 percent. The rural and urban population rates for the years 1962, 1971 and 1974 are indicated below.

Table 47

LIBERIA - PERCENT DISTRIBUTION OF THE POPULATION BY AREAS
1962, 1971, 1974

Area of residence	1962	1971 *	1974
TOTAL	100	100	100
Rural	80.2	72.4	70.9
Urban	19.8	27.6	29.1

*Survey estimate

3) Quality of data

In all censuses the problem of motivation of respondents is a difficult one, particularly in a society where the illiteracy rate is high. Liberia's illiteracy rate in 1962 was about 91 percent of the population aged 10 years and over. This situation had considerably improved by 1974, but 79 percent still remained illiterate. In both censuses and other national surveys, vigorous publicity campaigns have always been instituted long before the time of interview. In the 1974 census councils were established at all levels of administration for the purpose of educating the population about the census and appealing to them to cooperate with the census officers.

The topography of the country and the remoteness of some areas have always affected the collection of data. This, coupled with the lack of proper geographic planning, has always rendered impossible the use of the census enumeration areas as frames for survey purposes.

4) Control surveys

In both the 1962 and 1974 censuses some evaluation surveys were carried out to determine the level of coverage. In 1962 the results of the post-enumeration survey, which was conducted five months after the census and employing the tradition method of PES indicated that the net error was relatively insignificant (less than 5 percent). However, the 1974 post enumeration survey, conducted immediately after the census (less than one month) and employing a new method based on the dual records system, showed that the Liberian census was underestimated by eleven percent at the national level.

III. CONCLUSIONS

In recent years, the need for reliable population statistics has become paramount in many developing countries as a basic tool in the planning process. It is in this light that the collection and analysis of population statistics on a scientific basis was initiated in Liberia in 1962. At that time the total population of Liberia was given as 1 016 443, with 503 588 males and 512 855 females.

Between 1969 and 1971 a growth survey was instituted as an attempt to estimate the growth of the population and to provide needed population information for planning purposes. During this period the population was estimated to be 1.4 to 1.6 million with a growth rate between 2.9 and 3.5 percent per annum.

The population of Liberia as recorded in the 1974 population and housing census was 1.5 million. Comparing this result with the 1962 census count and the findings of the 1969-1971 population growth estimates, the growth rate stood at around 3.3 percent as of 1974. This would mean that a population estimate for February 1, 1975 would be around 1.55 million. The current demographic survey project should permit a continuous updating of population characteristics. However, in the absence of the results, and knowing that population characteristics do not change significantly over a short period, it can be said that the fertility rate is still on the rise with a crude birth rate of 50 live births per 1 000 population, that the average age continues to fall with 41 percent of the total population below the age of 15, and that the dependency ratio is around 80 per 100 potential workers.

There is however an urgent need to improve the collection and analysis of population data in Liberia. This need was re-echoed in the recommendations adopted at the close of the seminar on the Results of the 1974 Population and Housing Census held on September 7 - 9, 1977. It was stated among other things that the continuity of the experience of the census work should be maintained, and that all census activities should be looked into and organised in an integrated manner and not in isolation.

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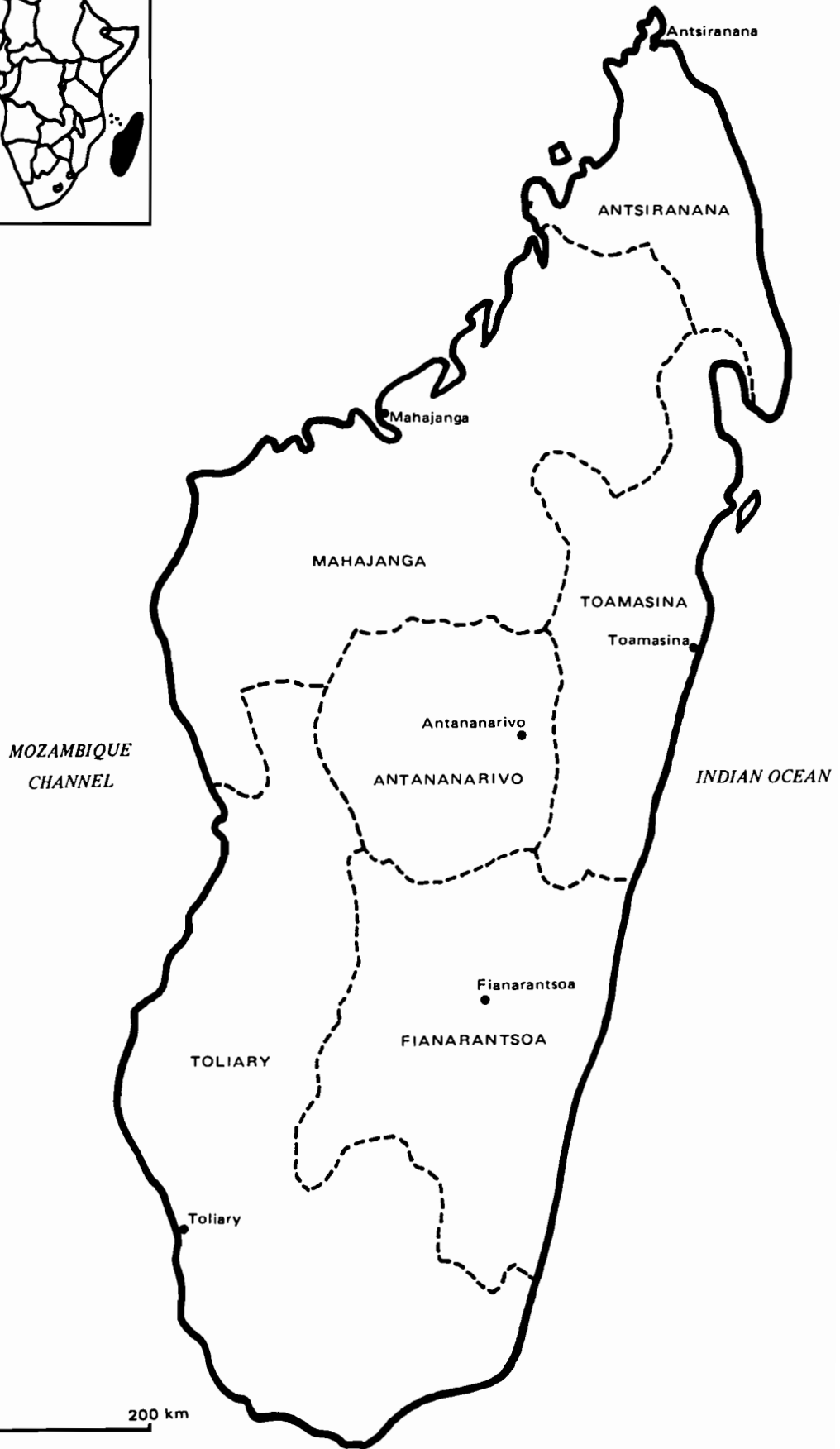
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MADAGASCAR

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MADAGASCAR



M A D A G A S C A R

I. DESCRIPTION OF SOURCES OF DATA AND POPULATION ESTIMATES

Four major categories of sources of data relating to estimates of the population of Madagascar can be identified :

- old estimates, before the colonisation of the Main Island
- administrative sources
- compilation of partial data
- statistical collection

These sources differ in their objectives and in their methods of observation or evaluation and therefore provide results of varying value to the demographer. However, it must be emphasised that each of these sources has prevailed during quite distinct periods in the history of the Malagasy people.

1) Pre-colonial estimates

The Merina monarchy certainly carried out enumeration operations on the population of the kingdom well before colonisation. Being military in character, the results were treated as "State secrets" and disappeared when annexation of the island took place in 1896. No numerical data on the population were ever published by the Merinian oligarchy.

Nevertheless, quite disparate estimates have been advanced by some of the travellers who came to explore the island during this period.

a) Aims and methods of estimation

The first estimates were made in the context of the conversion to christianity of the African people and the establishment of trading posts (1500-1850); in 1650 the Abbé Nacquart estimated the Malagasy population at 400 000, and six years later, in 1656, Etienne de Flacourt proposed the figure of 800 000 inhabitants. In fact, Etienne de Flacourt was the successor of Jacques Prony, who founded at Fort-Dauphin the first trading post of the French East Indies Company (1643).

The development of slavery during this period in any case necessitated some knowledge, however vague, of the size of the local population.

Later on, the imperialist system of exploitation and war strategy of colonial annexation were to find part of their logic in the demographic evaluation of colonies.

In this pre-colonial period, the suggestion that foreign travellers used exhaustive methods of enumeration appears to be totally inconceivable. Therefore, it is proposed that the various estimates produced by the European travellers were the product of their own imagination or at least the results of some "magical" adjustments. Among the formulae used in these adjustments would be without doubt spatial extrapolation (the geographic density method) or certain criteria based on demographic structure (ratio of rural/urban population, structure by major age groups, number of tribes, etc...)

Consequently, Jean Laborde, primarily familiar with relatively densely populated zones of Madagascar (central regions, notably Tananarive), considered the population to be in the order of 8 million in 1870, a figure grossly overestimated compared to reality.

Finally, sight must not be lost of the role these visiting "demographers" wished their figures to play, to cultivate an attitude on the part of their readers (the imperialist State, the Papacy, the Administrative Council of a colonial company...) and encourage political, economic or social intervention in the colony. It can even be suggested that this role was a determining factor in the estimation of population figures.

b) The various estimates

Table 48

MADAGASCAR - VARIOUS POPULATION ESTIMATES
IN THE PRE-COLONIAL PERIOD ACCORDING TO EUROPEAN TRAVELLERS
(units - thousands of inhabitants)

DATE	EVALUATIONS	SOURCE
1650	400	Abbé Nacquart
1656	800	Etienne de Flacourt
1665	from 1 211 to 1 600	Soucher de Rennefort
1741	1 600	De la Martinière
1768	4 000	Abbé Rochon
1776	from 250 to 300	Benyowsky
1777	1 500	Baron de Benyowski
1792	from 4 000 to 5 000	Kerguelen
1818	2 000	Silvain Roux
1828	4 450	Prince Coroller
1829	2 000	Capitaine Jourdain
1839	2 000	Bona Christave
1859	3 000	Barbié du Bocage
1868	5 300	Capitaine S. Pasfield Olivier
1870	8 000	Jean Laborde
1874	2 500	Rev. Joseph Mullins
1875	4 500	Von. L. Jedins
1879	from 3 500 to 4 000	Rev. Sibree
1881	5 000	Rev. J.G. Baker
1889	3 000	Grandidier et Elisee Reclus
1890	7 000	Dr. Catat

After the 1896 annexation, evaluations continued to the end of the 19th Century :

1897	6 000	W. Gibbs, American Consul
1898	from 4 000 to 5 000	Père J.B. Piolet
1900	2 260	Fournier

It is emphasised that these estimates are far from being consistent. Nevertheless, Fournier without doubt came closest to the true figure, for the Census of 1900 gave a figure of 2 242 000 for the Malagasy population.

2) Administrative Sources

Despite being endowed with several sources of data, Madagascar belongs to that group of countries with "incomplete statistics" in the field of demography. The permanent or periodic sources are administrative in character, and are more often than not inaccurate.

They are three in number :

- the Sub-Prefecture Reports ("Monographies de Sous-Préfectures")
- Civil Registration
- International disembarkation and embarkation cards

The collection of data is the responsibility of the administration. The publication of results is ensured by the National Institute of Statistics and Economic Research (I.N.S.R.E.) in consultation with the Ministers concerned. This Institute carries out processing of the data (in the case of Civil Registration and international disembarkation and embarkation cards) or re-arrangement of data with a view to its presentation in tabular form (sub-prefecture reports).

a) The "Sub-Prefectures Reports"

On 6 November 1896, by order of General Gallieni, the first population census in Madagascar took place, in compliance with a law decreed by Queen Ranavalona III. This attempt ended in failure, and it was not until 1900 that the operation resulted in the enumeration of 2 242 000 Malagasies (at 1 January 1901). Since then, annual administrative censuses have been carried out on the population of Madagascar, the results of which, at the sub-prefecture level, are published in the "monographies".

* Aims and methods of collection

The collection procedure is intimately linked with the organisation of the Malagasy territorial administration. It should be borne in mind that a reform of the administrative sub-divisions was carried out in 1976.

Before the reorganisation, the village was the basic administrative unit. A group of villages delimited geographically constituted a commune.

According to the size of the population and the state of its socio-economic infrastructure, a commune was described as either "rural" or "urban". In fact, the canton generally coincided with the geographical delimitation of the commune; the difference lay in the matter of jurisdiction. The Chief of the Canton was designated by the central authorities to run the Canton, whereas the commune was represented by a Council and Mayor chosen by municipal election.

The sub-prefecture was a grouping of several cantons. It was administered by a sub-prefectural bureau, having the Sub-Prefect as its Head. At a higher level was the Prefecture incorporating several sub-prefectures.

Finally, the Province, made up of a number of Prefectures, was the main geographical unit in the administrative sub-division of Madagascar.

This former territorial sub-division manifested itself as follows :

- 6 provinces
- 18 prefectures
- 92 sub-prefectures
- 776 cantons
- 779 communes of which 46 were urban communes
- 25 231 villages

At the outset, the Sub-Prefecture Reports had been established principally to aid the control of disorder by placing the inhabitants under the permanent control of the centralised colonial state. While maintaining this disciplinary aspect, the Sub-Prefecture Reports usually served a double purpose in the neo-colonial period :

- budgetary forecasts and control of tax returns
- the exploitation of socio-economic data with a view to better administrative management: reports on the activities of various administrative services, statistics on the evolution of demographic data, the production of principal agricultural commodities, calculations of the damage caused by cyclones or catastrophes...

The Sub-Prefecture Reports are compiled on an annual basis. The central responsibility for the work lies with the Ministry of the Interior and more specifically with the Service for General and Territorial Affairs.

Blank tables are issued by this Service to the Sub-Prefects, the latter delegate the gathering of the data necessary for completing these tables to the cantonal heads.

The collection of data is not regulated by precise instructions as to its execution, and differs according to the environment, urban and rural.

In urban environments, the information is drawn from enumeration questionnaires on a direct contribution basis. These questionnaires include individual data on the members of households about their civil registration status (sex, date of birth, marital status) and socio-economic characteristics (race, nationality, educational background, occupational group, profession...). A certain period of time is fixed for the head of household to return the questionnaire, duly completed, to the District Head. The latter sends the results of the partially processed questionnaires to the Deputy Mayor of the district for the completion of the blank tables.

In rural areas, the village Head keeps a register including a roll of all the inhabitants under his jurisdiction. Personal information, entered on one line, and grouped by household, includes notably: name and forenames, age, sex, race, marital status and occupation.

In principle, the village Head up-dates his register annually. In order to do this, he deletes from the list the dead and emigrants, and adds the newborn and immigrants.

A village is usually made of several hamlets. In fact it is the hamlet Chiefs who provide the village Head with the information relating to the inhabitants under their jurisdiction. The enumeration register of the village is therefore a compilation of personal data brought in by the hamlet Chiefs. Thus in urban environments, it is the head of household himself who plays the role of interviewer, while in rural areas, it is the hamlet chief who more or less fills the part. Nevertheless, in neither of the two cases is a systematic interview of members of the household carried out.

* Processing of Data

The Sub-Prefecture Report contains information relating to the sub-prefecture with a breakdown by canton and commune. The processing of personal data is done at district level in urban environments and at village level in rural areas. Processing is done by the District Head or Village Head.

The results obtained in this way are sent to the Deputy Mayor or to the cantonal head who, after having checked, verified or corrected the statistics, sends them on to the sub-prefectural office.

The Sub-Prefect, assisted by his deputies and secretaries gathers the data, presents them in tabular format, and comments on them in a report: this constitutes the Sub-Prefecture Report. Two copies of the latter are produced, of which one is passed to the Minister of the Interior who endorses the documents.

* Processing and publication of the results at the national level

The copies of the Report, endorsed by the Minister of the Interior, are sent to the INSRE for the purposes of analysis and publication of the results. The INSRE, and more specifically, the Demographic Section, groups together the data at prefectural, provincial and national levels.

Thus, in the brochure entitled: "Population of Madagascar at January 1" INSRE publishes among other things the results of the analysis of Sub-Prefecture reports with regard to:

Table 49

MADAGASCAR - POPULATION AT 1 JANUARY IN SUCCESSIVE YEARS

YEAR	POPULATION in 000's	YEAR	POPULATION in 000's
1901	2 242	1937	3 758
1902	2 299	1938	3 758
1903	2 454	1939	3 833
1904	2 516	1940	4 016
1905	2 553	1941	4 034
1906	2 613	1942	3 986
1907	2 642	1943	4 190
1908	2 707	1944	4 523
1909	2 738	1945	4 144
1910	2 870	1946	4 236
1911	2 966	1947	4 094
1912	2 988	1948	4 023
1913	3 011	1949	4 088
1914	3 264	1950	4 143
1915	3 351	1951	4 234
1916	3 496	1952	4 296
1917	3 501	1953	4 389
1918	3 520	1954	4 461
1919	3 489	1955	4 578
1920	3 119	1956	4 674
1921	3 255	1957	4 842
1922	3 336	1958	4 975
1923	3 311	1959	5 098
1924	3 456	1960	5 183
1925	3 519	1961	5 353
1926	3 579	1962	5 536
1927	3 591	1963	5 753
1928	3 618	1964	5 999
1929	3 709	1965	6 234
1930	3 665	1966	6 462
1931	3 722	1967	6 676
1932	3 725	1968	6 912
1933	3 736	1969	6 199
1934	3 783	1970	7 321
1935	3 808	1971	7 551
1936	3 696	1972	7 820

Source: Administrative Estimates

-
- geographical characteristics: rural communes, urban communes, settlements or towns of 1 000 inhabitants or more, sub-prefectures, prefectures, provinces, national territory;
 - civil registration characteristics: sex, major age groups : 14 and under, 15-20 years, and 21 and over;
 - socio-cultural characteristics: races, nationalities.

Finally, it should be noted that the last Sub-Prefecture reports were published in 1972 just before a reorganisation of the territorial administration.

Table 49 shows the Malagasy population at 1 January in successive years since the first administrative census of 1900.

b) Demographic movements

Continuous observation of demographic phenomena in Madagascar is achieved by the recording of Civil Registration statistics for natural movements, and by the completion of international cards of disembarkation and embarkation for international migratory movements.

* Civil Registration

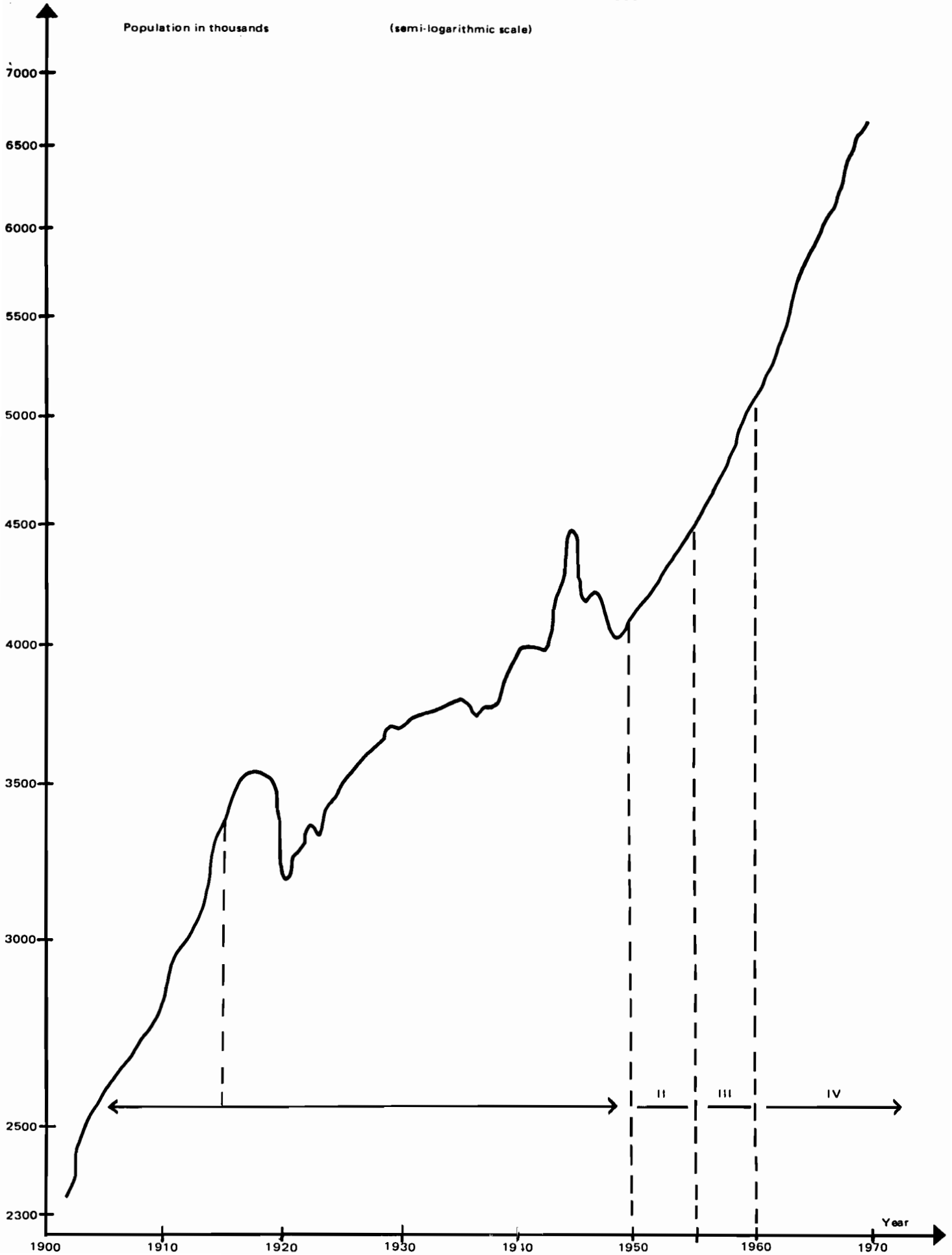
In Madagascar, the Civil Registration recording system was established for the first time by Queen Ranaivalona II in 1878. At that time, the field covered was far from exhaustive in either the geographical sense or in terms of the population touched by the system. Nowadays, although registration offices are scattered throughout the island, significant under-declarations are still apparent.

In each administrative unit consisting of communes, civil registration lists are kept up-to-date by the Civil Registration Officer in the person of the Mayor with the assistance of his deputies. Each year the Civil Registration Officer asks INSRE to send out birth and death "statistical forms" as well as "marriage bulletins". These statistical forms may be completed by the respondents themselves, by nurses or mid-wives, or by the Civil Registration Officer.

For villages distant from the civil registration centre, the village heads keep all declarations in a register. These are sent on to the Civil Registration Officer who copies them on to statistical forms and into the registers. The forms, duly completed, are sent to INSRE, generally monthly, and are then recorded and classified by administrative ward.

As forms are returned, the declared events are analysed manually by the Demographic Section, based on processing models. The results are published in "The Population of Madagascar on January 1st of the year", and classified according to the three principal events: marriages, births and deaths. Only the numbers of births and deaths are of interest in up-dating population figures.

CHART 7 MADAGASCAR
EVOLUTION OF THE POPULATION SINCE 1900



* International Disembarkation and Embarkation Cards

These are the police documents which foreign visitors must fill in at customs posts. They are collected by the Ministry of the Interior, who sends them monthly to INSRE where they are analysed with a view to publication: in particular these documents contain information of a civil registration and professional nature, as well as the itinerary of the journey being made.

If long range movements appear to be satisfactorily recorded, traffic to and from the neighbouring islands (Comoro Archipelago...) is impossible to check effectively. Therefore, although Madagascar is an island, statistics on migratory movements display inaccuracies.

Nevertheless, these cannot be too significant, as the technicians consider that this source is one of the best of those established with the help of administrative documents.

It should be noted that the results of processing of the data on international migration are also included in the publication "Population of Madagascar on 1 January of the year".

* Adjustment of Figures

This is carried out according to the classic formula :

$$P_1 = P_0 + (B - D) + (I - E)$$

It should be emphasised straight away that the migratory balance for Madagascar is negligible; in 1975, 51 295 arrivals were counted against 53 535 departures, i.e. a migratory balance of 2 240 for a total population of around 7 000 000 inhabitants. This statement is confirmed by the figures for previous years : 1966, 1967, 1968, 1969.

Consequently, only the natural movement balance is taken into account in the adjustment of the figures provided by the administrative estimates :

$$P_1 = P_0 + (B - D)$$

with P_1 = updated figure

P_0 = figure from administrative estimates

$B - D$ = balance of natural movement based on civil registration statistics

Table 50
MADAGASCAR - ANNUAL ADJUSTMENT OF FIGURES FROM ADMINISTRATIVE ESTIMATES FOR 1ST JANUARY (1960-1973)

(Unit : thousands of inhabitants)

YEAR	P ₀	B - D	P ₁ (Adjusted figure)
1959	5 098	101	
1960	5 183	111	5 199
1961	5 353	122	5 294
1962	5 536	-	5 475
1963	5 753	-	-
1964	5 999	139	-
1965	6 234	145	6 138
1966	6 462	139	6 379
1967	6 676	159	6 601
1968	6 912	165	6 835
1969	7 199	174	7 077
1970	7 321	174	7 373
1971	7 551	189	7 495
1972	7 820	198	7 740
1973			8 018

3) Compilation of partial data: "The Population of Madagascar in Mid-1962"

Up to 1959, the only sources of demographic data with a national bearing on Madagascar were administrative in nature, and therefore with scarcely any guarantee of scientific accuracy.

During the years 1959-1960, the INSRE carried out an enumeration in six large towns, provincial capitals.

From 1960 to 1964, this enumeration was extended to urban communes, centres of 5 000 inhabitants or more.

In 1962, rural areas (all settlements with less than 2 000 inhabitants) were subjected to a one in two hundred statistical sample survey.

The coverage of population by these various statistical operations is estimated at 97%. Therefore, in the context of a study carried out by the Institute of Training and Demographic Research (IFORD) of Yaoundé, it was considered opportune to piece together these partial data at a specific date in order to obtain a total population figure for Madagascar. It should be made clear that the survey carried out in rural areas was a budget-consumption survey which provided, among other things, demographic data. The date of this survey was taken for the assembly of data since in 1962 the rural population represented 87% of the Malagasy demographic universe.

The figure of 3% of the total population residing in pre-urban centres (2 000 to 4 999 inhabitants), not covered by the statistical operations, was estimated on the basis of the results of the administrative censuses of 1961 and 1964.

By adjustment of the figures from urban censuses, and in conjunction with the assembly of data mentioned above, an estimate is obtained of the total population of Madagascar in mid-1962 : 5 783 300 inhabitants.

4) Statistical Collection

At the present time, Madagascar has only two sources of demographic data using statistical collection on a national scale:

- a demographic sample survey: "Demographic Survey - Madagascar 1966",
- a statistical enumeration: "The First General Census of Population 1975".

a) The Demographic Sample Survey

The Demographic Sample Survey of 1966 was carried out by INSRE at the request of the "Commissariat General du Plan" in order to provide a satisfactory estimate of the growth rate of the Malagasy population.

* The questionnaire

The questionnaire in use included :

- a household sheet containing information on civil registration, socio-cultural and professional details about people resident in or visiting the household,
- a sheet on deaths in the household which have occurred during the previous twelve months,
- a sheet for women concerning women over 12 years old, to obtain information on fertility at the time of the survey, total fertility and total mortality.

* The survey

This was a two stage sample survey:

- the first one at the cantonal level with a ratio of 1/10,
- the second one within cantons with a ratio of 1/20.

The total ratio of one in two hundred gave a growth rate of 0.3 percent with a 95 percent confidence interval.

After a stratification according to the density of population and geographic situation, the first draw provided 77 cantons; the figures for the population in the cantons were taken from the reports of the sub-prefectures for the year 1964 and their area from the "Code géographique" of the INSRE.

A list of villages in a logical geographical order (along an itinerary) was established in each drawn canton. Then, a systematic draw of villages was made for every $P_i/10$ inhabitants (P_i being the population of the n th canton). It was then necessary to count in the village as many times 50 inhabitants as there would have been individual persons drawn during a systematic survey.

Carried out in this manner, the survey presented a sample of approximately 39 000 inhabitants.

* The estimates

The observed results provided among other things:

- the size of the total population in mid-1966: 6 200 000 inhabitants with a 95% confidence interval of \pm 200 000 inhabitants
- the natural increase rate: 2.1% with a 95% confidence interval of \pm 0.4%

This natural increase rate results from a 46‰ birth rate and a 25‰ gross death rate.

It must be mentioned that the rate for Lotka was estimated at 2.3%.

b) The Census

The first general census of population started in 1975 with the financial backing of the United Nations Fund for Population Activities and the National Fund for Economic Development.

The decision to carry out a first general census of population was taken as early as June 1965 by the Interministerial Committee for Planning and Development. The objectives of this operation were defined and decided upon by the National Census Commission where all ministerial departments and some private administrations are represented.

Between 1967 and 1971, INSRE were to elaborate a methodology, prepare the necessary documents and test them by means of pilot surveys carried out in urban centres and rural communes.

* Methodology

Different categories of population were considered in the method of collection:

- according to the environment: urban and rural populations
- according to the type of residence: transient population (hotels,...) population of specific institutions (barracks, convents, prisons, ...) population of households with a distinction drawn between present or absent residents and visitors.

Three periods were envisaged for the carrying out of operations in the field according to the environment:

- 1st period: the census of the town of Antsirabe and of the large urban centres and provincial capitals with the exclusion of Tananarive-ville. These are agglomerations of more than 45 000 inhabitants.

Night of the census: 26-27 January 1975.

- Second period: the census of the town of Tananarive and other urban centres which were on the whole urban communes representing the chief towns of sub-prefectures with a population between 5 000 and 45 000 inhabitants.

Night of the census: 6-7 April 1975.

- Third period: the census in rural areas.

Night of the census: 17-18 August 1975

Five kinds of documents were used for the collection of data:

- the segment register for the counting of buildings and the identification of households, a document for checking and provisional sorting, a basis for post-censal checking;
- the dwelling-household questionnaire for population enumeration;
- the special institutions questionnaire for the enumeration of the population in special institutions;
- the transient population questionnaire;
- the questionnaire for the Malagasy population residing abroad: census carried out by the diplomatic representative of Madagascar.

As far as the design of the "dwelling-household" questionnaire is concerned, the difference between the urban and rural environment ought to be pointed out.

In urban areas, the questionnaire was more elaborate and worded in French whereas for rural areas, the questionnaire was lighter and produced in Malagasy. In both cases, it contained both social and individual data.

The social data concerned housing characteristics (name of dwelling, floors inhabited, number of occupied rooms, means of water supplies, degree of comfort), durable goods (radio, sewing machine, car or other vehicle, plough, ...) and the farming activities of the household.

The collected individual data concerned:

- civil registration details: christian and surnames, kinship, sex, date of birth, marital status, nationality;
- geographical details: status of residence at the place of enumeration (RP, RA, V), previous place of residence (sub-prefecture), with date of arrival or departure, place of birth;
- socio-cultural details: level of education and literacy;
- economic details: type of occupation, job title, principal work, nature of the main activity of the place where the individual works;
- health details: disabilities.

In urban areas, the household questionnaire contained twenty individual pieces of information whereas in rural areas it contained only nineteen of them: "origin" (country of origin for foreigners) or "ethnic group" (for the Malagasy) was the additional question posed in urban areas.

The carrying out of observations in the field consisted of three phases:

- the census of buildings during which, on one hand, all households had to be identified by means of a numbering system, and on the other hand, dwellings had to be listed according to their individual utilisation (detached houses, apartments, ...), economic (industrial, commercial, ...), or social (hospitals, schools, places of worship)
- the census of population and inhabitants which represented the population census proper;
- the post-censal survey conducted on a sample of households originating from a 1/50th survey which was designed for the checking of the results of the census and to obtain data on fertility and mortality.

Finally, it must be noted that particular attention was paid to public awareness and to publicity both at the beginning and during the operation, to which end census commissions at provincial, prefectural, sub-prefectural and cantonal levels, were set up. Among the participants in these commissions were public and religious authorities, technicians, primary school teachers, representatives of private enterprise, etc.

* Organisation

The most marked feature of the organisation of the census was the setting up of a central operations management comprising a technical service, an administrative service and a data processing service.

Located in Tananarive, this body was intended to co-ordinate and supervise the work in the field. It looked after the return of documents, then the exploitation and computer processing of data. It was responsible for the administration, financing, and the material needed for operations.

The organisation was structured on the basis of administrative wards. At the level of each province there was an officer, and at prefectural level a supervisor. The provincial officer and the prefectural controllers had the task of providing for the recruitment and training of zone supervisors and enumerators, and of supervising the carrying out of work in accordance with the schedule of operations. In each sub-prefecture, a team-leader was appointed who was to set up and organise the team composed of zone supervisors and enumerators.

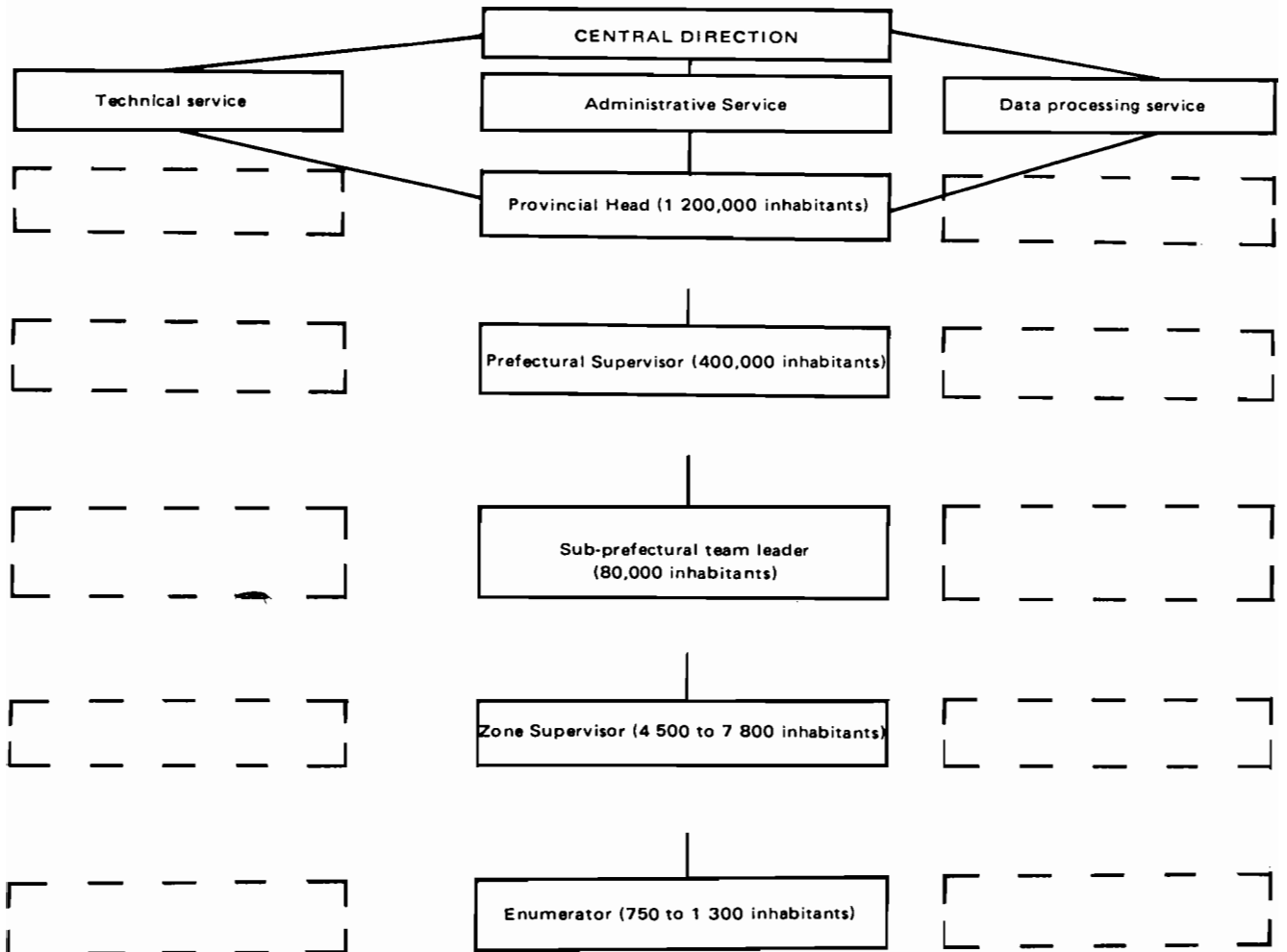
The sub-prefectural team leader played the most important part during operations in rural areas, in the enforcement of instructions. Each sub-prefecture was divided into several zones and each zone into segments. These zones and segments are boundaries drawn for the purposes of the census.

A zone comprises about six segments from 750 to 1 300 inhabitants. The segment constitutes the area to be covered by an enumerator.

The zone supervisor had to carry out specific tasks:

- to carry out the counting of buildings and proceed to the division of the zone into segments;
- to supervise the work of the enumerator during the population enumeration;
- to implement the work of numerical analysis after the checking and correction operations.

CHART 8
MADAGASCAR – ORGANIZATIONAL STRUCTURE OF THE GENERAL CENSUS OF 1975



Officers at the level of the Central Direction and at provincial level were in the main professional statisticians.

In the posts of prefectural supervisors were technical assistants, employees or agents of the statistical office more or less familiar with the implementation of a demographic survey. The management of operations, as far as co-ordination and supervision are concerned, was therefore carried out by qualified personnel, members of INSRE. In contrast, the sub-prefectural team leaders and zone supervisors, as well as the enumerators, were hired on contract, as far as possible on the spot, and possessed a good knowledge of the field and received intensive training.

* Publication of results

Manual processing of the principal demographic data has provided some provisional results: population figures by administrative ward, and according to urban and rural environment, with in particular a breakdown by nationality, sex and age. Processing by computer has necessitated the punching of cards, the transcription of data to magnetic tape and the design of a programme.

At the present time, only the data concerning urban areas has been processed by computer, and has been the subject of official publications.

In addition, the processing of post-enumeration data has been carried out manually. This has provided characteristics of natural movement (mortality, fertility) and an estimate of the total population and its sex and age structure.

Finally, it should be noted that the total figure for the resident population of Madagascar was estimated by the General Census at 30th June 1975 to be 7 568 577 inhabitants.

II. CRITICAL ASSESSMENT OF DATA SOURCES AND STUDY OF VALIDITY OF DIFFERENT ESTIMATES

After this brief review of the four major sources of data relating to estimates of the population of Madagascar, it is of interest to correlate the various results and to test their likely validity in the light of a criticism of the sources.

1) Criticism of Data Sources

In general, four components may be considered in criticising the sources of data:

- the socio-geographical context of the field of observation
- financial and material provisions
- methods of observation
- management, supervisory and executive personnel.

If the socio-geographical environment may seem to play only an indirect role in an evaluation of the quality of sources of data, it nevertheless represents the principal constraint determining the success of operations.

a) The socio-geographical environment of the field of observation

In any survey, the individual who represents the statistical unit plays a basic role; the trustee if not the owner of individual or collective data, he passes it on to the enumerator, who in principle, simply enters it on the questionnaires. It is necessary therefore to consider the survey on a psycho-social plane in order to understand his reactions vis-à-vis the activities related to the collection of demographic data, and then to localise him geographically in order to reach him, contact him, observe him and question him.

The Merina monarchy, as well as colonisation, introduced and established a rift in the Malagasy society: on one hand, an educated minority at the service of the administration and of the authorities, and on the other hand, the illiterate majority in permanent conflict with this administration, seen as a machine of oppression.

The population greatly distrusted the agents of the administration, in particular the cantonal heads who represented the central authority in rural areas. As mentioned, these cantonal heads were the principal element in producing the Sub-Prefectural Reports and represented the pyramidal base of administrative censuses. The colonial authority used these censuses for its own purposes: administrative organisation, tax collection, reviewing boards, imposition of duties, land seizures, etc. The repulsion of the population towards any survey, in particular of a demographic nature, is therefore quite understandable, since they consider them tantamount to a police interrogation probably destined to serve the machinery of repression. This renders likely that the administrative censuses during the colonial period produced underestimations of the total population.

In the neo-colonial period the colonial administrative structure was retained practically intact. The data collection method was not revised, nor were the agents replaced. Nevertheless, new objectives were allocated to the sub-prefectural reports, consisting of: the establishment of electoral lists, the categorisation of communes into rural or urban, and the drawing up of budgetary forecasts. Attention should be drawn to the fact that these objectives were linked to the interests of certain local political and administrative officers who would tend to inflate their own population figures; the higher these were, the more chance there would be of modern socio-economic infrastructure being provided such as hospitals, schools, roads, etc... These political and administrative reasons would seem to point towards an overestimation of population figures by sub-prefectural reports in the neo-colonial period.

Not only do the people mistrust any form of survey, but a significant proportion of the population is illiterate, and therefore not always able to understand the social utility of data collection activities: the Demographic Survey of 1966 estimated that 61% of the total population was illiterate. This percentage increases according to age, while the "information centre" or "information holder" is the head of

household or family, or the mother in his absence. This illiteracy reinforces the mistrust of the subject towards the enumerator because he is unable to check the faithful transcription of his verbal statements, which as far as he is concerned, represent evidence which could be made binding and serve as pretexts for repression on the part of the authorities.

Any collection of demographic data is faced with this social mentality which is far from disappearing.

The marked geographical dispersion of the population which the low demographic density would lead one to expect (10.5 inhabitants per square kilometre in 1966) appears to favour the continuance of this social state of mind. Furthermore, the inadequacy of communication lines and the state of roads requires considerable mobility on the part of executive personnel, and means of transport. This was a serious problem which faced enumeration activities. In certain regions, particularly those in the western part of the island where population density was less than six inhabitants per square kilometre, problems of access and checking were considered to be practically insurmountable. Delimitation criteria for census zones and segments based on the demographic size of a group of settlements seemed inadequate, for they did not take into account the physiography of the area the personnel in the field would have to cover. In 1962, the density of population in rural areas was eleven inhabitants per square kilometre as against 124 inhabitants per square kilometre in urban areas [9]; assuming a uniform distribution of population on the ground, an urban zone supervisor would be in charge of 52 square kilometres as against 559 square kilometres for a rural zone supervisor and an urban enumerator would cover 8 square kilometres against 93 square kilometres for his counterpart in rural areas.

It is therefore important to take into account not only population figures, but also its geographical dispersal in an evaluation of the financial and equipment costs involved in collection activities.

b) Means of finance and equipment

Administrative sources and statistical collections must be distinguished on the basis of their methodology and organisation in this chapter.

Administrative sources are permanent and depend on the structure and policy of the administration. It is therefore difficult to evaluate the costs of collection which in fact are subsidiary to the general running of the administration; cantonal heads and sub-prefects are not paid specifically for the compilation of the sub-prefectural reports.

However, the assessment of means of finance and supply takes on a great significance in the field of statistical collections.

In Madagascar, problems of finance were among the causes of the repeated postponements of the first general census of population.

Placed in the global context of national development, the costs incurred by the activities of a statistical collection can be considered as indirect investments because, by providing information, they help to bring about better social organisation by the more effective planning of human resources and a more rational utilisation of material resources and means available.

Unfortunately, the politicians responsible and certain officials do not see things in this way. The first difficulties in the realisation of a large scale statistical collection, such as the general census of population, lie in persuading the policy-makers and officials of the necessity and usefulness of such an operation in the formulation of development plans.

In the course of the demographic survey of 1966, the financing was subject to administrative regulations and, therefore, out of the control of the technical directors of activities, who thus found themselves caught up in bureaucratic complexity and inertia. Through the setting up of a central direction of activities, the implementation of the general census took on an autonomous character and escaped from these constraints.

The establishment of "advance funds" although not available during the 1966 Demographic Survey, resolved numerous problems in the context of the general census. Besides, the utilisation of order coupons delayed the delivery of certain goods which could affect the schedule of activities. Petrol coupons were normally refused in rural areas, which sometimes held up the progress of the collection.

Requests for the extension of financial provisions greatly handicapped the progress of activities and threatened to bring about the failure of the collection as a whole. It would seem to be important to ensure well in advance the availability of funds for paying the salaries of enumerators (both zone supervisors and enumerators) and to build in a good margin of "unforeseen circumstances" in the face of the current inflationary situation. In addition, the maintenance cost of equipment acquired should be specifically accounted for in the budget. The ordering of goods and equipment imported from abroad should be done well before the start of activities in the field, so that their delivery at the required time can be ensured.

Finally, in discussing means of finance and equipment, it is always tempting to compare the costs and advantages of a demographic sample survey and a general population census. The ratio of costs between the Survey of 1966 and the General Census of 1975 is roughly in the order of 1:25. A simplification of the household questionnaire used for the general census in rural areas would have facilitated the implementation of collection, coding and copying and would have significantly improved the quality of data. Certain financial and supply problems would have been simplified.

But, if the sample survey offers obvious advantages in comparison with a general census, particularly in the area of incomplete statistics, it is nevertheless incapable of providing an accurate estimate of the total population.

c) Methods of observation

Methods of collection must take account of the socio-geographic environment of the field of observation and of the financial and material means available. The methodology of administrative censuses is not defined in a clear-cut way for the whole territory. No instructions are given to local administrators regarding the method of collecting data. The notion of residence is not defined, households are not identified and the timing of activities is not constant throughout the country. The members of households are not interviewed and no base questionnaire (e.g. household form) is used. Duplications and omissions often occur.

On the other hand, registration of vital statistics and international migrations are regulated by official documents. There are base questionnaires and their completion seems to pose no problems. However, the administrative machinery tends to seize up when there is a shortage of vital statistics' forms, as copies are not supplied in sufficient numbers.

The under-registration of vital events would also result from the difficulty experienced in reaching registration offices by a substantial part of the rural population because of the lack of roads and of their bad conditions during the rainy season. Furthermore, the degree of under-registration varies according to the nature of the event (births, deaths, marriages): in 1966, 80% of births were registered against 50% of deaths [11].

In short, administrative sources cannot yet provide satisfactory estimates of the size of the population.

Some of the results can however be very useful in the context of specific studies such as the compilation of partial data in order to estimate the population of Madagascar during the year 1962. Remember that this was a collection of results from three different sources:

- the statistical censuses of urban communes (centres of 5 000 inhabitants or more);
- the administrative censuses of pre-urban centres (2 000 to 4 999 inhabitants) grouping 3% of the total population;
- the budget-consumption survey of rural households with a sampling fraction of 1/200 encompassing 87% of the total population.

"We can therefore surmise that the global estimate of the size of the Malagasy population in the middle of 1962 results from a national survey, in which urban centres (settlements of 2 000 inhabitants or more) have been submitted to exhaustive enumeration and the rural areas (settlements of less than 2 000 inhabitants) to a light survey with a sampling fraction of 1/200" [9].

Two weaknesses in the results obtained by this method may be emphasised: on one hand, the population figures for urban centres were projected for 1962 by growth rates deduced from administrative figures, and on the other hand, a confidence interval was not determined for the estimate of total population.

Another very valuable use of the results of the administrative censuses can be made in carrying out sample surveys. In the absence of a general census of population, the administrative censuses of 1965 provided the sampling frame for the demographic survey of 1966. The imperfections of this sampling frame must have to some extent influenced the quality of the results.

The methodology used in the survey of 1966 met the aims defined for this operation in a satisfactory manner. It should be noted however that the observation period corresponded to exceptional circumstances following the cyclone "Iris" which caused a massive decrease in agricultural production.

The efficiency of the methodology of the survey of 1966 facilitated prompt publication of the results (August 1967).

Finally, what can be said of the observation methods used in the general census of population?

First of all, it must be pointed out that, four years after it was carried out, the definitive results of the general census have not yet been published.

The carrying out of operations in three periods (census of provincial capitals, except Tananarive-ville, census of the town of Tananarive and other urban centres, census of rural areas), give rise to several difficulties in the field, although it seemed to cope satisfactorily with material constraints and problems relating to the technical supervision of operations:

- uncontrollable duplications and omissions due to temporary or permanent movements from one place to another between the various periods;
- control staff and supervisors were simultaneously responsible for multiple tasks from the beginning to the end of the operations (coordination and checking of work in progress, the collection of incoming questionnaires, checking and occasional return to the field, and at the same time the preparation of transferring from one area to another with the concomitant training of new enumerators, the setting-up and accommodation of new teams, ...)

The training of enumerators was too rapid, above all in rural areas and the checking of their work was not always enforced.

The surface area was not taken into account when delimiting zones and segments and the household questionnaire proved to be too lengthy for rural areas.

The political events of 1975 were not favourable to the successful progress of activities: "the census took place at a time when an administrative reorganisation of the national territory was in progress" [19].

Table 51

MADAGASDAR - CORRESPONDANCE BETWEEN ADMINISTRATIVE SUB-DIVISIONS BEFORE AND AFTER THE REORGANISATION OF 1975

Before reorganisation	After reorganisation	Numbers	Remarks
Province	Faritany	6	No change
Prefecture	-	-	Suppressed after reorganisation
Sub-prefecture	Fivondronam	110	-
Commune	Firaisampokontany	1 250	-
Village	Fokontany	11 100	"In the present structure the Fokontany has the same status as a village, except for the fact that it has been placed under the authority of an executive committee presided over by the president of the Fokontany. The members of the committee who choose the president of the Fokontany are elected by the people of the Fokontany" [19].

d) Operations and supervisory personnel

The use made of the results of administrative censuses and the traditional methods employed in carrying them out are such that the operations and supervisory personnel do a routine job and are not motivated to improve the collection of data. In so far as statistical surveys have been carried out by INSRE with or without the collaboration of other organisations, it would appear to be quite normal that INSRE should provide most of this personnel.

Nevertheless, other statistical offices could have provided the operations and supervisory staff necessary for the implementation of the general census (e.g. agricultural statistics, school statistics, labour statistics...).

Statistical surveys have shown that the most efficient organisation does not require a cumbersome bureaucratic hierarchy.

The success of the operations depended not on the number of high-level organisational staff but rather on experienced operations and supervisory staff (trained in the field) on good terms with junior field personnel.

The recruitment and training of the latter should be done with the utmost care: recommendations and pressures of any sort whatever should be rejected.

Finally, survey organisers should make provision for substitute staff (buffer agents) in cases of shortage and respect scrupulously contracts of employment (social benefits, amount of salaries, dates of pay...).

2) Study on the validity of various estimates

a) Statistical estimates

Results exist for various dates coming from sources in which statistical methods were employed.

Table 52

MADAGASCAR - ESTIMATES OF POPULATION SIZE BY STATISTICAL METHODS

Method of assessment	Date	Population size in '000s			Sex ratio
		Male	Female	Total	
Compilation of partial data [9]	30.6.1962	2 871	2 912	5 783	93.6
Demographic survey [4]	30.6.1966	3 049	3 151	6 200	96.8
General Census of Population	30.6.1975	3 745	3 824	7 369	97.9

The sex ratio for the total population in 1966 seems too low. The results supplied by the general census corroborate the conclusions of the analysis made in the study of the compilation of partial data: "it is apparent that the method used in 1962 (exhaustive enumeration in urban areas and two-level sample survey in rural areas) better reflects the breakdown by sex of the population in so far as it can take into account rural emigration which consists of surplus male population; which is not the case for the demographic survey of 1966 where the imbalance in the sex composition of the household caused by rural emigration is more likely to be reflected at the level of sampling" [9]. Having said that, it must be asked if the sex ratio in 1962 agrees with that of 1975.

Independent data is introduced for the purposes of checking; in 1966, the male natural increase rate was estimated at 2.05% against 2.10% for the female rate [4]. These two increase rates allow one to project the sex ratio from 1962 to 1975. In fact:

$$P_t = \frac{M_t}{F_t} = \frac{M_o (1 + r_M)^t}{F_o (1 + r_F)^t} = P_o [1 + t (r_M - r_F)]$$

with P_t = total sex ratio at date "t"
 M_t = size of the male population at date "t"
 F_t = size of the female population at date "t"
 r = natural increase rate

This formula is applicable only if the natural increase rates are consistent and if the population considered is not affected by external migrations. This second condition is confirmed in the case of the population of Madagascar. As far as the former is concerned, we shall assume that there were only very small variations in "r" during the period 1962-1975 with mean natural increase rates very close to those given by the survey of 1966.

By calculating P_{75} we obtain:

$$\begin{aligned} P_{75} &= P_{62} [1 + 13 (2.05\% - 2.10\%)] \\ &= 98.6 [1 - 0.65\%] \\ &= 97.9 \end{aligned}$$

The exact global sex ratio provided by the general census is obtained - a very satisfactory result.

This result encourages the calculation of the mean annual rate of natural increase between 1962 and 1975, and then to check if this corresponds well with the natural increase rate given by the demographic survey of 1966:

$$7\ 569 = 5\ 783 (1 + r)^{13}$$

or, $\log 7\ 569 = \log 5\ 783 + 13 \log (1 + r)$

whence $\log (1 + r) = \frac{1}{13} [\log 7\ 569 - \log 5\ 783]$

giving a value of:

$$r = 2.1\%$$

Indeed, the natural increase rate calculated by the 1966 survey is equivalent at 2.1% to a gross birth rate of 46% and gross death rate of 25%.

In admitting in this way the estimates of 1962 and 1975, the 1966 figures can be corrected. First of all, it should be seen if the female population at the three dates agrees with the mean annual increase rate of 2.1% for the 1962-1975 period.

Table 53

MADAGASCAR - MEAN ANNUAL INCREASE RATE FOR FEMALE POPULATION
BETWEEN 1962 AND 1975

PERIOD	%
1962-1966	2.0
1966-1975	2.2
1962-1975	2.1

It is therefore sufficient to adjust the 1966 male figures:

$$P_{66} = P_{62} [1 + (4 \times (-0.5\%))] \\ = 98.6 \times 0.998 = 98.4$$

Therefore: $M_{66} = 3\ 151 \times 0.984 = 3\ 101$ thousands

The total adjusted population for 1966 is therefore equal to:

$$\underline{3\ 101 + 3\ 151 = 6\ 252\ \text{thousand}}$$

b) The administrative estimates

The available population figures according to the various sources are then correlated for the same dates.

Table 54

MADAGASCAR - COMPARISON OF POPULATION FIGURES FROM
VARIOUS SOURCES

(Unit: '000s of inhabitants)

SOURCE	1962	1966	1975
Statistical	5 783	6 252	7 569
Administrative censuses	5 645	6 569	-
Up-dated figures	-	6 490	-

The discrepancy between the figures advanced by administrative censuses and up-dated figures shows that the authorities responsible for the collection of data used in the compilation of sub-prefectural reports do not use the recording of civil registration events for their estimates. There should therefore be a partial independence between the administrative censuses and civil registration. Despite the significant under-declaration of deaths for civil registration purposes compared with births, Table 54 indicates an over-estimation in administration census figures compared with those from annual adjustments. The balance of migration at a national level being zero or negligible, an inflation of population figures by administrative censuses may be deduced; which reinforces the conclusions already presented in criticism of data sources. In fact, this over-estimation of population figures by administrative censuses began, according to Table 54, between 1962 and 1966, soon after Independence; by 1966, this over-estimation had already reached 105%.

III. CONCLUSIONS

Mean annual natural increase rates for the following periods appear to be:

- before 1950 (1) : 1.0% [4]
- 1962-1966 : 2.0%
- 1966 : 2.1%
- 1966-1975 : 2.2%

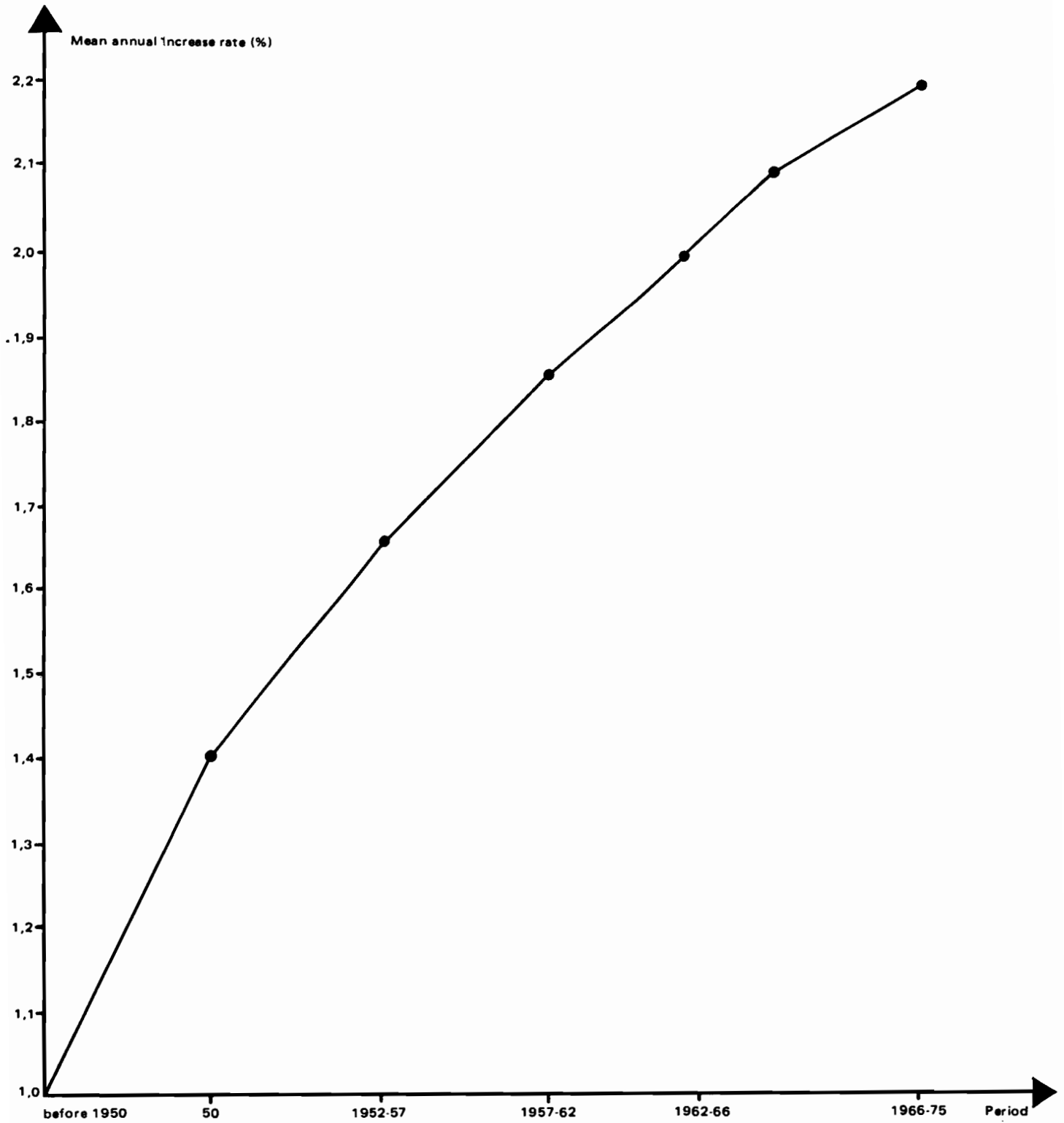
In order to estimate the mean natural increase rate for the period between 1950 and 1962, a curve will be traced freehand on a graph trying to reflect the phenomenon of the acceleration in demographic growth after the advent of contact insecticide spraying (DDT being the prototype) and the introduction of mass medical care, in particular preventative medicine imported from abroad with its latest discoveries. Note that a major DDT spraying campaign was organised in 1949. Furthermore, on referring to Table 49 showing population figures for Madagascar according to administrative estimates at successive January 1, four phases of growth can be distinguished (see Chart 9).

- I before 1950: = 1%
- II 1950-1955 : = 1.9%
- III 1955-1960 : = 2.6%
- IV 1960-1972 : = 3.5%

If the two latter growth rates are greatly over-estimated for the reasons already described above, the comparison of the first two shows the demographic "boom" after 1950.

-
- (1) This rate can be calculated from the evolution of population given by administrative censuses between 1900 and 1950, and is generally accepted for African population during this period.

CHART 9 MADAGASCAR
EVOLUTION OF THE MEAN ANNUAL INCREASE RATE OF THE POPULATION



By inspection, the respective mean natural increase rates below are obtained:

- 1952-1957 = 1.4%
- 1957-1962 = 1.7%

These different rates permit us to trace the probably evolution of total population figures in the course of the last three quarter centuries.

Table 55
MADAGASCAR - PROBABLE EVOLUTION OF THE POPULATION
FROM 1900 TO 1975

DATE	TOTAL POPULATION (in thousands)	DATA SOURCE
1900	2 941	Estimate
1925	3 772	Estimate
1950	4 837	Estimate
1955	5 140	Estimate
1960	5 569	Estimate
1962	5 783	Survey and compilation
1965	6 123	Estimate
1966	6 252	Survey and adjustment
1970	6 789	Estimate
1975	7 569	General census

In comparing the figures estimated before 1962 to those provided by the administrative censuses for the same dates, the conclusions in the critical analysis of data sources are vindicated, that is to say: "administrative censuses under-estimated the population during the colonial period".

According to Table 55, the population in 1900 doubled in 60 years, that of 1925 in 50 years, and that of 1950 in about 35 years. Note that the 8 million population mark was reached in 1977, and that it can be predicted that there will be a half million inhabitants by 1980.

At the end of our study, what proposals are indicated as regards the improvement of demographic data sources in Madagascar?

First of all, the new administrative structure seems to have done nothing to increase the effectiveness of collection or recording systems: administrative censuses and the publication of their results have been given low priority since 1972 whereas the recording of vital events displays disturbing weaknesses.

Will there be an indefinite running-in period for the new system or should the existence of bad organisation, or more simply a general lack of interest in the collection of demographic data be acknowledged? This is all the more regrettable as the improvement of administrative sources seems to be the most viable strategy in the context of an action plan for the short or' medium term.

Following the suppression of minimum tax levels or capitation duty since 1972, the administrative censuses have had to start afresh on new foundations. It would be interesting to integrate them in the global context of the preparation of regional plans. Their principal utility should be the permanent collection of socio-economic data: elaboration of methodology, preparation of base questionnaires, publication of survey instructions, training of territorial administrative officers.. [2]. It is desirable that demographers and statisticians should be involved in the organisation of administrative censuses. For the processing and publication of data, the INSRE should collaborate with the ministers concerned.

Furthermore, administrative censuses must be kept up-to-date with vital event recording by the holding in each "fokontany" of a notebook or permanent register.

In fact, administrative censuses and the recording of vital events ought to be linked.

Finally, socio-economic development remains the dominant component in the improvement of data sources, for, in the final analysis, the information carrier is the individual as a social being and economic unit, who must deliver this information in good faith and without any reservation.

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MALI
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M A L I

I. INTRODUCTION

Mali is a large inland country covering 1 240 192 km² in the heart of Western Africa and has frontiers with seven other states. The nearest port, Konakry (P.R. Guinea) is at least 700 km away. It is a country of immense plains, dominated in the south by the Mandigue Plateau and in the centre by the cliffs of the Dogon Plateau.

The Niger, of which 1 700 km flows in Mali, and the Senegal, with their numerous tributaries, constitute its hydrographic backbone.

The climate is characterised by two seasons:

- the dry season, which is the longer, from November to May
- the rainy season, from June to October (rain is very unevenly distributed)

The population remains little known. Only the latest census, the results of which have not yet been published, will provide a more realistic picture.

II. SOURCES OF DATA

Mali does not possess very detailed documentation on demographic matters, hence the scarcity and incompleteness of data.

1) Historical estimates

If estimates prior to 1960 (year of independence) are considered as historical, the following information extracted from the "Tableau Economique et Social des Etats et Territoires d'Outre-Mer 1978" is available.

Table 56

MALI - POPULATION ESTIMATES UP TO 1960

	1921	1931	1946	1951	1956	1960
Population	2 475 000	2 856 000	3 797 000	3 347 000	3 708 000	4 100 000

These figures should be regarded with the greatest caution bearing in mind the frequent territorial changes which occurred at that time: in 1944, the areas of Néma and Aïoun El Atrous were transferred to Mauritania whereas other areas of Upper-Volta were attached to Soudan (1932-33). On the other hand, with the reconstruction of Upper-Volta, other areas (Tougan, Nouma, etc...) became part of this territory.

Bamako, which became the capital of the country in 1908, witnessed rapid growth:

Table 57

MALI - POPULATION ESTIMATES FOR BAMAKO UNTIL 1960

	1921	1945	1956	1958	1960
Population	14 400	36 700	59 300	62 900	129 300

2) Administrative censuses

The censuses carried out by local authorities are aimed mainly at providing information for tax purposes to the authorities. Without an adequate and statistically proved form of methodology, they do not lend themselves easily to demographic uses and remain to this day neglected by statistical offices, though they do represent the beginnings of population study. However, the Regional Offices for Planning and Statistics have used them in setting up village lists.

In 1974, for election purposes, the town hall of Bamako carried out a census of the town which was used by the "Office Malien du Bétail et de la Viande" (OMBEVI) to assess the needs of the population in meat; an indicative figure of 327 000 was obtained.

3) Statistical censusesa) The 1976 census

The sole nationwide demographic census was carried out between 1st and 16th December 1976. It included both sedentary and nomadic populations. A quick count of the summary cards filled in in the field by controllers and supervisors revealed the population of the main administrative divisions, that is around 6 308 320 out of which 49.06% were of male sex.

In addition, the urban population was counted, grouping together the population of regional capitals, communes, and any other locality of 5 000 inhabitants or more. It amounted to 1 054 502 or 16.7% of total population. Only Bamako, the capital of the country, with a population of 403 613, counted more than 100 000 inhabitants.

Table 58
MALI - POPULATION BY REGIONS (1976 CENSUS)

Regions	N° of "cercles"*	N° of "arrondissements"*	Area	Population		
				Rural	Urban	Total
Kayes	6	48	119 313	779 279	92 592	871 871
Bamako	7	38	90 100	831 670	488 500	1 320 170
Sikasso	7	49	76 480	1 052 190	119 671	1 171 861
Segou	5	35	56 127	838 945	145 668	984 613
Mopti	8	62	88 752	1 118 196	117 976	1 236 173
Gao	9	47	808 920	633 538	90 095	723 633
TOTAL	42	179	1 240 192	5 253 818	1 054 502	6 308 320

* Administrative divisions

b) Census of the town of Bamako

This operation took place in 1965-66. It only gave rise to a provisional publication showing the population by ethnic groups and activities. The resident population amounted to approximately 162 000 inhabitants.

4) Surveys

These have not been numerous:

* The first one carried out in 1956-58 by the socio-economic mission of Sudan, in the central delta of Niger, had several objectives and was divided into several parts:

- demography,
- agriculture,
- fisheries,
- budget/consumption,
- habitat.

The observed population amounted to 235 295; two booklets were published [3].

** The second demographic survey took place between May 1960 and June 1961 and showed a population of 3 484 500 in the area covered. By adding to it an estimate of the population of the areas outside the scope of the survey (Office of Niger - nomadic areas), an overall population 4 100 000 is obtained.

This study provides information on individuals, as well as groups and migrations [2].

From the years 1963 to 1973, projections have been established on the basis of this survey. The tables below show the data derived under the assumptions of:

- constant fertility
- a moderate decrease in mortality accelerating from 1967 onwards

Table 59

MALI - POPULATION ESTIMATES 1963-1973 ON THE BASIS
OF THE 1960-1961 SURVEY

Sex	1963	1964	1965	1966	1967	1968
Male	2 189 000	2 335 900	2 882 400	2 310 100	2 360 600	2 407 800
Female	2 205 200	2 249 200	2 293 300	2 336 000	2 379 200	2 424 400
Total	4 394 000	4 585 100	4 495 700	4 646 100	4 739 800	4 832 200

Sex	1969	1970	1971	1972	1973
Male	2 456 900	2 500 200	2 562 800	2 620 500	2 676 700
Female	2 472 100	2 513 300	2 588 100	2 636 600	2 696 700
Total	4 929 000	5 013 500	5 150 900	5 257 100	5 373 400

Source: [9]

These projections, compared with provisional results of the Population Census of December 1976 appear to have underestimated the evolution of the population.

*** Another important survey is the Permanent Agricultural Survey set up since 1964. It provides information mainly on the following:

- farming population,
- cultivated area,
- yield and production,
- livestock and farming equipment.

This survey is conducted at regional level by the "Directions Régionales du Plan et de la Statistique".

Table 60
MALI - EVOLUTION OF THE FARMING POPULATION BY REGIONS
 (thousand of persons)

REGIONS	1969	1970	1971	1972	1973
Kayes	660.4	645.3	676.0	704.9	690.7
Bamako	771.4	714.5	720.8	728.7	719.0
Sikasso	876.7	872.5	912.7	932.7	912.8
Segou	671.3	686.0	705.6	694.2	748.2
Mopti	964.6	1 001.0	964.3	996.5	1 037.9
Gao	280.9	278.4	244.7	242.4	228.5
TOTAL	4 171.3	4 197.7	4 224.1	4 299.4	4 337.0

Source: [6]

III. CRITICAL STUDY OF SOURCES

1) Field and population reference

All the population studies carried out up to now encompass both de jure and de facto population.

However, differences in definition make difficult any comparison between administrative censuses and demographic censuses and surveys. The latest census only considers as resident population those normally living in the country and enumerated at the place where the census took place, and those absent for less than 6 months, whereas administrative censuses and the first surveys included people who had been absent for periods of up to 5 years.

In the case of Mali, external migration is very important and a substantial proportion of the population lives outside national boundaries for more than 6 months.

Furthermore, all the studies mentioned, with the exception of the General Census, have been somewhat localised and the nomads were never counted. It is therefore very likely that, due to the imperfection of the method (enumeration made around centres of settlement), and to the characteristics of this population, omissions were made.

2) Factors which may have influenced the quality of collection

As the population is not used to censuses or statistical surveys and often does not understand the objectives of these undertakings, it remains constantly mistrustful and there is a tendency to provide information which is either inaccurate or incomplete. They have in mind taxes which are the prime objective of the administrative censuses.

Enumeration agents and interviewers are often not up to standard and are not effectively supervised, which is why they themselves give rise to many errors.

There are three types of geographical difficulties, which sometimes render transportation and communication non-existent: mountainous zones in the areas of Bandiagara and Kanieba; flood zones in the areas of Tenenkou, Djené, Mopti; and sandy or desert zones in some areas of the north. These geographical difficulties affect the quality and exhaustiveness of collection.

The mobility of population in urban areas compels the enumerator to make several rounds, which may discourage him and ultimately lead him to disregard his instructions, resulting in omissions and carelessness.

When training is not provided by the same people, it may produce different interpretations of instructions. In a country as large as Mali, it seems for the moment difficult to eliminate completely this risk; only a very advanced form of training for instructors could reduce these risks. Besides, the training (by categories) so far adopted leads to the same problem (reduction and homogeneity of questions and answers).

The major difficulty facing the sample surveys already made has been the setting-up of the sampling frame. In fact, there cannot always be found an exhaustive and up-to-date list of the various localities, which often results in incomplete frames.

Therefore it is difficult to speak of the consistency of sources; information generally differs according to sources; studies are most of the time very localised, and any generalisation would prove hazardous.

IV. CONCLUSIONS

Knowledge of the population of Mali is limited especially on the subject of its evolution. The results of various studies hardly permit the assessment of the population at the beginning of the century bearing in mind the various changes which affected the boundaries of Mali (ex French Sudan).

Despite the shortage of means, an improvement of sources could be obtained by:

- co-operation between regional statistical offices and regional administrative authorities in the implementation and uses made of administrative censuses;
- a better co-ordination between studies; none of them should be undertaken without the consent or even the participation of the "Service de la Statistique";
- improvement in the recording of vital events for Civil Registration (study under way).

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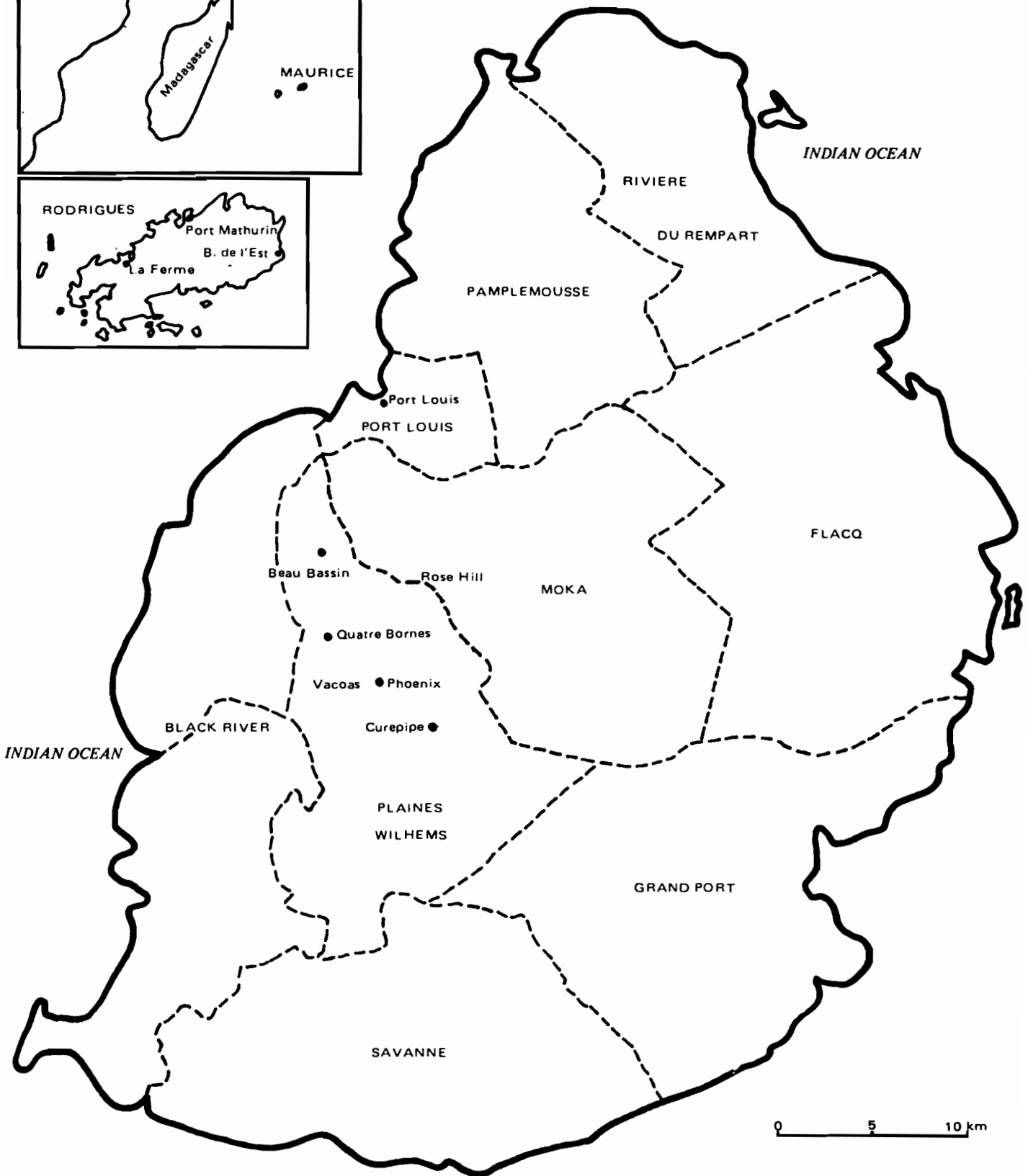
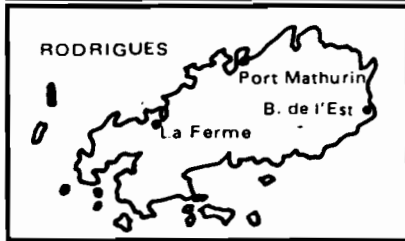
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MAURITIUS

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DECEMBER 1979

MAURITIUS



M A U R I T I U S

I. SOURCES OF DATA1) Early estimates

The history of demographic data in Mauritius is almost as old as human presence on the island.

As it had no native population, the country seems to have been only sporadically occupied before the 18th century. It was, in fact, uninhabited when it became French in 1715 and remained so until 1721, when colonisation really started. The first exhaustive enumeration took place less than fifteen years later in 1735: 838 inhabitants, comprising 190 European settlers and 648 African and Malagasy slaves (1). It is probable that from that time, enumerations became a relatively frequent administrative exercise. The results of enumerations made in 1767, 1776 and 1786 have been preserved. From 1786 onwards, the tradition was considerably reinforced since enumerations became yearly (1 January). It was to remain so until 1831; in the meantime, Mauritius became an English colony in 1810.

Charles Roquebain presents the results of certain enumerations, but notes that "precision does not signify accuracy":

- 1797: 59 020 inhabitants comprising 6 237 Europeans, 3 703 free Negroes and 49 080 slaves
- 1830: 91 826 inhabitants comprising 8 135 Europeans, 18 019 free Negroes and 64 919 slaves (753 are unaccounted for).

Until 1828, enumerations were explicitly linked with the levying of taxes. Obviously as a result, there must be a measure of doubt as to the sincerity of responses and therefore to the accuracy of results, especially as the number of slaves was used as a basis for the allocation of certain taxes.

After a break of fifteen years, statistical censuses proper began in 1846.

(1) According to Charles Roquebain, who unfortunately does not mention the origin of his figure, the island had 213 inhabitants in 1725.

2) Statistical censuses

The Central Statistical Bureau of Mauritius includes censuses from that of 1 August 1846 onwards; the most recent (30 June 1972) is the fourteenth. There was one very ten years between 1851 and 1931. The Second World War interrupted this remarkable regularity (1944) but, since 1952, censuses have been taking place again every ten years and are carried out in the middle of the calendar year (see Table 61).

Table 61

MAURITIUS - POPULATION EXCLUDING DEPENDENCIES (1)
ACCORDING TO CENSUSES SINCE 1846

Date of census	Population	Date of census	Population
1.8.1846	158 462	31.3.1911	368 791
20.11.1851	180 823	21.5.1921	376 485
8.4.1861	310 050	26.4.1931	393 238
11.4.1871	316 042	11.6.1944	419 185
4.4.1881	359 874	29.6.1952	501 415
6.3.1891	370 588	30.6.1962	681 619
1.4.1901	371 023	30.6.1972	826 199

(1) see paragraph on geographic coverage.

3) Other sources

Civil registration is also a long-established tradition in Mauritius and is used very frequently along with migratory statistics as a basis on which intercensal estimates of population are made.

As for demographic surveys, they all relate to family planning exercises. Their sample is always therefore carefully selected and they are never intended even as a secondary objective for population evaluation purposes.

Besides, as will be seen later, standard methods of measuring population have for many years been quite satisfactory and the authorities in Mauritius have felt no need to estimate population by indirect and less accurate methods.

II. CRITICAL STUDY OF SOURCES

All commentators are agreed on the excellent quality of demographic statistical data in Mauritius, which has in this respect no reason to envy the most advanced countries. Among the numerous tables in the demographic yearbooks of the United Nations, Mauritius is the only African country for which statistics are reckoned to be trustworthy.

1) Reference population

Recent censuses in Mauritius take into account all persons present on national territory on the date of the census, whether they are resident or not. It represents therefore the "de facto" population.

Very slight differences can be observed between various statements of the results of the censuses. They are due to the fact that certain sections of the population enumerated separately may or may not have been included in the total figures mentioned. They refer to the European military personnel stationed on the territory and the crews and passengers of ships moored in Port-Louis (a few hundred people in total); only the latter are excluded from the official 1972 census figure.

No mention is made of nationals living abroad and though the annual statistics of people entering or leaving the country by air or sea distinguish between migrants and tourists, they do not permit an evaluation of this number.

2) Geographical coverage

Mauritius is an archipelago which comprises the islands of Mauritius and Rodrigues and several scantily populated islets. The variation in geographical coverage from one census to another is due mainly to Mauritius alienating its sovereignty over one or more small islands, as was the case for example in 1965 when the Chagos islands ceased to belong to Mauritius.

The geographical coverage of censuses and of civil registration has for many years been complete, but civil registration in the "dependencies" has only recently been regularly carried out.

When various publications (not originating from the Central Statistical Bureau) quote official population figures, they often fail to specify whether they refer to the State of Mauritius or only to the island of Mauritius (without its "dependencies"). This is a frequent source of confusion which sometimes creates artificial inconsistencies.

3) Quality

There is abundant evidence of the excellent quality of censuses and civil registration in Mauritius. The coverage rates are very close to 100% (except for marriage registrations which for reasons specific to Mauritian society are very deficient).

Migration is subject to authorisation, which permits a measure of control, but it is likely that many migratory movements escape registration. This is certainly the source of the most important factor of uncertainty in the inter-censal estimates of population.

It must be noted that the quality of the 1952 census has been questioned by H.C. Brookfield who identified in it an under-enumeration of the number of children under seven, in the order of 6.7%, but his method of correction of the figures concerned is open to question and his revised figures never seem to have been used subsequently. C. Xenos also noted a measure of under-enumeration (0.6%) in the 1962 census.

III. CONCLUSIONS

For the 1 January and the 30 June of each year, the Central Statistical Bureau makes an estimate of the population of Mauritius based on the last census and data of civil registrations and migrations. Furthermore, it adjusts all estimates of population made during the decade preceding the census on the basis of the final results as soon as they become available. Estimates as at 30 June for the last twenty-two years are shown in Table 62 below which also lists the figures of the eight censuses carried out in the 20th century.

For 1 January 1975, the Central Statistical Bureau provided the following estimates:

- Mauritius	855 821
- Rodrigues	26 123
- Other dependencies	350

Total	882 294

In advance of the census of 1982 which will certainly entail modifications a posteriori, this estimate is without any doubt the best available at the moment.

Table 62
MAURITIUS - EVOLUTION OF THE POPULATION SINCE 1900, ACCORDING TO
CENSUSES AND INTER-CENSAL ESTIMATES BY THE
CENTRAL STATISTICAL BUREAU

Date	Mauritius	Rodrigues	Other dependencies	Total	Notes
1 April 1901	371 023		3 688	374 711	
31 March 1911	368 791		6 690	375 481	
21 May 1921	376 485		8 394	384 879	
26 April 1931	393 238		9 659	402 897	(a)
11 June 1944	419 185	11 885	1 578	432 648	
29 June 1952	501 415	13 333	1 752	516 500	(b)
30 June 1956	574 938				(c)
30 June 1957	593 070				(c)
30 June 1958	609 518				(c)
30 June 1959	627 249				(c)
30 June 1960	644 743				(c)
30 June 1961	662 368				(c)
30 June 1962	681 619	18 335	1 062	701 016	
30 June 1963	695 641	18 529			(c)
30 June 1964	716 298	18 974			(c)
30 June 1965	735 245	19 438			(c)
30 June 1966	753 276	20 084			(c)
30 June 1967	767 782	20 762			(c)
30 June 1968	781 615	21 832			(c)
30 June 1969	792 893	22 434			(c)
30 June 1970	805 489	23 433			(c)
30 June 1971	816 561	24 041			(c)
30 June 1972	826 199	24 769	366	851 334	(d)
30 June 1973	834 781	25 367	350	860 498	(c)
30 June 1974	845 755	25 709	350	871 814	(c)
30 June 1975	856 516	26 343	350	883 209	(c)
30 June 1976	867 885	26 539	350	894 774	(c)
30 June 1977	881 761	27 058	350	909 169	(c)

- (a) Doubtful results, census having taken place a few weeks after a hurricane.
- (b) Including European military personnel, but not including the crew and passengers of ships moored in Port-Louis.
- (c) Inter-censal estimate as at 30 June.
- (d) Not including the Chagos archipelago which has not been a dependency of Mauritius since 1965.

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- the official census publications (Ministry of Economic Planning and Development, Central Statistical Office, Rose Hill)
- the official statistics of population movements: Ministry of Economic Planning and Development, Central Statistical Office, Yearbook of Statistics (annual), then bi-annual Digest of Statistics (twice yearly since 1966)

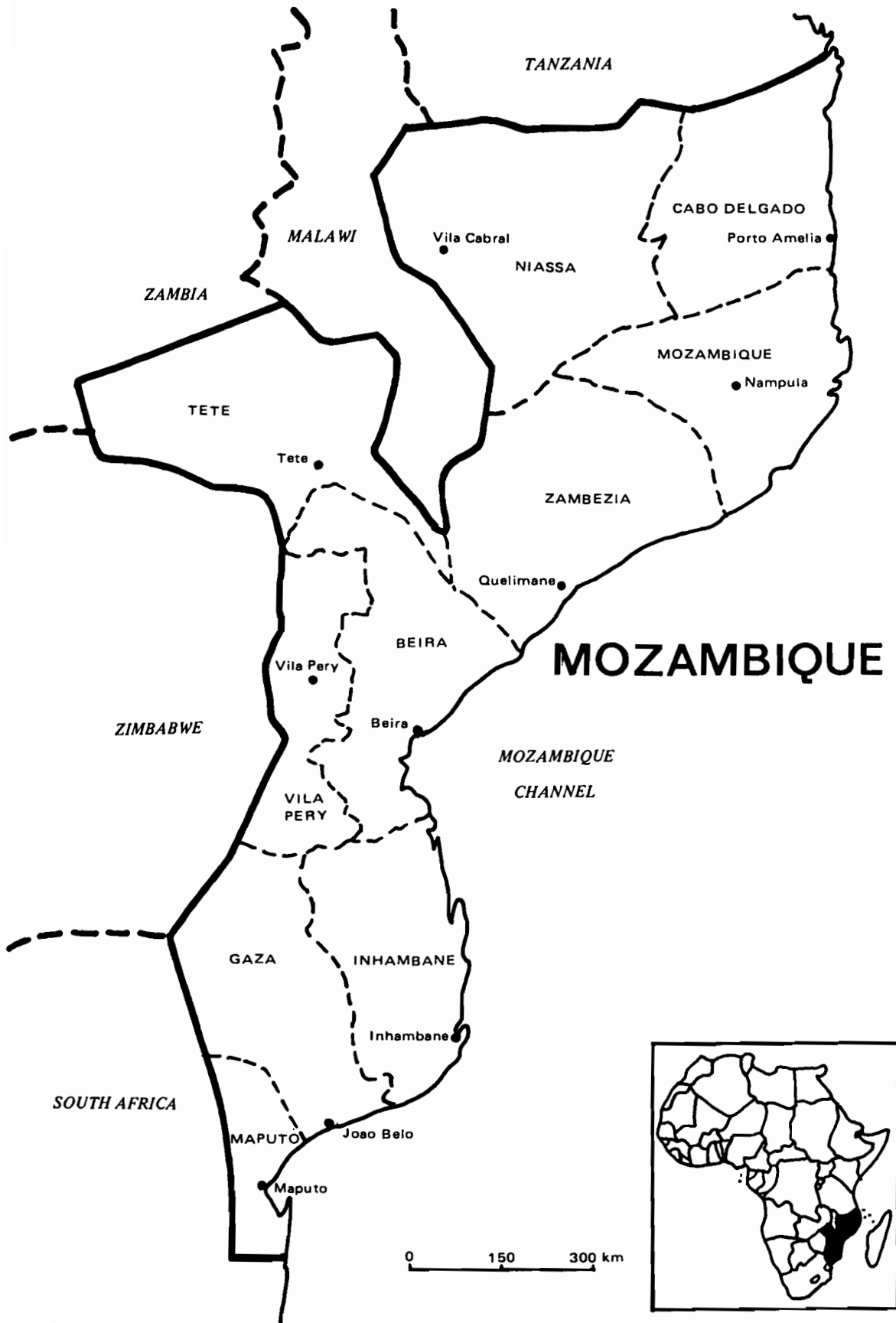
* Documentation compiled by D TABUTIN

MOZAMBIQUE

Carlos A. Da Costa Carvalho

Marcelo Ferreira Da Silva

DECEMBER 1979



M O Z A M B I Q U E

I. DATA SOURCES

1) Historical estimates

Although some enumerations were carried out during the last century, they applied only to certain regions of the country and did not conform to any statistical requirements. The "Estatistica dos Rios de Sena, 1806" [1] is an example. The reasons for this state of affairs stem mainly from the fact that at the time the Portuguese only controlled part of the territory of Mozambique. Indeed, around 1830-1840, according to A.H. de Oliveira Marques, "From Cabo Delgado to Lourenço Marques, occupation of the coast itself was not continuous: going from north to south, it stopped at Angoche whose sultan resisted the Portuguese stubbornly, starting again at Quelimane down as far as the bay of Lourenço Marques. From Cabo Delgado to Angoche, there were only about 40 kilometres of coastal strip in the hands of Europeans; from Sofala to Lourenço Marques, the territory under control was more extensive, principally in the river valleys. However, all along the Zambesi there was considerable penetration into the interior where Portuguese occupation was well established as far as Tete and even beyond, nearly 500 kilometres from the coast" [5].

Shortly before 1855, the population had been estimated at 300 000, "...the truly Portuguese population, that is, obedient to the authority of the government" [3]. The first findings relating to the population broken down into racial types date from 1900 and show a total of 735 152 persons, comprising 730 702 blacks, 3 014 whites and 1 436 mixed, the figures for the districts of Lourenço Marques and Quelimane not having been included.

2) Administrative censuses and other administrative sources

Subsequently, and up to 1928, several estimates with no pretensions of a scientific nature, were made by the administrative authorities; the methods used were truly empirical and means too limited.

Other estimates were made in 1920, 1923 and 1926 (the one in 1920 did not include the population of territories administered by the Niassa Company), giving respectively figures of 3 028 761, 3 530 377 and 3 523 611 (1).

(1) Data extracted from the introduction to the third volume of the Census of 1950.

3) Statistical enumerations

The year 1928 marked, in the history of statistics on Mozambique, the start of censal operations because it was in this year that the first census of "non-indigenous" population was carried out, an exercise which preceded by two years that of the indigenous population.

In 1940, the first general census of population was carried out and was repeated every ten years until 1970, which would lead to the supposition that the Government of the People's Republic of Mozambique would attempt a similar operation in 1980.

The following table shows the evolution of the population of Mozambique since 1928, according to the various somatic types present.

Table 63
MOZAMBIQUE - POPULATION DEVELOPMENTS SINCE 1928
BY RACIAL TYPE

Year of Census	Somatic type	Black	White	Mixed	Other		Total
					Indians	Asiatic	
1928		-	17 842	8 357	8 475	896	35 570
1930		3 849 977	-	-	-	-	3 849 977
1935		-	23 131	13 259	8 304	1 056	45 750
1940		5 031 955	27 438	15 641	9 147	1 449	5 085 630
1945		1 845	31 221	15 784	9 700	1 565	60 115
1950		5 651 306	48 213	25 149	12 630	1 613	5 738 911
1955		4 554	65 798	29 873	15 235	1 945	117 405
1960		6 455 614	97 245	31 455	17 241	2 098	6 603 653
1970		7 929 432	162 967	50 189	22 531	3 814	8 168 933

Note: In 1928 and in years ending with a 5, the figures related to the non-black population.

4) Sample surveys

With the exception of the agricultural surveys carried out since 1961, by the "Missao de Inqueritos Agricolas de Moçambique" in the context of the world agricultural census under the auspices of the FAO, no other information has been found relating to this source of data.

II. CRITICAL STUDY OF SOURCES

For the purposes of the censuses, the country was divided into zones whose boundaries coincided with administrative divisions, each zone being sub-divided into sectors. The responsibility for collection resided, in most regions of the country, with the administrative authority, representing the colonial power. Though "de jure" and "de facto" criteria were used in the various censuses, that which was used for the black population (which represented more than 97% of the population enumerated in 1970), was the "de facto" population (present).

Any attempt to study the evolution of population over time must take into account the fact that the definition of the territory of Mozambique, as it is today, was not finalised until the end of the last century (following an agreement signed in 1891, between the Portuguese and the British) and that "pacification" campaigns were pursued until 1918.

Furthermore, the dispersal of population, the absence of lines of communication within certain regions as well as their poor administrative representation, the state of war prevailing in part of the country since 1964, and the general under-development were factors which beyond doubt exerted a non-negligible influence on the quality of the data.

III. CONCLUSIONS

The evaluation of population figures for Mozambique is rendered difficult, not only because of the reasons elicited above, but also because a significant group of adults of male sex migrate traditionally, for reasons of an economic nature, towards neighbouring countries.

Thus, according to M. T. Galba, "...it can be said that in 1900, more than 80 000 natives of Mozambique had work of a permanent nature in Transvaal, a figure which in our days must be multiplied by two, in view of the increase in clandestine emigration"; thus, in 1945, 163 294 workers native to Mozambique were enumerated in Transvaal. This concerns the official figure relating to natives with a legalised status. But how many were not registered by the authorities? And what of those in Natal, Cape Province, Southern Rhodesia, Nyasaland, Tanganyika and other territories?" [4, p. 190].

Later, according to data in the Area Handbook for Mozambique, transcribed by R. Pelissier "...it is estimated that 300 000 natives of Mozambique worked in South Africa in 1967, and 150 000 in Rhodesia" [6].

In addition, after 1964, a new factor intervened rendering more problematic attempts to estimate the population of Mozambique: the war of liberation. Once again according to R. Pelissier, "...the figures of the High Commissariat of the United Nations for refugees are therefore inadequate since the bastion of white English speakers is not taken into account. This organisation counted only 30 380 refugees belonging to Mozambique on 30 June 1971; 25 000 in Tanzania, 5 000 in Zambia, 330 in Kenya and 50 in Swaziland. In its inaccuracy, the figure is lower than that for Angola and for Guinea, which is already a worrying sign. It would not be far wrong to consider the true figure for refugees in neighbouring countries to be well in excess of 60 000" [6].

As the non-black population has only represented a small proportion of the total in the various censuses - between 1% and 3% - it has been judged preferable to reconstitute only the figures for the black population.

To this end, the following figures have been added to the enumerated totals: 100 000 in 1930, 200 000 in 1940 and 1950, 300 000 in 1960 and 600 000 in 1970, attempting to take account in this way of the information presented above relating to the probable number of people living outside the country.

The figure suggested for 1 January 1975 was determined by applying to the population enumerated in 1970 the mean annual intercensal increase rate for the period 1960-1970.

The table below presents the estimated figures for the black population relating to the period 1930 to 1975.

Table 64

MOZAMBIQUE - ESTIMATES OF THE BLACK POPULATION,
1930 TO 1975

YEAR OF CENSUS	POPULATION (rounded)
1930	3 950 000
1940	5 230 000
1950	5 850 000
1960	6 750 000
1970	8 530 000
1.1.1975	9 357 000

Bearing in mind the poor quality of censuses [2] and the fact that civil registration only covered a modest part of the country as it functioned, at least satisfactorily, in towns and the seats of "councillors" or "circumscriçoes", it would appear that immediate priority should be given to the following:

- the carrying out of a general census of population, making reliable data available at last;
- the reorganisation and progressive extension of civil registration;
- the carrying out of sample surveys allowing, in particular, an accurate insight to be gained into the levels of the principal indicators of population movements.

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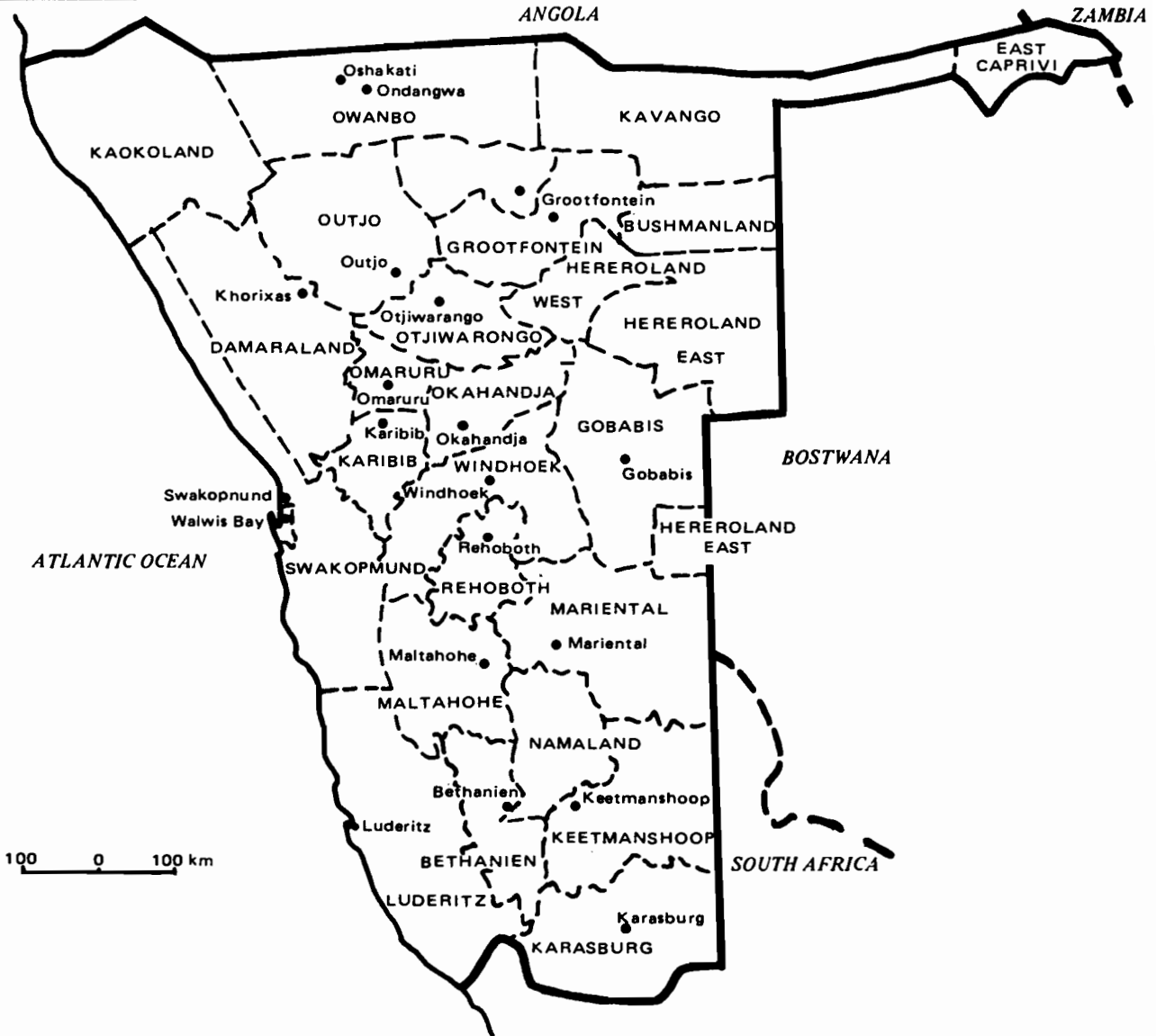
NAMIBIA

N.B. Gouws

JULY 1979



NAMIBIA



N A M I B I A

I. DATA SOURCES

1) Total population

During 1921 (3 May 1921) the first official population census of South West Africa was conducted. Prior to that date partial censuses had been conducted, e.g. a census of the white population taken in 1903, when a total of 4 640 individuals were counted, but the accuracy of these earlier counts can only be a matter of conjecture.

It is generally accepted that the Bushmen were the first inhabitants of the territory, followed by the Hottentots and the Damaras. Before 1880, very few whites had visited the territory, these being mainly missionaries, hunters and merchants. Shortly after that year a German Merchant named Luderitz purchased a strip of land along the coast and placed this acquisition under the protection of the German Empire. Thereafter German control was extended gradually but never reached beyond the southern and central portions of the territory. Since the First World War the administration of the territory has been in the hands of the South African Government. The discovery of diamonds in 1908 led to the immigration of an unknown but considerable number of whites and also provided employment opportunities for the already-resident population.

To date six censuses of South West Africa as a whole have been conducted by the South African Government. Particulars of these censuses are as follows:

Table 65

NAMIBIA - POPULATION EVOLUTION ACCORDING TO CENSUSES

Date	Population	Annual inter-censal growth percentage
3 May 1921*	228 916	2.30%
5 May 1936*	320 457	1.23%
7 May 1946*	362 464	3.68%
8 May 1951*	434 081	} 2.01%
6 September 1960	526 004	
6 May 1970	761 562	3.89%

See paragraph II.1

The accuracy of these figures will be discussed later. Apart from these censuses no other surveys which give an indication of population size have been conducted.

2) Births and deaths

Despite serious efforts on the part of the registering authorities to improve registration coverage, a large proportion of births and deaths are never registered. The result is that current birth and death statistics are not available. Furthermore, no sample surveys which could give an indication of fertility and mortality have been conducted in the territory.

3) Migration

Over the years migration between the Republic of South Africa and South West Africa has not been subject to any form of frontier control. Hence no South West African migration statistics are available.

II. CRITICAL STUDY OF CENSUS RESULTS

1) General

At the outset it should be mentioned that at the 1951 and earlier censuses, the population of the northern sector of South West Africa (i.e. the districts of Eastern Caprivi, Kaokoveld, Kavango and Ovambo) was, for various practical reasons such as scattered population, difficult terrain, lack of transport, etc., not enumerated, but was estimated as accurately as possible by the Native Commissioners. At the 1960 census the population of this sector accounted for 49 per cent of the total population. As will be noticed from the figures furnished in paragraph I.1 the average annual population growth rate between the 1936 and 1946 counts (1.23 per cent) and the 1946 and 1951 counts (3.68 per cent) appear to be incorrect. This can be explained by the fact that there very obviously was a serious underestimation of the population of the northern sector at the 1946 count. When the average annual growth percentage is calculated between 1936 and 1951 (i.e. 1946 is ignored), a figure of 2.01 per cent is obtained which accords with the 1921-1936 and 1951-1960 percentages of 2.30 and 1.07 respectively.

The 1970 census, on the other hand, appears to be the most complete of the six censuses as the growth rate between 1960 and 1970 was 3.89 per cent while fertility, mortality and net migration gain were at normal levels.

2) Reference population

The six censuses referred to above all related to the de facto population of South West Africa, foreign visitors included. At the 1970 census, residents who were abroad on census day were enumerated on their return, if such return was within three months of census day. At all previous censuses such persons were not enumerated at all.

3) Geographical coverage

a) General

As has been mentioned, the 1960 and 1970 censuses covered the whole of South West Africa, whereas at earlier censuses the population of the northern sector was estimated. Walvis Bay, which is territory of the Republic of South Africa, was included in the population figures for South West Africa for administrative purposes at all past censuses. During 1977, however, Walvis Bay was again placed under direct South African administration.

b) Definitions of "urban" and "rural"

For purposes of the 1970 census, "urban" was described as follows:

- all cities and towns with some form of local government,
- all areas of an urban nature, i.e. areas with urban amenities (water electricity, etc.) but without local government. This group mainly comprises mine townships such as Oranjemund and Rosh Pinah in the Luderitz district.

All other areas were regarded as rural. Approximately the same urban/rural definitions were used at earlier censuses.

c) Nomads

The most nomadic people in South West Africa are the Bushmen. At the 1970 census, this population group only accounted for 3 per cent of the total population and no particular enumeration problems were noted.

4) Factors which may have influenced the quality of the data

As has already been mentioned, the fact that the figures for the northern sector were estimated at earlier censuses would have affected the quality of the results. Apart from the normal factors which influence the quality of census data in any country (e.g. under-enumeration of infants, a measure of distrust regarding the objects of the census and the confidentiality of information furnished) no other specific detrimental factors were encountered at South West African cen-

suses. No post-censal surveys which could substantiate census results have been undertaken and partly as a result of the under-registration of vital events very little could be done in the way of tests on coherence between various sources.

III. POST-1970 CENSAL DATA

It is estimated that on 1 January 1975 the population of South West Africa numbered 863 000. This number is comprised of 12 different population groups, each with its own distinct customs, mode of life and language. These groups are listed below and the percentages in brackets reflect the proportion of each group to the total population of 863 000:

Table 66

NAMIBIA - BREAKDOWN OF POPULATION BY ETHNIC GROUP
AT 1ST JANUARY 1975

ETHNIC GROUP	PERCENTAGE
Ovambos	46.6
Whites	11.3
Damaras	8.8
Hereros	6.6
Kavangos	6.5
Namas	4.4
Coloureds	3.8
East-Caprivians	3.4
Bushmen	3.0
Rehoboth Basters	2.2
Kaokovelders	0.9
Tswanas	0.5
TOTAL	100.0

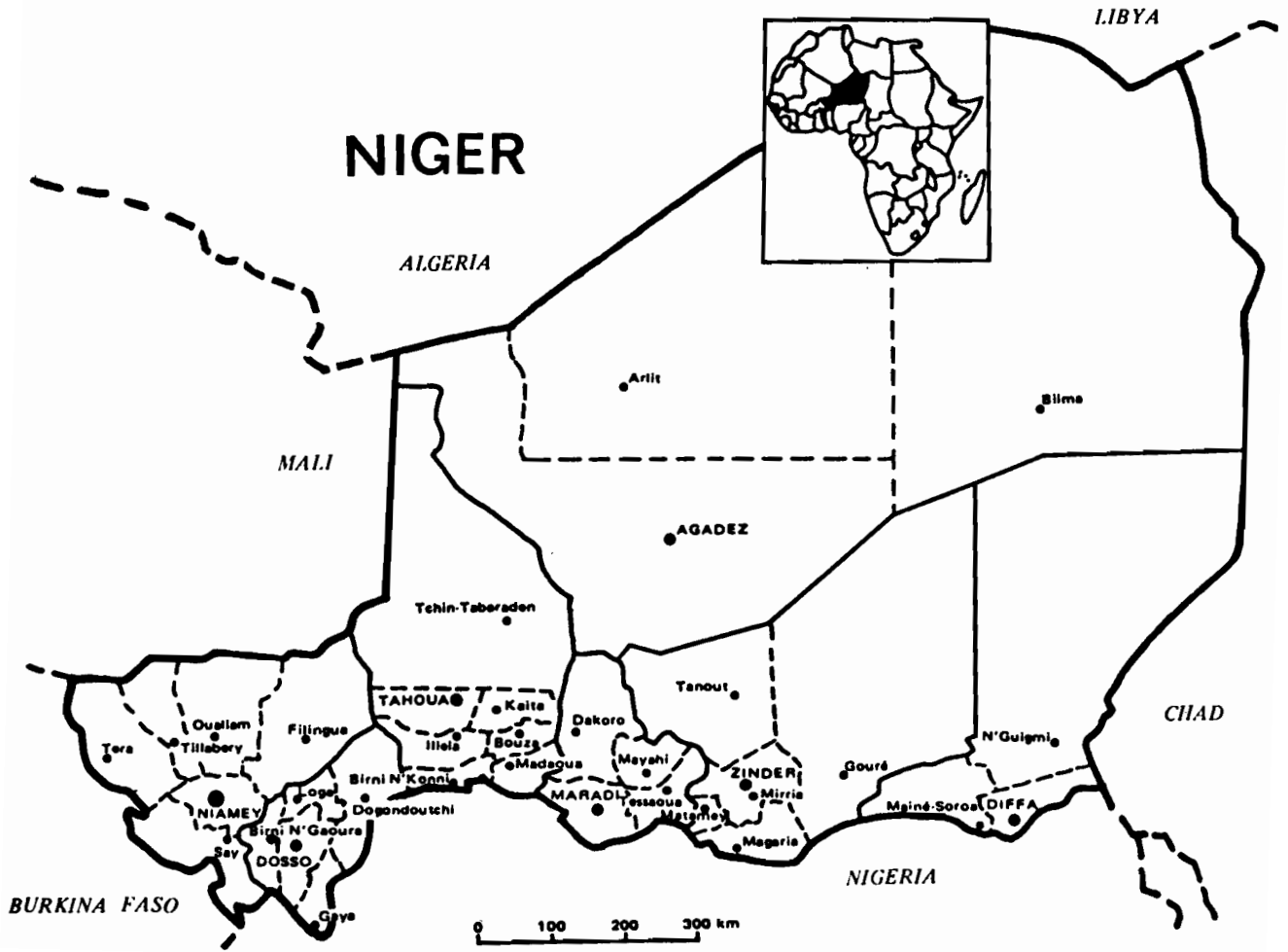
A further 2.0% of the population belongs to population groups other than those listed above.

In view of the impending independence of South West Africa, the Department of Statistics in Pretoria will shortly no longer be responsible for the statistics of that country. It is therefore idle to discuss improvements in the field of demographic data collection.

NIGER

Maité Roset-Casenave

M A Y 1 9 7 9



N I G E R

I. INTRODUCTION

The situation of the Republic of Niger with respect to demographic data is similar to that of many other French-speaking countries in Africa: until recently, very little reliable data were available; administrative censuses and a sample survey, now obsolete, have for twenty years constituted the only sources for the various population estimates and projections.

The first general census of population took place in October 1977; a second sample survey for 1980 is under consideration.

Niger covers an area of 1 187 000 km² of which three quarters is desert or semi-desert populated by pastoral nomads and caravaners; the zone situated roughly to the south of the 15th parallel constitutes the only fertile band where the sedentary population is concentrated.

The present day frontiers of the country (cf. map) were fixed shortly before 1930, and contain six principal ethnical groups:

- 3 sedentary groups: the Zarma Songais, the Haoussas, and the Kanouris;
- 3 nomadic groups: the Touaregs, the Peulhs, and the Toubous.

The main towns are also concentrated in the southern part of the country with the exception of Agadez which is destined to grow rapidly with the increasing exploitation of various mineral resources.

II. DATA SOURCES

1) Historical estimates

Enumerations of population were organised very early on by the colonial authorities and many of the original documents are to be found in the "Archives Nationales du Niger" (1).

(1) It must be noted that the recently created "Service des Archives Nationales" does not possess all the official records of Niger, a large part of which are to be found in Senegal.

The series of annual administrative censuses since 1920 (the year when Niger became an autonomous state) and some previous dates are available.

It has not been possible to find any other previous estimates of the population of Niger apart from the administrative censuses and research has been both hasty and limited due to the lack of records.

2) Official Sources

a) Censuses

The former administrative censuses have been somewhat arbitrarily dissociated from more recent ones (since 1960) though they do not differ in either their aims or methods.

After the independence of Niger, the Ministry of the Interior has continued to carry out censuses through its representatives in the different administrative sub-divisions.

The purpose of these censuses remains the collection of taxes; their frequency is very irregular (every 2 to 5 years) and their timing varies among the regions.

It is these statistics which, up to the general population census in 1977, provided the data base for population measurement. The most recent have given rise to a publication of the Ministry of the Interior.

b) Civil Registration

A registry has officially existed in Niger since 1956, but its observance remains very poor especially in rural areas.

Up to now, there has been no attempt to make use of the registrations or even to centralise documents.

A reform of the Civil Registry to be progressively implemented from 1979 onwards will provide for the centralisation of registrations by means of a monthly return completed at district level, and sent to the central administration.

The use of this information for demographich purposes will thereafter be assured, notably by the "Direction de la Statistique".

Simultaneously, a public information campaign to encourage everyone to make the necessary registrations at the office nearest to their place of residence is to be undertaken.

It is nevertheless to be feared that registration will, for a long time, remain quite insufficient to allow for an annual adjustment of the population figure.

3) Statistical Censuses

The Republic of Niger carried out its first general population census in October/November 1977. Provisional results are now available [28] and give the distribution of the resident population by sex and administrative sub-divisions: regions, districts and urban centres.

4) Demographic Sample Surveys

Two demographic surveys have been carried out in Niger: one for the sedentary zone and one for the nomadic zone.

The first one took place in 1959-1960 [14] in the sedentary zone which covers the south and the south-east of the country (see map) ; the town of Niamey was excluded from the survey as it had been the object of an exhaustive census in 1959.

The aims of this survey were to provide the following:

- an estimate of the sedentary population of Niger;
- a distribution of this population according to its principal demographic characteristics;
- an estimate of conventional demographic ratios;
- a knowledge of the basic social structures: households - compounds;
- a documentary source for the agricultural survey which was to follow.

The survey in the nomadic zone took place in 1963-1964 [15]; this survey was somewhat experimental as it was the first to deal with non-sedentary populations.

Apart from establishing an appropriate methodology, its aims were as follows:

- a demographic study of the population;
- a study of economic movements;
- a study of food consumption;
- a quantitative and qualitative study of livestock.

Following a preliminary survey, the project revealed itself to be unpracticable and very costly, and consequently the survey was limited to the area of Tahoua and its immediate surroundings.

Even in the opinion of its proponents, the results obtained suffered from the difficult conditions under which information was collected and should be considered as orders of magnitude rather than precise values; furthermore, the initial objective, which was to get an estimate of the nomadic population in Niger, was abandoned in the preparatory stage of the survey, so that these results cannot be used for the present study.

For the record, it should be mentioned that a third more recent survey was carried out (in 1970-1971) on a sample of the population of Niamey and on a sample of the rural population of the Maradi and Zinder regions [17, 20, 23, 24, 25]; this KAP-type (1) survey studied 2 000 women in Niamey and 1 500 women in rural areas.

Preliminary work has permitted an estimation of the population of the town of Niamey in 1970, but the results obtained do not provide any data on the total population figure of Niger at that date.

5) Other Sample Surveys

In the context of the socio-economic account of Niger undertaken by the Government in the 1960s, two other nation-wide surveys should be mentioned:

- the agricultural survey of Niger [8] which took place immediately after the demographic survey and which provides some demographic information on the farming population;
- the study of food consumption in Niger [12]; this survey is complementary to the demographic survey of 1960 concerning sedentary zones. Unlike the study in nomadic zones, the former was divided into two parts. The report contains some general demographic data on the families of the sample.

III. CRITICAL STUDY OF SOURCES

Of the previously mentioned sources, only three provide data for the country as a whole:

- the administrative censuses;
- the demographic survey of 1960;
- the general population census of 1977.

These three sources will be studied in turn in order to assess their reliability.

1) The Administrative Censuses

a) Past Censuses

Through force of circumstance, these censuses could not be carried out in the whole country every year, and the annual figures conscientiously provided by the administration must often have been estimates.

Great accuracy is not to be expected of these data which it has not been possible to correct and which will be used in their crude form up to the 1960s.

(1) Knowledge, Attitudes and Practice.

A total figure of the population of Niger was published in each of the volumes of the "Annuaire Statistique de l'Afrique Occidentale Française" (Annual Statistical Yearbook of French West Africa); this published figure corresponded to the size of the population within the then current boundaries and as these boundaries moved several times, it is difficult to make comparisons between the publications.

For the figures quoted at the end of this chapter, the authors have endeavoured, as far as possible, to represent the population within the present frontiers of Niger: for example, between 1932 and 1947 the colony of Upper-Volta having been abolished, the Dori and Foda N'Gourma areas were linked to Niger and included in its census; their figures have therefore been subtracted from the total population.

b) Recent Censuses

The customary drawbacks in this kind of operation are to be found in Niger which is no exception to the general rule.

* The population concerned is the "de jure" population, that is to say the population registered for tax purposes; the non-taxable portion of the population also being counted nationally under the headings "children" and "old people".

Migrants moving within the national frontiers are still counted according to their village of birth even if they have been living for several years in another part of the country and more especially in the towns, which explains why the urban population figure given by administrative censuses is much lower than the "de facto" population.

Emigrants continue to be registered in their village of birth where their families pay taxes for them for several years (at least 3 years).

Immigrants who have resided in the country for several years also pay taxes and are therefore counted.

* Administrative censuses cover the whole territory and include the nomadic populations.

* Several factors lead to an under-estimation of the population in such a census:

- it is in the interest of any individual inclined to evade tax to avoid being enumerated: this is doubtless frequently the case with emigrants, foreigners, and nomads; even among the sedentary population, certain heads of household conceal the existence of some members of their families.
- because of the difficulties of the terrain, the bad condition of roads, the great distances to cover and the lack of staff, enumerators are often forced to collect information from some representative of the village or tribe, and are therefore unable to check their information on the spot.

- finally, the irregular occurrence of these censuses (up to 10 years apart) and the time over which they are spread makes it impossible to provide information on the whole country for any one point in time.

The use of such censuses for demographic purposes requires numerous adjustments which have been attempted several times in Niger; this subject will be returned to later.

2) The Demographic Sample Survey of 1960

This was the first and only survey to have taken place in Niger for strictly demographic purposes. Its particular interest lies in its providing data for nearly the whole country; in fact, the universe studied was 2 700 000 people out of approximately 2 900 000 living in the country at that date.

The sample taken represented 3% of the population divided into 6 strata.

Results refer only to the "de jure" population.

The methodological part of the report of the survey being very brief, no mention was made either of the difficulties encountered during the operations or of the quality of the data collected.

3) The General Population Census of October/November 1977

At the end of 1977, the Republic of Niger carried out its first general population census. This encompassed the whole of the population living on the territory at the time of enumeration, natives of Niger living abroad not being included.

Bearing in mind the difficulty of counting the nomadic population living in the pastoral zone, the region of Agadez was enumerated in three stages, district by district, in July, August and December 1977.

In the country at large, the operation lasted about one month, because of the unfavourable conditions for collection in the field:

- difficulty in recruiting census agents of sufficiently high educational standard;
- long distances to be covered on roads in bad condition;
- difficulty in locating nomadic settlements and families; it very often proved necessary to have recourse to a guide familiar with the region.

Enumerators met with a favourable reception everywhere even if, in some cases, heads of household clearly concealed the existence of wives and children of their households.

At the time of publication of the provisional results [28], an adjustment to the figures was made to take account of the nomads who were known to have avoided enumeration and of the wives and daughters who had been concealed on purpose.

A post-enumeration check was made about one month after the census and was carried out in 1% of the enumeration zones (33 out of 3 320 zones).

No clear conclusion was able to be drawn as the size of the areas concerned turned out to be too variable and their number insufficient.

4) Consistency between the different sources

a) Administrative Census

Several population estimates and projections have been made on the basis of these censuses:

* "Annuaire Statistique 1962 et 1967" (Statistical Yearbook): In order to give total figures year by year, the authors have extrapolated and interpolated the results available to them for each village or tribe. By this method they obtained for 1960 a figure near to that of the demographic survey:

Demographic survey 1960: 2 876 000

Statistical Yearbook 1960: 2 864 000

The annual growth rate observed lay between 2.6% and 2.7%.

** Estimate of the population of Niger [11]: A projection of the population of Niger up to 1978 has been made on the basis of administrative censuses carried out between 1963 and 1968. It is those estimates which have in part been used in the Annuaire Statistique of 1969 and which stood until the general census of 1977.

A differential rate has been used for the various regions. Taking account of the growth observed between two counts in each region, for the country as a whole, the annual growth rate must have increased from 2.67% in 1964 to 2.79% in 1978.

The population thus projected for 1975 amounted to 4 600 000.

*** The Population of the Republic of Niger - Estimate for 1973 [33]: This estimate also uses the results of the two most recent administrative censuses by canton. The author has deduced an annual growth rate by canton and projected the population up to 1973 by adding a factor of 3% to the results of the last census to take account of an under-estimation in the observed population.

In this way, he arrived at a total population of 4 304 000 in 1973 while the figure obtained for 1973 in the study described above (**) is 4 356 000. The mean annual growth rate deduced by the author was 2.2%, an estimate which he thought would be valid for the next five years, that is up to 1978.

**** Regional Accounts of the "Direction du Plan" (Planning Department) [5]: Each regional planning department established an account at the end of 1976: the demographic account is also based on the administrative censuses, but a finer analysis of growth rate has been undertaken; the authors have deduced from this separate rates for rural and urban areas and for nomadic and sedentary populations.

A mean growth rate by region was calculated as well as an average national growth rate of 2.8%.

The results of the pilot census carried out in preparation for the general census of 1977 had shown up a gap of approximately 20% between the administrative and the enumerated population; the authors of the regional accounts corrected the population of the last administrative census by applying an increase of 20% to the regional totals. It is to this new population figure that they applied the growth rates previously mentioned.

The population of Niger assessed in this way amounted to 5 122 000 at the end of 1976, while at the same date the estimate mentioned above (**) indicates 4 727 000, with a growth rate of 2.77%.

b) The Demographic Survey of 1960

After a study on fertility and mortality, the authors had estimated an annual natural increase rate of 2.5%, which seems a little low in relation to what had been observed between two administrative censuses (cf. estimation presented above) covering the same period.

On the assumption that this rate is maintained for several years and that the age structure remains stable, projections have been made for the population in the survey zone; by adding to this the population which had not been accounted for, subject to the same growth rate, a population figure of 4 181 000 is obtained for 1975.

c) The General Population Census of 1977

The population of Niger enumerated in October/November 1977 amounted to 5 098 000 persons.

By retaining the assumption of an annual mean growth rate of 2.78% (1) for the two years prior to the census, the population of Niger at the end of 1975 is estimated to have been 4 826 000.

(1) Rate observed in the estimates noted in section **.

Table 67

NIGER - POPULATION SINCE THE BEGINNING OF THE CENTURY

YEAR	TOTAL POPULATION*	REMARKS	YEAR	TOTAL POPULATION*	REMARKS
1913	960 000) Fluctuating frontiers. It is difficult to know exactly to which territory these figures correspond. Current frontiers	1946	1 949 218	Demogr. survey
1914	894 967		1947	2 017 350	
1915	845 886		1948	2 040 062	
1920			1949	2 070 664	
1921	1 084 043		1950	2 126 322	
1922	1 157 460		1951	2 163 784	
1923	1 149 295		1952	2 227 506	
1924	1 222 049		1953	2 277 391	
1925	1 197 075		1954		
1926	1 366 936		1955		
1927	1 427 536		1956	2 547 881	
1928	1 441 413		1957	2 628 685	
1929	1 473 950		1958	2 702 966	
		1959	2 781 562		
1930	1 490 529		1960	2 876 000	
1931	1 542 801		1961	2 948 406	
1932			1962	3 040 673	
1933			1963	3 332 258	
1934	1 480 000) Origin of these figures unknown	1964	3 421 357	
1935	1 492 000		1965	3 513 111	
1936	1 465 013		1966	3 607 898	
1937			1967	3 705 370	
1938	1 558 372		1968	3 805 826	
1939	1 576 961		1969	3 909 372	
1940	1 618 555		1970	4 024 000	
1941	1 659 532		1971	4 125 850	
1942	1 680 452		1972	4 243 000	
1943	1 744 181		1973	4 355 769	
1944	1 829 888		1974	4 475 963	
1945	1 869 558		1975	4 599 785	
			1976	4 727 292	
		1977	5 098 427	R. G. P. 1977	

* From 1913 to 1953: Official Records figures

From 1956 to 1976: Adjusted Administrative Censuses

IV. CONCLUSIONS

1) Results

Table 67 shows the population figures for Niger that it has proved possible to collect. Despite their apparent accuracy, they are in most cases estimates resulting from adjustments made by different methods.

From these figures an attempt has been made to determine the evolution of the population of Niger since 1915, the results of which are shown in Table 68.

Table 68

NIGER - PROBABLE EVOLUTION OF THE POPULATION SINCE THE
BEGINNING OF THE 20TH CENTURY

(Situation at 31st December each year)

YEAR	POPULATION	YEAR	POPULATION
1915	850 000	1950	2 200 000
1920	1 000 000	1955	2 500 000
1925	1 280 000	1960	3 200 000
1930	1 490 000	1965	3 550 000
1935	1 500 000	1970	4 250 000
1940	1 700 000	1975	4 800 000
1945	1 900 000		

A stagnation is observed between 1930 and 1935, the cause of which cannot be easily determined since data are lacking for this period.

The figure shown for 1960 is slightly higher than the result of the demographic survey but it is believed that this study underestimated the nomadic population outside the scope of the survey.

Holding to the hypothesis of a mean annual growth rate in the range of 2.77% and 2.78% between 1975 and 1977, the population of Niger would have been 4 698 200 by 1st January 1975.

2) Sources

In conclusion, the recommendations for the improvement of the sources of demographic data are as follows:

- encouragement of the population to cooperate in Civil Registry to increase its usefulness;
- regular statistical censuses with improvement in data collection, notably among the nomadic populations;
- study of the principal ratios by means of single-round or multi-round sample surveys;
- a specific study of migration about which little is known at present.

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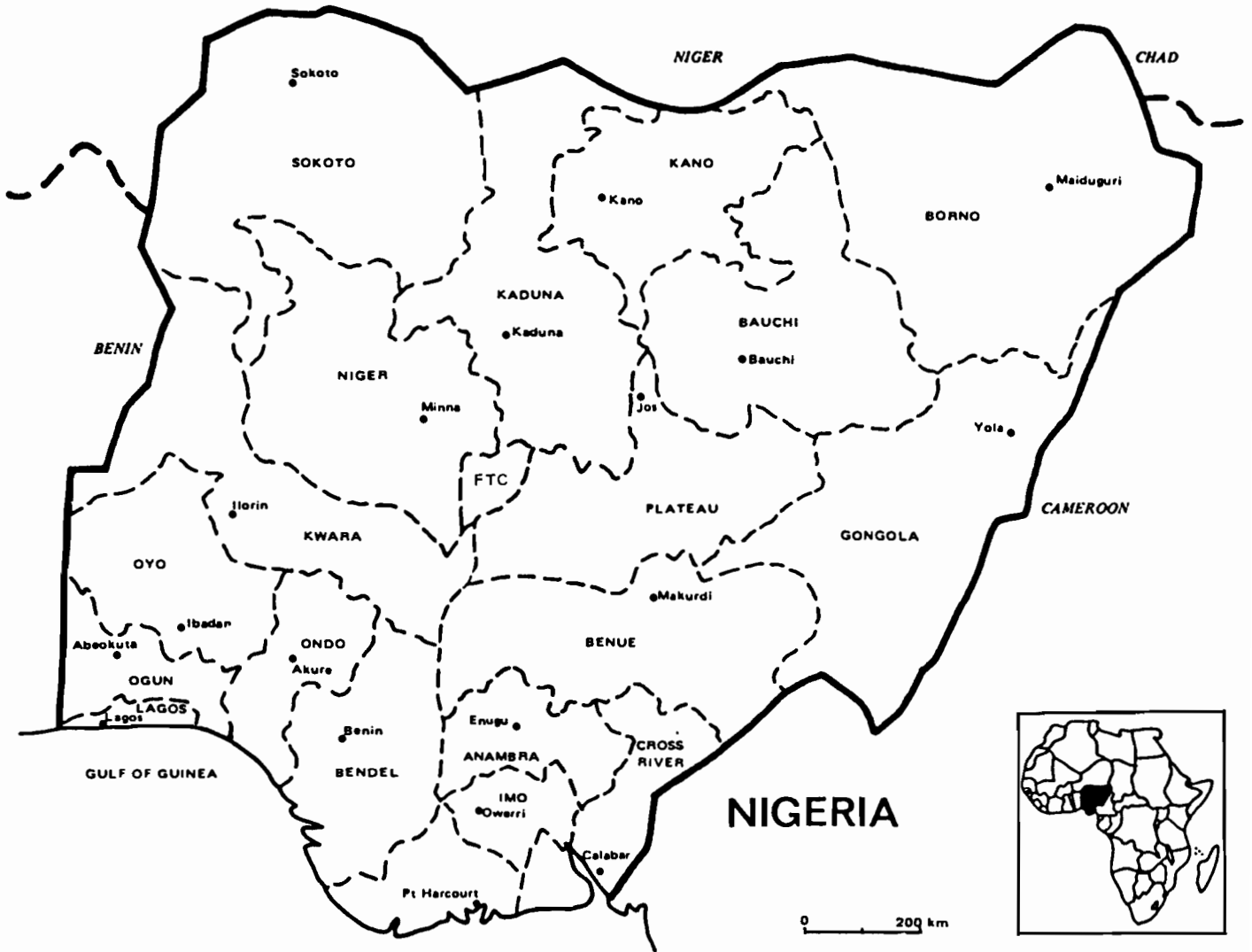
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NIGERIA

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MAY 1979



N I G E R I A

I. PRE-SECOND WORLD WAR ESTIMATES

Estimates of the population of the largest region of the country - Northern Nigeria - exist as far back as the middle of the 19th century. Heinrich Barth (1857) estimated the population of Northern Nigeria between 30 and 50 million. Lugard accepted these as correct estimates but in 1900 he also estimated the population of the same region at nine million. However, as Prothero [12] has pointed out, acceptance of both these estimates implies depopulation in Northern Nigeria during the period of 50 years. Kuczynski [6] was also highly critical of Lugard's standpoint; he concluded that these early population estimates were grossly exaggerated.

Estimates of the population of Nigeria for the first half of the 20th century are provided by the census returns of 1866 and 1868. Decennial censuses were taken in Lagos in 1871 and 1881 followed by a count in 1901.

In 1911, an attempt was made for the first time to broaden the coverage of the population in order to provide an estimate of the population of the country as a whole. In 1901, estimates of the population of Northern Nigeria ranged between 6.7 and 30 million people; the wide range amply suggests that these estimates were no more than mere guesses. The de facto census of 1911 was probably confined to government stations in Northern Nigeria while in the South, estimates were made on the basis of the best data available in each district. In total, 17 133 689 people were reported for the country - 7 858 689 and 9 275 000 for the Southern and Northern provinces respectively.

In 1921, an attempt was made to widen the coverage of the census operation: it was conducted on a de facto basis but in two parts - the township census and the provincial census. The township census was conducted on a single day i.e. 24 April, 1921 and the provincial census lasted two months (March to May, 1921). The township census, which was confined to non-natives, was reported to be fairly complete and that the results might be taken as "nearly" correct. In the case of the provincial census, the enumeration was successfully conducted in only very few areas. The result of the census was as follows: 8 371 459 and 10 259 982 for Southern and Northern provinces respectively (i.e. 18 621 441 for the entire country). Cox [4] in his comments on the 1921 census concluded that the 1921 census of Southern Nigeria was reduced to a mere compilation of existing data. With respect to Northern Nigeria, the report stated that "whilst it is not pretended that the count made of the natives in the provinces was anything more than approximately accurate, the statistics, nevertheless, furnish a great amount of valuable information" [3]. According to Talbot, [13] while the township census was about 95 percent accurate, the reported statistics from the provincial census could only be regarded as approximate.

In 1931, another country-wide census was conducted, but this was hampered by many difficulties, including the severe economic depression of the early thirties and the Aba riots of 1929 that spread to parts of Owerri, Onitsha and Calabar provinces. Under these circumstances, the attempt to count the population in these areas was abandoned on the order of the Governor who ruled that the census in the South should consist merely of a compilation of existing records with an intensive census of the Egba division and of Lagos. The 1931 census was much less successful in the South than in the North; as a result the census of the Southern provinces also became "a mere compilation of existing data". A total population of 19 928 171, comprising 11 434 924 and 8 493 247 was reported for the Northern and Southern provinces respectively.

II. THE 1952-53 CENSUS

The second world war obstructed the conduct of any census in 1941. In 1952-53, the colonial government planned and conducted what turned out to be the first comprehensive census on a de facto basis in Nigeria. This census took place in Northern Nigeria in May, June and July 1952, in Western Nigeria in December 1952 and January 1953 and in Eastern Nigeria in May, June and August 1953. The result of the count gave a total of 31 500 000 for the country comprising 16 840 000 living in Northern Nigeria, 6 087 000 in Western Nigeria, 7 218 000 in Eastern Nigeria and 272 000 for Lagos Federal territory. There were 15 354 non-Africans.

At the close of the census operation, a 95% degree of accuracy, later adjusted to 97% in the Northern Region, 97% in the East, and 95% in the West, was claimed. However, in terms of the actual population size, the census has certain shortcomings. Available evidence shows that certain areas were undercounted; examples include Ilorin Division, the Fulani nomads in the North, Ede town and children 2 - 3 years in the West and Ibibio fishermen from Eket division of the East. Olusanya argued in 1967 that there must have been about 18% under-enumeration; hence he arrived at an estimated population of 36 725 340 in contrast to the reported 31 500 000. The 1952-53 census report did not provide information on rural and urban classification of the population.

III. THE 1962 AND 1963 CENSUSES

The 1962 census was country-wide and was conducted between 5 and 21 May, 1962, hence it was completely national in its scope and coverage. The census report, presented in July, 1962, gave 22.5 million for the North, 12.4 million for the East, 10 million for the West and 675 thousand for Lagos - a total of 45.575 million for the country.

These reported figures aroused considerable controversy, the more so as they had political implications for the distribution of parliamentary seats for the impending 1964 Federal elections [11]. This caused a political conflict between the East, dominated by the NCNC (National Council of Nigeria and Cameroon) and the North, dominated by the NPC (North Peoples' Convention). However, the controversy was nipped in the bud when in February 1963, the results of the 1962 census were cancelled. Another census was conducted between 5 - 8 November 1963.

The results of the 1963 census were released in February 1964: 55.6 million for the whole country, of which 29.8 million in the North, 12.4 million in the East, 10.3 million in the West, 2.5 million in the Mid-West, and 0.675 million for Lagos. These figures caused a serious constitutional crisis leading to court action. Eventually, the census results were accepted. In spite of this, several estimates have been made by researchers. Olusanya estimated in 1967 the population of Nigeria in 1963 as 47 932 902; later Olusanya and Ebigbola estimated the 1963 population as 44 828 000. Okonjo's estimate falls between both figures, being 45 332 179 [7, p. 116].

IV. THE 1973 CENSUS

The 1973 census was conducted in late November and early December, 1973. On May 8, 1974, a provisional census figure of 79.76 million was announced to the nation (Daily Times, 1974). The announcement later generated serious controversy over the reliability of the provisional census figures. Eventually, a new military regime, in September 1975, cancelled the reported 1973 provisional census figures on the grounds that the census figures could not receive general acceptance from the masses. Since then, the 1963 census figures have been used for planning purposes.

United Nations estimates of Nigeria's population in 1973 was put as 59.61 million (UN 1973). Olusanya and Ebigbola estimated it to be 58.72 million, while Olusanya and Pursell [9] estimated the 1973 population to be 59.44 million.

V. DEMOGRAPHIC SAMPLE SURVEYS

As a result of the dearth of reliable census figures in Nigeria, serious efforts have been made recently by individuals and institutions to conduct ad hoc demographic sample surveys. The objectives of these surveys are diverse; these include measurement of the rate of internal migration, rural-urban fertility differentials; impact of family planning programmes on the fertility behaviour of respondents of certain areas or groups; housing needs; agricultural productivity; etc. However, information on births and deaths is usually collected; these sometimes yield estimates of vital rates. In nearly all cases, the validity of the population base to which the measures are related

is still questionable. The two surveys that are nation-wide are the "Rural Demographic Sample Survey 1965-66" which was conducted by the Federal Office of Statistics, Lagos and the "Fertility and Family Planning Survey 1971-73", conducted by the former Institute of Population and Manpower Studies, University of Ife. Neither of these national surveys provided estimates for the population size of the country. Rather, they only provide information on births and deaths from which vital rates could be and are sometimes computed.

VI. POST-ENUMERATION SURVEYS

During previous census exercises, no post-enumeration surveys were conducted either to assess the coverage and content errors of the main counts or to collect detailed information that could not be included in the main census. The plan to hold a post-enumeration census in 1973 did not materialise; the census figures were eventually nullified.

Thus, it becomes obvious that Nigeria still relies largely on estimates and projections of her population; the 1963 census which is still used for planning purposes is remote in time, the information collected is severely limited and the quality of the data is subject to wide margins of error. Unfortunately, there are no recent sample surveys to provide supplementary information on the size of Nigeria's population. At present, planners assume that the country's population is in the region of 75 to 80 million.

VII. CONCLUSIONS

It has been noted that prior to 1952, various estimates of the country's population were advanced by administrators. The decennial censuses since 1866 were limited in scope and in coverage; the 1952-53 count appears to be the most comprehensive in spite of the speculations of an undetermined margin of undercount. Then, the reasons for the undercount were associated with fears of taxation and taboos relating to enumeration of children, illiteracy and poor publicity. By 1963, the intense publicity was misconstrued: people associated the numerical size of their localities with economic and political considerations, including revenue allocation, representation in houses of legislature, etc. Mass census migration to areas of origin was widespread; eventually, the reported figure was claimed to have been grossly inflated. The hope of researchers that the 1973 count would provide more accurate data on the country's population and its characteristics was frustrated when the figures were nullified as being unacceptable. Thus, the 1963 census remains the latest acceptable figure for planning purposes in the country.

It is expected that, after the forthcoming elections, researchers would explore non-conventional sources of data, e.g. electoral lists and voters cards, including the proposed identity cards to provide plausible estimates of the country's population. So far, Nigeria has no comprehensive, country-wide vital registration system and therefore no register of vital events are available as is the case of her neighbouring Francophone countries. Worse still, another census is not anticipated for the next five years - if this materialises, there would have been a 20-year intercensal period with no supplementary data in the form of nation-wide surveys or register of vital events to update, adjust or evaluate the census data. Thus, the precise size of the country's population is yet unknown.

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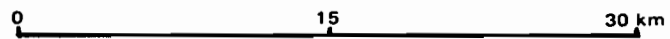
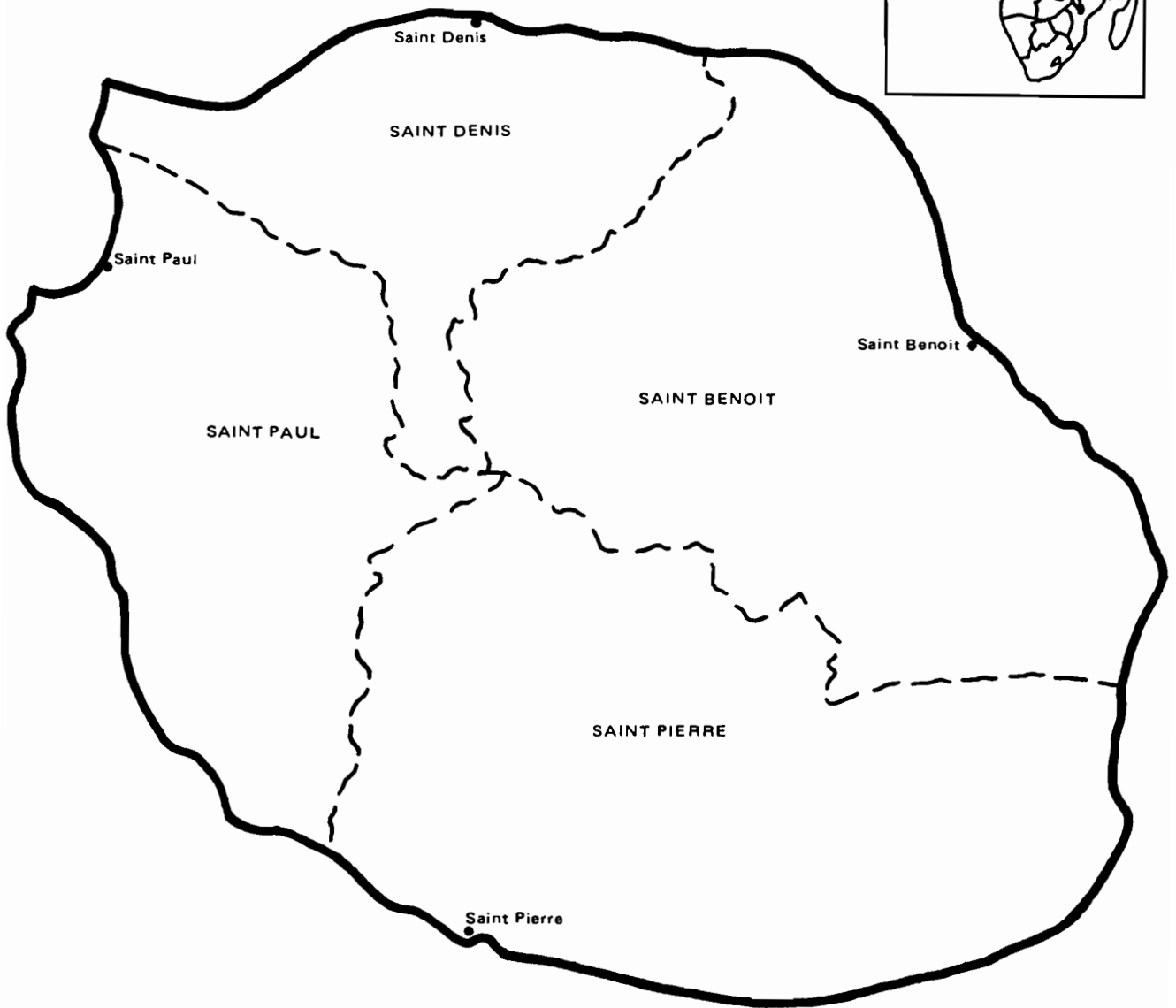
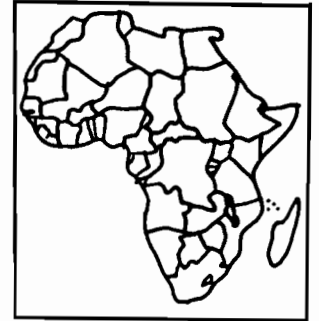
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REUNION
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REUNION

INDIAN OCEAN



R E U N I O N

I. THE ISLAND OF REUNION

Reunion, together with Mauritius and a certain number of other small islands, constitute the Mascarenes (named after Mascarenhas, a Portuguese sailor who discovered them in 1517). This group has a very marked individuality, due to its geographical isolation and the specific nature of its population. Before the 17th century, these islands were totally uninhabited; the present population is made up of elements originating from Europe, Africa, Madagascar and Asia (India and China).

Reunion is situated in the Indian Ocean, approximately 800 km east of Madagascar and 225 km west of Mauritius. It has a surface area of 2 510 km². Since 1638, date of first settlement, the island has been attached to France, except for a short period of British occupation (1810-1815), first as a colony and then from 1946 onwards as an overseas Department. Originally it was called "Ile Bourbon"; its present name, dating back to the time of the French Revolution and the First Empire, was definitively adopted in 1848.

Reunion is administered by a Prefect; it is divided into 4 administrative arrondissements, each under the jurisdiction of a Sub-Prefect, and 24 communes administered by elected mayors (1).

II. THE MAIN POPULATION DEVELOPMENTS

There is no trace of human presence before 1638. At this date a modest settlement was established, numbering no more than around 50 inhabitants by 1670. It was also at this period that the first attempts at exploitation were made, accompanied, as was too often the case at the time, by the introduction of Kaffir or Malagasy slaves. Progress remained slow until 1715, when the cultivation of coffee was begun. Growth was then considerable, with the population increasing from 2 000 in 1717 to 85 000 in 1804.

(1) The following small islands: Tromelin, Les Glorieuses, Juan de Nova, Bassas de India, Europa, the first of which is situated in the Indian Ocean, the others being in the Mozambique Channel, fall under the jurisdiction of the Prefect of Reunion, but they are not part of the Department. They are uninhabited.

Thanks to its isolation, Reunion remained relatively unscathed by the tribulations of the Revolution and the Empire. As noted above, it was occupied in 1810 by the British, who evacuated the island in 1815, but retained Mauritius (formerly "Ile de France").

Slavery was completely abolished in 1848 (there were then 60 to 70 000 slaves in a population of the order of 150 000). Between 1815 and 1848, mean annual growth is estimated at about 2%. It is certain that the growth in population was essentially due to forced immigration which persisted despite official prohibition of the trade, difficult to enforce in this isolated region, for the natural population balance would certainly be negative.

What is more surprising is that after the emancipation of the slaves, the natural balance remained in deficit for a very long time in Reunion (as was no doubt also the case in Mauritius). Fertility was relatively low and mortality very high. Among the factors in this evolution must be mentioned the appearance of malaria around 1865.

To counteract this deficit, recourse was made to the immigration of Indians (originating mainly from the south-west of the peninsula) largely under contract. Although this phenomenon had not reached the same intensity as in Mauritius, it is reckoned that by around 1860, Indians represented one-third of the population. This immigration had practically ceased by the end of the 19th century. There was also immigration from China.

Despite this balance of migration, the population seems to have diminished to some extent up to 1890. The census of 1911 gives a population about 5% below that of the 1872 census.

Between the World Wars, the growth rate became positive and was estimated at a little over 10% per annum, mainly because of fertility growth: the death rate remained very high. After 1945, there were considerable upheavals in the demographic field.

First, there was a very rapid decrease in mortality, for which the gross rate fell from 23% in 1945-49 to 7% in 1970-74.

Also, at first, there was a considerable increase in the level of fertility. Around 1960 the gross reproduction rate reached the high level of 3.3 to 3.4.

At this period, the island was in full demographic explosion, with a natural increase rate above 30%, which, if it had been maintained, would have led to a doubling of population within 22 years.

But a new revolution took place towards 1965; a very rapid decline in fertility. The gross birth rate decreased by nearly 40% between 1965 and 1976. As a result, despite the decrease of the gross mortality rate, natural growth was no more than around 20% in 1976.

It remains to be said nevertheless that demographic evolution poses serious problems in a country where density already reaches 190 inhabitants per km² and where 47% of the land is unproductive.

The situation is evidenced in increasing emigration. Emigration towards Madagascar took place formerly but a great part of the population originating from Reunion returned to the island after Malagasy independence.

Since 1965, a very clear increase in net emigration in Reunion can be observed. This movement has been essentially directed towards Metropolitan France. The balance, fewer than 500 people before 1965, was of the order of 5 000 during the 5 year period 1972-1976 and represented about half of the natural increase at the time.

III. CENSUSES IN REUNION

1) Up to 1946

An historical account of censuses in Reunion (up to 1946) has been set out in the booklet published by the Institut National de la Statistique et des Etudes Economiques (Paris) entitled "Résultats statistiques du Recensement Général de la Population des Départements d'Outre-Mer, effectués le 1er juillet 1954, Réunion" (Statistical results of the General Population Census of Overseas Departments, carried out on 1st July 1954 in Reunion).

This text is reproduced below:

HISTORICAL ACCOUNT OF CENSUSES IN REUNION

First period: From Occupation (1638) until 1730

The first censuses were carried out under the aegis of the Royal Administration (commissaries, ...). These censuses took place in every district by family, house or cabin.

Together with nominal lists, relatively short due to the small number of people then enumerated, summaries were sent to the mother country. Nominal lists included either heads of families, whites (adults only in total) or all inhabitants. When complete, they usually showed for each member of household his relationship to the head of household or his status (servant or slave), and sometimes, an indication of his profession, age, place of birth and marital status.

Documents relating to the following censuses (1690, 1704, 1709, 1710, 1711, 1713, 1719, 1776) can be found in the archives of the Ministry of French Overseas Departments.

By way of example, here are some comments on the documents relating to the 1704 and 1709 censuses. The first, entitled "General Census of all inhabitants, heads of families, wives, children and slaves living in the Isle of Bourbon, their age, place of birth, landholding and types of cultivation" encompassed a total population of 734 people belonging to 92 families. The document includes one list per family; the lists are then grouped by districts (St. Paul, St. Denis, St. Suzanne) and are, within each district, classified by alphabetical order of the christian name of the head of family. On each list appear the names, surnames, age, place of birth of the head of family, of his wife, children - sons and daughters, male and female slaves.

The 1907 census was presented in the same manner, the summary being more detailed than in 1704. For example, heads of family are classified as male heads or female heads (widows).

Finally, we find an account of professions which is particularly entertaining: the first person named is entered as a "lazy drunk", another as a "man of virtue", a "clock maker" is mentioned as being responsible for looking after the only clock in the island. In the 1709 summary, opposite the total number of slaves, is the comment "In all likelihood this state of affairs is not correct". The author gave no reasons but they are likely to be related to tax.

Second period: From 1730 to 1848

It seems that from this time onwards, published results originate from enumerations carried out by virtue of a "Declaration made by the King on 3 October 1730".

This provides some detailed information on the enumerations made during the second half of the 18th century and the first half of the 19th century. The purpose of these enumerations was to establish a register of those persons liable to a capitation levy which was fixed in 1730 at one hundred pounds net of sugar per annum. According to the declaration this levy was payable, except for exemptions provided for in the text, by all inhabitants on behalf of themselves, the members of their family, their servants and employees. Exemptions were related to sex, age, place of birth, Civil Registration, and social status.

Meanwhile, a complete nominal enumeration of population, exempt or not, was to be made every year. This enumeration was to be carried out in the following way: in November of each year, all inhabitants, of whatever type or status, exempt or not, were to make a written declaration relating to the persons constituting their household, community or place of residence: name, surname, and age of the whites, blacks, mulattos, freemen, retainers or slaves of both sexes. They were to remit this declaration to the "Receveur du Domaine" of their district or to the "Commis du Domaine" representing their place of residence. The administrative agents would then sign a copy of their declaration.

The Registers and capitation were drawn up and fixed on the basis of the declarations and lists obtained. The lists of taxpayers, collected by the "Commis du Domaine" were checked by them once a year through a general review of the households of all people, whatever their type and status, and through specific visits in order to discover people who could have been concealed and not registered. The "Commis" were also authorised to consult the registers of christenings and deaths of parishes, inventories and divisions kept by registrars and solicitors.

One instruction given for the implementation of the Royal Declaration was that care should be exercised not to let inhabitants abuse exemptions by making false declarations of age (under 14 or over 60) or origin (whites declared as creoles, the latter being exempt); to refer to christening registries so as to detect false declarations of age, and registries of deaths to make sure that negroes had not been passed for dead. Ages declared by captains of slave-ships were also to be used to check ages declared by masters.

If any cheating was discovered, it was to be severely punished: confiscation of undeclared slaves, fines, suppression of exemptions for life.

Documents dating back to the Revolution and the Empire are not very numerous. The troubles prevailing at that time certainly played a part in this and it is possible that censuses were not carried out regularly.

Two Orders passed under the July Monarchy and, applicable in the West Indies, the Ile Bourbon and in Guyana, somewhat altered the method of these enumerations.

The Royal Order of 4th August 1833 (1) stipulated that from 1st January 1834 onwards, enumeration lists returned annually to the municipal authorities and certified by the slave owners were to indicate the name, forename, sex, age and caste of the enumerated, and any distinguishing features to aid their recognition as well as the kind of work in which they were employed. They were also to mention individually, and by date, births, deaths, purchases, sales, successions and donations. Independently of the indications given in the lists, masters were also required to make declarations of births, marriages and deaths of their slaves. These events were to be recorded on duplicate registers: one remaining in the archives of the commune, the other being entrusted to the Record Office.

The Order of 11th June 1839 completed the instructions. It first of all stipulated that a general census was to be carried out within 6 months. Every slave owner had, within a time limit to be fixed by the Governor, to obtain from the Town Hall of his commune three enumeration forms and enter on each the following:

(1) Enforcement of the Law of 24 April 1833 relating to the legislative regime in the colonies, stipulating that it would be enacted through an order on censuses.

1° His name, forenames, place and date of birth, his profession, and, if applicable, the class of his licence;

2° The number, names, sex and age of people constituting his family and not subject to individual enumeration;

3° All details (as required by the Order of 1833) relating to his slaves.

For the people classed as free, ways and means were left to the discretion of the Governor.

The forms were then handed to the Town Hall: one copy, countersigned by the Mayor, was given back to the originator and served as a receipt, the second was kept in the Town Hall and the third was transmitted to the "Direction de l'Interieur".

Enumeration was to be renewed each year for landowners and their slaves; the dates chosen for the rest of the population were left to the discretion of the Governor. Delays and omissions were to be punished by fines. To these measures, more particularly related to censuses, were added a series of provisions the overall purpose of which was to control the slave population: creation of a register of slaves, declaration of births, deaths and mutations; the latter having to be listed additionally in later censuses.

Despite the opportunity presented of not enumerating annually all free people, the operations carried out each year between 1840 and 1848 encompassed the whole population. Local regulations followed very closely the terms of the Order of 1839: they fix the time limit for handing over forms (a month and a half) but give no details on the analysis of the census which, in all likelihood, took place at local level and permitted the establishment annually of the following:

- a picture of the population as at 31 December for the year under consideration;
- population changes during the same year.

The information provided was analogous to that obtained before 1830. However, the free population is no longer divided into white and coloured populations except sometimes under the column "observations" which gives additional information and frequently contains an appraisal of the results shown; an appraisal which can also be found in the "notes" added to some reports.

The enforcement of the Orders of 1833 and 1839 seems to have improved the quality of censuses but their accuracy still remained unsatisfactory in the opinion even of contemporary observers (1).

(1) For example, this extract of a note sent out with the results of the 1843 census: "This difference (increase by comparison with 1842) can be explained by the greater precision introduced into censuses; something the higher authorities have kept constantly in hand, particularly since 1840."

Third period - From the abolition of slavery (1848) to 1866

The abolition of slavery in all the French colonies in 1848 made the Order of 1839 obsolete as far as the slave population was concerned. On 8th December 1848, a circular was therefore issued inviting the Governors of colonies to carry out a general population census in 1848 according to the methods presented for the free population, that is to say, according to the decrees passed by the Governors. Results had to be established within a well defined framework identical for all colonies, showing population figures for communes or districts broken down by sex, age (under 14, over 14) and civil registration. This framework was used without alteration until 1889 for the annual population tables published by the Ministère de la Marine et des Colonies (1).

This circular did not specify how frequently future censuses should be carried out although its author reserved the right to determine their timing. In fact, it was the local authorities who, up to 1911, fixed the dates of censuses. Furthermore, no recommendations were given as to which methods to use at the very time when the abolition of slavery was posing enumeration problems more difficult to solve than ever before. In fact, up to 1848, the slave population played no part whatsoever in the completion of enumeration forms the existence of which was in general unknown to them. Once free, it formed a population whose mobility, dissemination and illiteracy made any control difficult.

It should be noted that it was at this time that the notion of quinquennial censuses appeared.

It is possible however that annual censuses continued to be carried out. Annual statements of population sent to the central administration, whose origin was not specified, may well have resulted from such censuses or from some form of updating carried out by municipalities from one year to another.

This circular does not seem to have been rigorously enforced in Reunion where the local authorities (Decree of 30th October 1851) considering "that population statistical activities, shared between Mayors and the Syndicat de l'Immigration, are incomplete and inaccurate in several aspects and that they are not suitably designed for the uses to which they are destined of satisfying the requirements of general administration and personal taxation" ordered the implementation of annual censuses under the direction and control of the Controller of Taxation. Provision was to be made for a "methodical and complete classification of individuals of all sexes, ages and status, set out in a way suitable for the maintenance of registers".

(1) "Tables showing population, agriculture, trade and navigation for the year... They also show figures of births and deaths, with no discrimination of sex."

Fourth period - Introduction of central government methods

a) From 1866 to 1946

A circular issued by the French Government dated 7th June 1866 ordered the carrying out of a nominal census of people born in France and currently living in the colonies. This census which was to provide vital events details, religion, origin (French born or nationalised) and level of education, took place in the context of the 5-year census then being carried out in France.

The same circular also required that a general census of sedentary population be carried out for every territory by commune and age ("from nought to twelve months and up to 100 years or more") providing the same information as planned for the population born in France.

On the occasion of the 5-year metropolitan census of 1886, a ministerial despatch of 16th March 1886 required that, as far as possible, a census should be carried out simultaneously in the colonies. It appeared to the author of the circular that instructions applied to France could be enforced without major modifications in the old colonies.

However, it was planned that forms should be arranged in order to distinguish between immigrants of different types: Africans, Indians, Chinese, etc... under contract, having completed their contract, entitled to repatriation or having renounced it.

These instructions do not seem to have been followed in Reunion, at least after the 1872 census.

The following extracts from a letter of 8th February 1873 addressed to the *Ministre de la Marine et des Colonies* give reasons for the measures taken at that date: "The only indications provided so far originated from registers drawn up annually in Town Halls without a sufficient degree of control. Their inaccuracy was inevitable as it was in the direct interest of each municipality to inflate the size of the population of its commune in order to obtain a larger share in the distribution of public funds".

Local authorities, having such a bad opinion of the work of municipalities, could not entrust to them the direction of enumeration operations. In consequence, it was the Direct Taxation Service which took charge of censuses which were carried out every 5 years since that date; the only concession granted to communes was the presence, next to the enumeration agents (agents from the Taxation Service or Police Inspectors), of a municipal official; the absence of the latter did not, however, invalidate operations carried out without him.

The number of agents at the disposal of the Taxation Service being small, censuses were not carried out at fixed dates but lasted as long as was necessary for the agents to complete their circuits.

If we exclude the years 1881 and 1887, no enumeration operation in Reunion was entirely nominal. In fact, besides the categories of population enumerated separately (soldiers, sailors, prisoners, etc.), a great number of people were enumerated numerically only. In the first censuses, next to the name of the head of household, mention was made only of the number of persons constituting a family or household group (wives, children, parents, servants and others). Later on, nominal registration was extended, first (1892 to 1911 inclusive) to boys aged over 16 and workers without contract, then from 1921 to all the members of a family, apart from children under 6. As for Malagasy Indians, Kaffirs, Chinese and Arabs, these were enumerated nominally only in 1881 and 1887. On these two dates, a kind of household return to be filled in by the head of household or by individuals living on their own replaced the statements in which enumeration agents wrote down details collected in turn about each household.

It should be noted, contrary to the rules scrupulously followed in official censuses carried out in France, that the Taxation Service, charged with the implementation of the census, used information obtained for tax purposes. In fact, Article 12 of the Order of 1881 specifies that returns gathered in the central office of the Taxation Service could be used by the divisional controllers for the assessment of personal taxation.

The analysis of nominal information remained superficial and never exhausted all possibilities. In addition, the presentation of results, originally limited to the overall population of communes, was extended to include breakdowns by sex or nationality, and between children, adults and old people. Results were sometimes incomplete and presented in a heterogeneous manner, notably as regards age limits.

It seems, however, as far as can be judged from cross-checks carried out with the help of statistics on population change (the Civil Registration system was operating from 1833 onwards), and on external migration movements, that the overall results of these censuses are relatively accurate, and certainly of a better quality than those carried out at the same time in the West Indies. The Service in charge of the operations had no interest in inflating the figures for the population of communes.

b) The 1946 Census

A census of the whole population on an individual return basis was carried out for the first time from 21 to 31 October 1946. Inhabitants were to go to the communal centres to fill in their individual returns. A receipt was then handed to them which allowed them to claim their ration card.

In creating an actual obligation for the inhabitants to be enumerated, the system employed offered a guarantee against omissions but also contained potential weaknesses. The link between the handing over of the form and the ration card was a temptation for both the individuals and the communal authorities to generate fictitious forms for children, absentees and others. Control rested solely with the communal authorities. It was in their interest to increase the official size of their population from an electoral and, above all, a financial point of view: the proceeds from maritime duties and certain subsidies were distributed between communes in proportion to their populations.

Besides, this census was carried out on a population containing a high proportion of illiterates somewhat averse to administrative enquiries and this resulted in a large number of spoilt or incomplete returns.

On the basis of various cross-checks obtained from civil registration or electoral statistics, the results after processing of the enumeration forms gave a population figure which is likely to have been overestimated by several thousands. (End of text cited.)

2) Censuses carried out since the Second World War

Five general censuses of the population of Reunion have been undertaken since 1945, on the following dates:

21-31 October	1946
1st July	1954
9th October	1961
16th October	1967
16th October	1974

The way the 1946 census was carried out has been described above; although it represented a substantial improvement because for the first time the population was completely enumerated on an individual basis, it was noted that serious criticisms can be made of the methods used.

a) The 1954 Census

This census was the first operation which corresponded to the standards of modern censuses. The "Prefet" of the Department was responsible for the operations. He was assisted by an agent from INSEE (Institut National de la Statistique et des Etudes Economiques).

A collective household questionnaire was used (with one line for each member of household). Enumeration agents filled in the forms themselves.

Field operations lasted for about one month.

A control by sample took place in some areas.

b) The 1961 Census

This census was the first in which, as was the case in Metropolitan France, each mayor was in charge of enumeration operation in his commune (in particular, for the breakdown into districts and the recruitment of enumeration agents). An official of INSEE played the role of technical consultant and supervisor. It was also his duty to carry out sample control operations: a quantitative control on 1/10 of households and a qualitative control on 1/50 of households. The quantitative control operation showed that on the whole the figures obtained by the census were satisfactory except for one part of one commune where there had been irregular registrations.

Apart from these innovations, the methods used in the census were practically identical to those in 1954, in particular, field operations which lasted for about one month.

c) The 1967 Census

This census was marked by a certain number of improvements over its predecessor. First of all, in the meantime, a Departmental service of INSEE was created in Reunion which provided a most useful permanent infrastructure for the methodical preparation of the census and statistical operations. The work of the agents was organised more efficiently and was facilitated by the introduction of a pre-census which took place approximately one month before the enumeration proper and including notably a list of buildings.

The census was followed by a control sample survey carried out on 1/20 of habitations except in the capital, St. Denis, where it was on 1/10 of habitations.

d) The 1974 Census

This census was carried out according to the same principles. A certain number of improvements were achieved. The pre-census gave rise to the establishment of a list of households and the preparation of enumerators' log books. "Contrôleurs-Délégués" were able to be recruited for the duration of the operation to prepare, organise and check the work of enumerators. On the other hand, it is to be deplored that the additional control survey initially envisaged could not be carried out.

IV. EVOLUTION OF POPULATION UP TO THE SECOND WORLD WAR

Table 69 shows the figures available up to 1941. It goes without saying that these figures are of variable reliability. In particular, the figure for 1848 is totally improbable but can doubtless be explained by the turmoil caused by the abolition of slavery.

Table 69
REUNION - EVOLUTION OF THE POPULATION BASED ON
ENUMERATIONS AND CENSUSES UP TO 1941

YEAR	POPULATION	YEAR	POPULATION
1646	12	1872	182 700
1654	13	1877	182 100
1670	50	1881	172 100
1686	269	1887	163 900
1707	734	1902	173 315
1713	1 171	1907	177 677
1717	2 000	1911	173 822
1777	35 469	1921	173 190
1804	65 152	1926	186 837
1826	87 100	1931	197 933
1837	110 000	1936	208 258
1848	105 677	1941	220 955
1853	152 600		

If this figure is ignored, mean annual increase rates by period are as follows:

Table 70
REUNION - MEAN ANNUAL INCREASE RATES FROM 1801 TO 1941

PERIOD	ANNUAL INCREASE RATE PER THOUSAND
1804-1826	+ 13.3
1826-1837	+ 21.4
1837-1853	+ 20.7
1853-1872	+ 9.5
1872-1877	- 0.7
1877-1881	- 14.0
1881-1887	- 8.1
1887-1902	+ 3.7
1902-1907	+ 5.0
1907-1911	- 5.5
1911-1921	- 0.4
1921-1926	+ 15.3
1926-1931	+ 11.6
1931-1936	+ 10.2
1936-1941	+ 11.9

-1.8 (1872-1902)

0.0 (1902-1921)

Taking into account the earliest figures, a markedly constant increase is observed between 1826 to 1853 (of the order of 2% per annum); the lower figure recorded for the interval 1804-1826 can be logically accounted for as resulting from the military activities which marked that period.

The 1853-1872 period is a key period marked on one hand by substantial immigration and at the same time by a sharp increase in the death rate (a close link may exist between these two factors as has often been the case for insular populations subjected to external influences).

From 1872 to the beginning of the 20th century, the observed increase was almost continuously negative despite immigration, which incidentally decreased in its intensity, and stopped almost completely towards 1900.

Vital events registrations are available for almost the entire period stretching from the middle of the 19th century until 1889. After that date, data became quite fragmentary (it is certain that the number of infant deaths was somewhat underestimated, which affected both the birth and death rates observed but not the natural increase).

Table 71

REUNION - VITAL EVENTS STATISTICS AVAILABLE PRIOR TO 1945

PERIOD	MEAN ANNUAL NUMBER		
	Births	Deaths	Balance
1849-1852	3 415	3 597	- 182
1857-1861	4 037	6 858	- 2 821
1862-1866	4 243	5 867	- 1 624
1867-1871	4 108	4 764	- 656
1872-1876	4 480	5 018	- 538
1877-1881	4 492	6 287	- 1 795
1882-1885	4 691	5 158	- 467
		(1882-1886)	
1887-1889	4 827	4 087	+ 740
1897	4 228	5 479	- 1 251
1911-1921	6 240	6 070	+ 170
1933	7 917	6 052	+ 1 865
1940	9 404	4 777	+ 4 627
1941	9 636	4 768	+ 4 868
1942	9 172	6 136	+ 3 036
1943	8 614	5 135	+ 3 479
1944	8 204	4 961	+ 3 243
1945	7 817	5 479	+ 2 338

On the basis of these figures, the gross birth rate changed very little between 1857 and 1889, being in the order of 25 to 26 per thousand (or "25 to 26‰"); on the other hand, considerable fluctuations are observed in the death rate, which is not surprising at a time when the island was practically defenceless against climatic and epidemic hazards. For the whole of that period, the mean gross mortality rate would be in the order of 32% per thousand (or "32‰"), giving a natural increase rate (or rather decrease rate) in the order of -5 to -6%.

If it is assumed that the figure of 182 700 inhabitants in 1872 is correct, a population of around 170 500 in 1889 would be obtained in the absence of migration movements, on the basis of vital events figures. In fact, Table 69 gives a figure of 163 900 for 1887, but comparison with adjacent figures: 172 100 in 1881 and 173 315 in 1902 could suggest that there was a degree of underestimation.

During the early years of the 20th century, a balance seems to have been established: population in 1921 was more or less the same as in 1902 after, it must be noted, the disturbances caused by the First World War.

For that period, there are vital events data only for the decade 1911-1921: they are remarkably similar to those observed in Mauritius around the same time.

Table 72

REUNION - ESTIMATE OF GROSS DEMOGRAPHIC RATIOS IN REUNION
AND MAURITIUS AT THE BEGINNING OF THE 20TH CENTURY

	RATE PER '000		
	Birth rate	Death rate	Natural increase
Reunion 1911-1921	36	35	+ 1
Mauritius 1901-1911	36	37	- 1

An annual increase in the order of 10% is observed during the interwar period (the peak rate of 15% for the period 1921-1926 may be explained as a consequence of the end of the war and demobilisation unless it was due to a difference in the quality of censuses). It is possible that certain figures relating to the censuses have been overestimated. Unfortunately, there are vital events data only for the year 1933; shown below is a comparison between ratios calculated for that year and those observed around the same period in Mauritius.

Table 73

REUNION - GROSS DEMOGRAPHIC RATES OBSERVED DURING THE 1930s
IN REUNION AND MAURITIUS

	RATE PER '000		
	Birth rate	Death rate	Natural increase
Reunion 1933	39	30	+ 9
Mauritius 1935-1939	34	27	+ 7

V. CRITICAL ANALYSIS OF CENSUSES SINCE THE SECOND WORLD WAR

1) Population definition

A modification in the definition of the legal population of the Department (which incidentally affected only a small number) was made between the 1954 and 1961 censuses.

Since 1961, some categories of people previously belonging to the population counted separately were included in the legal population. These were in particular boarding-school pupils and military contingents posted in barracks outside Reunion at the time of enumeration when in fact the household to which they belonged was in Reunion.

In 1961, the number of persons involved amounted to 1 772 out of a total legal population of 349 282; they therefore represented approximately 0.5% of the total population.

In order to permit comparability with previous censuses, the two figures will be mentioned for 1961.

Table 74

REUNION - LEGAL POPULATION FOR CENSUSES CARRIED OUT SINCE
THE END OF THE SECOND WORLD WAR

CENSUS	LEGAL POPULATION
21-31 October 1946	241 667 (a)
1st July 1954	274 370 (a)
9th October 1961	347 510 (a) 349 282 (b)
16th October 1967	416 525 (b)
16th October 1974	476 675 (b)

(a) former definition
(b) new definition

2) Underestimation of young children

For the censuses of 1954, 1961 and 1967, a comparison has been made between the number of enumerated children below the age of 5 and that of the same age group calculated on the basis of vital events data. The following results were arrived at:

- 1954: These children are up to 4 and a half years of age, that is to say, born between 1st January 1950 and 1st July 1954.

Enumerated	45 747	
Calculated	47 095	

Balance	- 1 348	(relative underestimation -2.9%)

- 1961:	Enumerated	62 044	
	Estimated	64 193	

	Balance	- 2 149	(relative underestimation -3.3%)

For the 1967 census, estimates according to year of age (as at 1st January 1968) and sex are as follows:

Table 75

REUNION - COMPARISON BETWEEN NUMBER OF ENUMERATED CHILDREN UNDER 5 AND THAT CALCULATED ON THE BASIS OF VITAL EVENTS DATA - 1967 CENSUS

AGE	MALE			FEMALE		
	Enumerated (up-dated)	Calculated	Balance	Enumerated (up-dated)	Calculated	Balance
	A	B	A-B	A	B	A-B
0	6 304	7 634	- 1 330	6 732	7 711	- 979
1	7 154	7 796	- 642	7 170	7 646	- 476
2	7 180	7 596	- 416	7 230	7 681	- 451
3	7 220	7 128	+ 92	7 199	7 225	- 26
4	7 239	7 591	- 352	7 065	7 340	- 275
0-4	35 097	37 745	- 2 648	35 396	37 603	- 2 207

That is altogether for both sexes, an underestimation evaluated at 4 855 children under 5 in a total of 75 348.

The relative underestimation would therefore be:

- 7.0% for males
- 5.9% for females
- 6.4% total

It would therefore appear that there is a tendency towards an increase in the population of children underestimated (doubling between 1961 and 1967), which is not very encouraging but this represents an overall underestimation of only 1% in 1967.

3. Comparison between population figures at successive censuses

In order to make this comparison, the vital events figures are used, which are well-known, and statistics of migratory movements which exclude the earliest periods and whose value is questionable where they do exist, although the insular nature of Reunion is a very favourable factor in this regard.

In order to make this comparison, a standard point of reference must be adopted. As several indications seem to show that the 1967 census was of a higher quality than the others, the population figures for 1961 are used as a reference. This is obviously rather arbitrary, but if new data or more advanced studies subsequently led to rectification of the 1961 figures, it would then suffice to apply the same correction in absolute terms to the results of the other censuses.

Let us go back to the figures for 1961. 347 510 people were enumerated according to the former definition of legal population and 349 282 according to the new one which includes in the legal population certain categories of persons temporarily absent.

To this figure is added the 2 149 young children estimated to have been omitted, which gives the following:

- 349 431 inhabitants for the population according to the former definition (which will be used as a point of reference when drawing comparisons with censuses prior to 1961);
- and 351 431 inhabitants for the new definition of population (which will be used to compare with later censuses).

a) Censuses prior to 1961

* 1954-1961 Interval

Natural population change between the two censuses was more or less as follows:

- births	104 800
- deaths	30 500
- natural balance	74 300

It is difficult to obtain accurate figures for the migratory balance: this was probably somewhere between -200 and -250 people per annum during the intercensal period.

For the whole period, the figure -1 600 which features in the report of the 1961 census is used, which gives the following:

Table 76

REUNION - ESTIMATE OF POPULATION IN 1954 BASED ON FIGURES
OBTAINED IN THE 1961 CENSUS

Population at 9th October 1961	349 660
- natural balance	- 74 300
- migratory balance	+ 1 600
Estimate of population at 1st July 1954	276 960

The population actually enumerated in 1954 amounted to 274 370, that is a difference of 2 590 people. It was seen that the under-5 age group seems to have been underestimated by 1 350 people; if this factor is taken into account there remains a difference of 1 240 that is, a margin of less than 0.5%, which is quite negligible.

In conclusion, the consistency between the two censuses proves quite satisfactory.

A population of the order of 277 000 for 1954 will therefore be accepted, assuming that the 1961 figures are correct.

** 1946-1954 Interval

There are no data on the migratory balance during this interval, but it was certainly low.

On the basis of civil registration, the following figures appear for the intercensal period:

- births	89 300
- deaths	39 000
- natural balance	50 300

which leads to the following estimates:

Table 77

REUNION - ESTIMATE OF POPULATION IN 1946 BASED ON 1954 FIGURES

	Figures observed in 1954	Figures estimated on the basis of the 1961 census
Population in 1954	274 400	277 000
- natural balance	- 50 300	- 50 300
Estimate of population in 1946	224 100	226 700

The legal population at the census amounted to 241 667; hence all the evidence points to an overestimation in the order of 7 to 8%, which is not negligible, but much lower than observed in countries where conditions were analogous, above all if the following factors are taken into consideration: the absence of control by a non-political organisation, the existence of ration cards, and the interest of municipalities in inflating the figures in order to obtain larger subsidies.

*** Estimate of population in 1941

An uninterrupted set of vital events are available from 1940 onwards. In addition, there is a population figure assessed on the basis of a census (or enumeration) in 1941. No accurate information is available regarding this operation but it is likely that, as for previous censuses (from 1921 to 1936), the date of reference was 1st July.

Under these circumstances, the natural inter-censal balance for 1941-1946 can be estimated as follows:

- births	46 015
- deaths	28 179
- natural balance	17 836

which would lead (if migratory movements are ignored) to the following estimates for 1st July 1941:

- based on 1954 figures:	206 300
- based on 1961 figures:	208 900

The official figure was 220 955; this would entail, according to the calculations above an overestimation of 5.8% to 7.1%, i.e. very close to, although slightly lower than, the overestimation observed in 1946.

b) Censuses after 1961* 1961-1967 Interval

If an estimate of the 5-year old children who had been omitted is added, a figure of 421 380 is arrived at for the population in 1967.

Natural increase during the intercensal period amounted to -75 379 people. The estimation of the migratory balance is more complicated.

The various sources recording movement in and out of the island provide figures which are markedly different: the results of the 1967 census [8] show a migratory balance of -5 095 people.

In another publication [10] the following 'indirect' estimates of the balance are to be found (1).

Table 78

REUNION - ESTIMATE OF THE MIGRATORY BALANCE BETWEEN
1961 AND 1967

	MALE	FEMALE	TOTAL
Increase in the number of Reunionese enumerated in France *	- 5 700	- 4 900	- 10 600
Increase in the number of French-born people enumerated in Reunion	+ 1 450	+ 1 050	+ 2 500
Increase in the number of people born in Madagascar and enumerated in Reunion	+ 650	+ 750	+ 1 400
Total balance	- 3 600	- 3 100	- 6 700

* This refers to French censuses in 1962 and 1968.

(1) The balance does not take into account the deaths of people who died in France but were born in Reunion, whose number was certainly very low considering the age distribution of Reunionese in France, or migratory exchanges with other countries.

The two following estimates may thus be derived:

Table 79

REUNION - ESTIMATE OF THE POPULATION IN 1967
BASED ON 1961 FIGURES

Population in 1967 (new definition)		351 431
Natural balance		+ 75 379
Migratory balance	- 5 095	- 6 700
Estimates (rounded) of population in 1971	421 700	420 100

The difference with the figure of 421 380 people shown above is not significant.

** 1967-1974 Interval

Regarding the 1974 census, it was not possible to make an estimate of the underestimation of children below the age of 5 as was the case for the previous censuses; if it is assumed that the relative differential was the same as in 1967, the estimated figure would be approximately 482 800 instead of 476 667.

The natural balance between the two censuses amounted to 75 153 people.

The migratory balance estimated for the same period would be 13 980, a figure calculated on the basis of the statistics of movements in and out of the island by year assuming that in the two 'extreme' years (1967 and 1974) the balance was distributed in a linear fashion over time.

Besides, the number of Reunionese enumerated in Metropolitan France increased from 16 548 to 34 985 between the censuses of 1968 and 1975, i.e. an increase of 18 437 people. Unfortunately, figures relating to the growth in the number of non-Reunionese in Reunion are still unavailable.

In addition, the census in France took place in February 1975, that is to say, 4 months after the one in Reunion. Now the years 1974 and 1975 were marked by a considerable increase of the migratory balance in Reunion, as the following table shows:

Table 80
REUNION - RECORDED MIGRATORY BALANCE, 1972-1975

1972	- 2 294
1973	- 2 387
1974	- 5 722
1975	- 9 863

In the absence of migration, the population would have increased (from 1967 to 1974) to 421 380 + 75 150 = 496 530 inhabitants.

The difference between this figure and that of 482 200 mentioned earlier, i.e. 14 330, may therefore be explained primarily as the result of migratory balance, this, of course, being subject to a more detailed analysis which will become feasible when a full breakdown of the data on the 1974 census is available.

VI. CONCLUSIONS

It has been shown that the quality of recent censuses in Reunion can be considered comparable to those in developed countries; allowing that the census of 1961 is pretty accurate, (subject to the underestimation of children aged under 5), the following estimates of the four later censuses appear:

Table 81
REUNION - ESTIMATES OF THE POPULATION AT THE
FOUR LATEST CENSUSES

DATE	ENUMERATED POPULATION	ESTIMATED POPULATION
1st July 1954	274 400	277 000 (a) 278 400 (b)
9th October 1961	349 300	351 400
16th October 1967	416 500	421 400
16th October 1974	476 700	476 700 (c)

(a) former definition of legal population.

(b) estimate of legal population following the definition used in the censuses of 1961, 1967 and 1974, assuming the relative differential to be the same as in 1961.

(c) not adjusted, lacking exhaustive data.

With regard to the previous censuses, whose organisation and control did not meet the normal requirements of modern censuses, the figures of 1941 and 1946 appear to be overestimated by 6 to 8%, the likeliest figures being as follows:

Table 82

REUNION - ENUMERATED FIGURES AND ESTIMATES OF
PROBABLE POPULATION IN 1941 AND 1946

DATE	ENUMERATED POPULATION	ESTIMATE
1941	220 955	208 900
1946	241 667	226 700

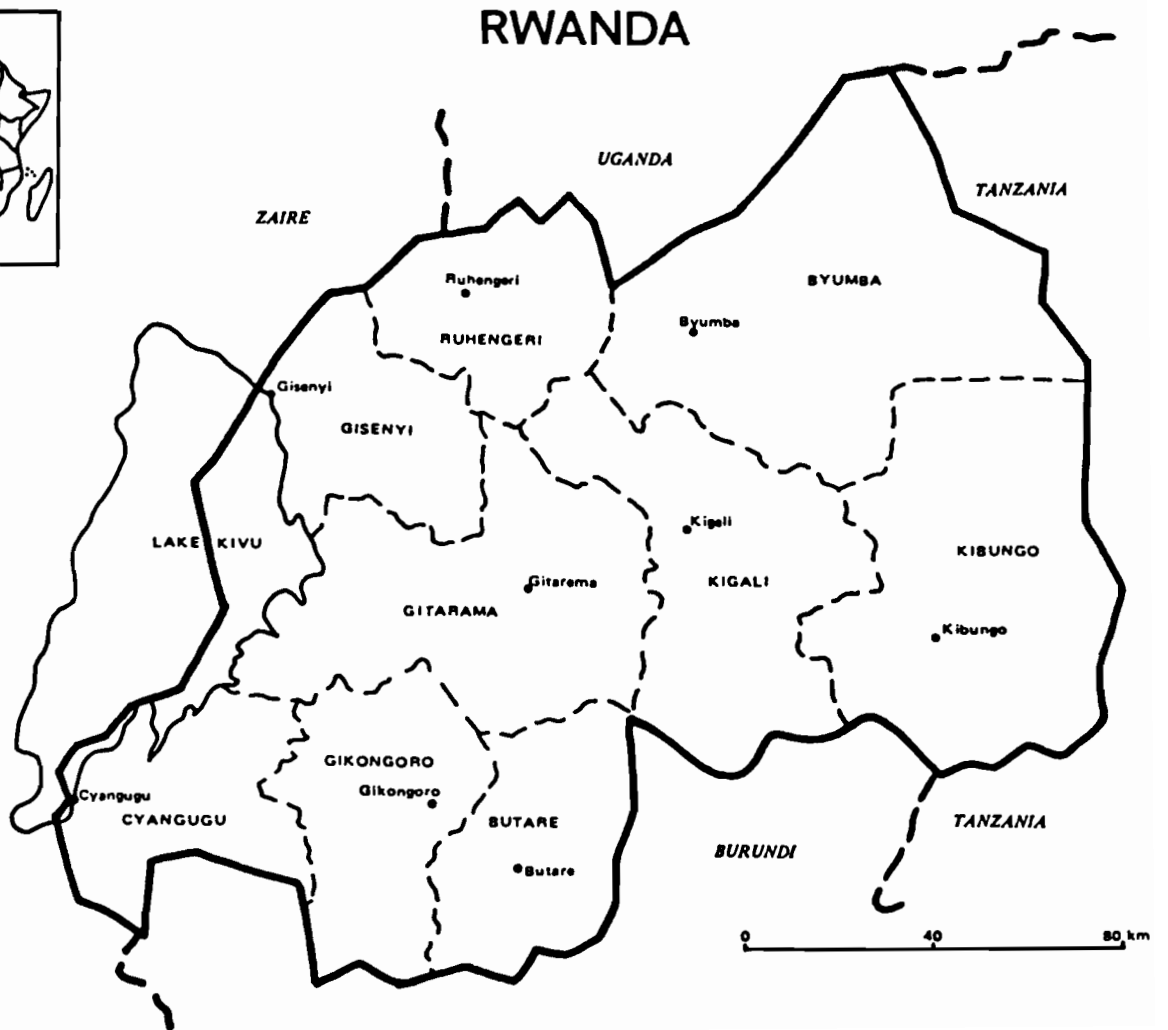
It is difficult to assess the validity of earlier censuses; it should be borne in mind nevertheless that if it is allowed that the figure of 1921 is accurate, the mean annual growth between 1921 and 1941 is 9.4%, a highly probable figure.

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RWANDA
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DECEMBER 1979



R W A N D A

I. HISTORICAL OVERVIEW

Very little is known about the population of Rwanda before the first respectable estimate dating from 1936. What is known is that this country in Eastern Africa, after having successfully resisted several attempts of penetration by European colonisers, traders and missionaries, was effectively occupied for the first time in 1892 (date of entry of the first European in Rwanda) by German colonisers and missionaries. Later on the country was to be incorporated in the German Empire of East Africa "Deutsch Ostafrika" comprising Tanganyika, Burundi and Rwanda. The population estimates for this country at this period (beginning of the century) are crude and only stem from vague impressions; indeed the population density, the vitality of the people and of the livestock up till then being unknown over the whole area, could give rise to overestimation of the population. Thus the German Captain Bette put forward the figure of 2 000 000 for 1898, followed in this by other observers (Czekanowski and Kandt give 1 700 000 in 1907). Discussion about this figure is not in itself important as it is impossible to know whether it is above or below reality; what is important are other considerations such as: a relatively healthy environment which favoured an abundance of births permitting a significant increase in population despite high mortality (due mainly to food shortages and famines); the decision of the German authorities to turn Rwanda into a major reserve army of labour in East Africa in order to solve the apparent overpopulation there and labour shortage in the rest of the area. Therefore without putting forward a precise figure, it can be supposed that Rwanda before the First World War (with a surface area of 130% more than at present) was "highly populated" for the time. Under Belgian rule, which was set up at the end of the hostilities, demographic knowledge was not extended significantly before 1936, date of the first estimate. There followed the setting up of a modern administrative system and civil registration. This period was also characterised by the feeling that the territory was "over-populated" and that it was necessary to relieve the situation by encouraging emigration not only towards East Africa (Uganda, Tanganyika) but also towards the Congo. After 1936, estimates of the population of Rwanda were made regularly on the basis of "administrative censuses" founded on the notion of the "valid adult man" (H.A.V.) able to pay taxes; they were also based on civil registration entries as well as reports from missionaries and health authorities.

After the end of the Second World War, the effects of which were disastrous in Rwanda from a demographic point of view (famines, food shortages, emigrations), it was decided, under pressure from the United Nations, to undertake for the first time a census of the population of the country. The 1949 census gave 1 899 800 inhabitants for the present day territory. As this result was considered to be far removed from reality, it was decided to carry out sample surveys whose effectiveness had been demonstrated in the British territories of Eastern and Western Africa. Sample survey operations were carried out diligently and in 1952 the first realistic figures of the population of Rwanda were obtained concerning its size, its fertility and mortality characteristics, migration, foreign population, etc. Subsequently, population figures were obtained by means of annual evaluations based on civil registration which was being constantly improved, permitting periodical compilations ("Administrative Censuses of 1962 and 1964").

In 1970, the demographic sample survey carried out jointly by INSEE and ORSTOM showed a population figure of 3 757 000 inhabitants. Finally the "General Census of Population and Housing" of 15th August 1978 carried out in conjunction with the United Nations (UNFAP) gave a population figure of 4 820 000. Table 83 lists the population figures from 1936 onwards and gives an idea of the growth of the population (see also Chart 10).

Table 83

RWANDA - EVOLUTION OF THE POPULATION FROM 1936 TO 1978

YEAR	POPULATION	ANNUAL INCREASE RATE (%)
1936	1 762 000 (E)	-
1941	1 920 000 (E)	1,7
1946	1 686 000 (E)	-2,6
1952	2 104 000 (R)	3,8
1957	2 551 000 (E)	3,9
1962	2 974 000 (E)	3,1
1967	3 575 000 (E)	3,8
1970	3 757 000 (R)	1,7
1971	3 642 000 (E)	2,3
1972	3 531 000 (E)	2,3
1973	4 033 000 (E)	3,1
1974	4 144 000 (E)	2,2
1975	4 234 000 (E)	2,2
1976	4 300 000 (E)	1,6
1977	4 425 000 (E)	2,9
1978	4 820 000 (R)	8,9 (a)

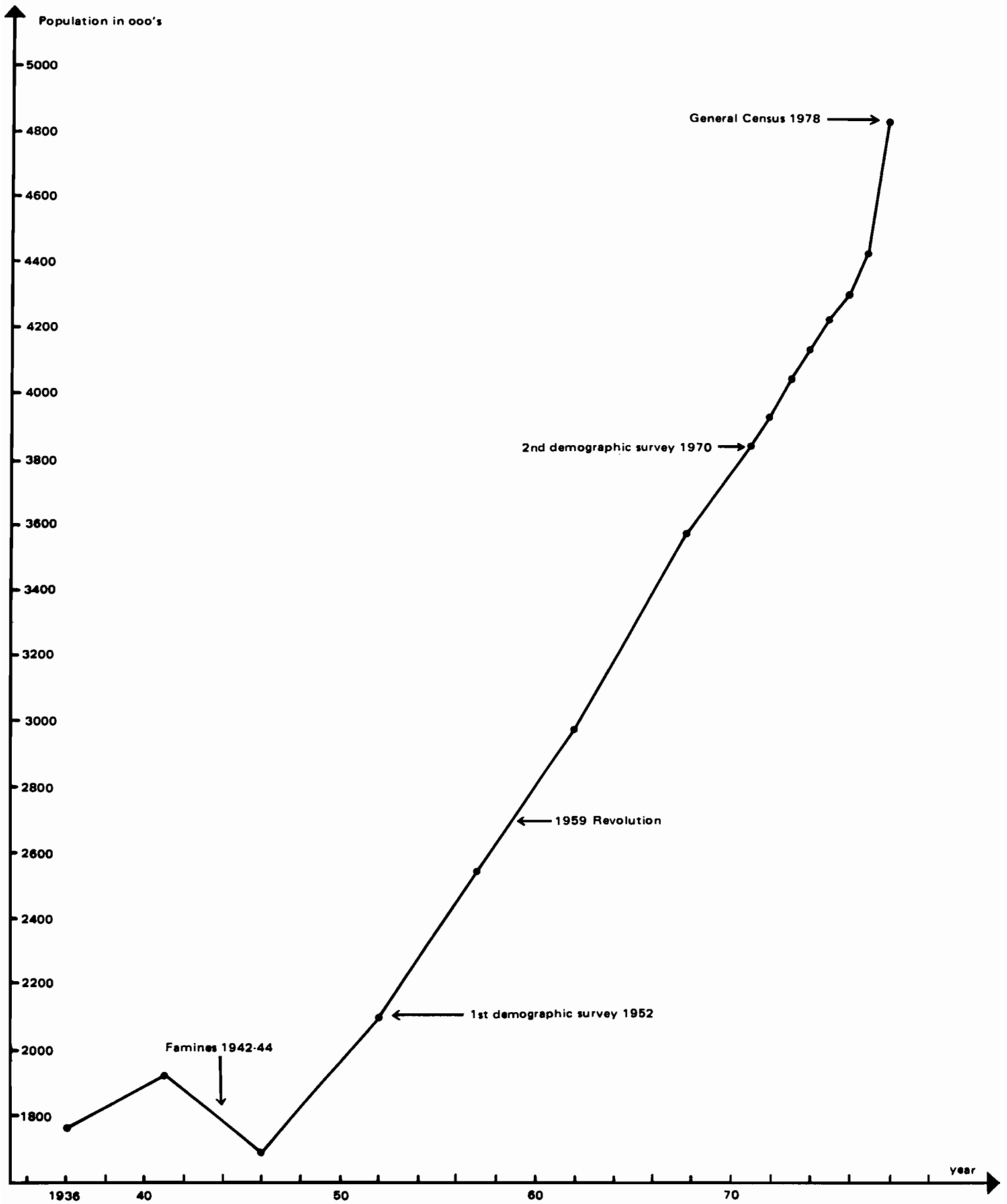
(E) Estimate

(R) Census or sample survey

(a) discrepancy between the estimate and the census

Source: Ministry of the Plan, Direction Générale de la Statistique and National Census Bureau

CHART 10
RWANDA — GROWTH OF THE POPULATION SINCE 1936



It can be seen that population growth displays two distinct periods: before and after 1950, which confirms what was said before concerning the general evolution of the population. After 1950, the mean increase rate fluctuates between 3 and 4% per annum, thus corresponding to a doubling of the population in a little less than 25 years. If this trend were to continue (as is probable) at the present fertility rate and with a decrease in mortality, the following figures will result: 5 400 000 inhabitants in 1981, 6 450 000 inhabitants in 1986, 7 740 000 inhabitants in 1991, 9 288 000 inhabitants in 1996 and 11 145 000 inhabitants in 2001.

II. SOME CHARACTERISTICS OF THE POPULATION

1) Birth rate

The birth-rate is 52 births per 1 000 inhabitants with slight variations in place and time. Prospects of a decrease in this high rate are only slight given the delay in the implementation of birth control programmes and in the light of the attitude towards fertility in this country and the young age structure of the population.

2) Death rate

The most recent data shows a substantial decrease of general mortality (less than 15 deaths per 1 000 inhabitants in 1978 compared with 20% in 1969), of child mortality (less than 80 deaths for children under one year of age per 1 000 births compared with 110% in 1969). Life expectancy at birth is above 50 years. In general, the socio-sanitary situation has considerably improved over the past few years. This is the consequence of the proliferation of rural dispensaries and medical centres, of hospitals, but above all, of the greater number of doctors and auxiliary staff (in 1966, there was 1 doctor for 120 000 inhabitants, in 1978: 1 doctor for fewer than 35 000 inhabitants; the situation being even more favourable if the number of medical assistants and nursing staff is taken into account).

3) Age structure

55% of the population is less than 20 years old, 41% between 20 and 65 years old and 4% over 65 years old. The extremely young age of the population is the consequence of the high fertility which characterises the population of Rwanda and gives rise to numerous problems. The same situation can be observed in most developing countries with high demographic growth.

4) Density

Rwanda had the highest gross population density in the whole of continental Africa with 183 inhabitants per km² in 1978. Despite the smallness of the territory and the infertility of the land in places, the physiological density reaches 1 000 inhabitants per km² in certain regions (South and North) of the country. It was mentioned above that these high densities always struck explorers of the country as early as the beginning of the century. With the increase of population in the course of time, the problems linked with a very high density of population are numerous: lack of arable land, decrease in yield, quarrels over land, etc.

5) Distribution of the population

Except for a few cases of "over-population" in many of the communes in the North and South of the country (Butare and Ruhengeri) and a certain "under-population" in the east part of the country (Kibungo), the population of Rwanda is fairly well distributed over the country. The table below shows the distribution of population by Prefecture at 15th August, 1978.

Table 84

RWANDA - POPULATION BY PREFECTURE AT 15TH AUGUST, 1978

PREFECTURE	POPULATION	DENSITY (not including parks and lakes)
Butare	601 000	323.2
Byumba	520 000	156.8
Cyangugu	331 000	162.1
Gikongoro	370 000	168.7
Gisenyi	469 000	253.7
Gitarama	603 000	268.1
Kibungo	361 000	119.3
Kibuye	338 000	336.2
Kigali	698 000	211.4
Ruhengeri	528 000	300.0
RWANDA	4 820 000	213.5

However, there is evidence of population movements (internal migration) from very densely populated regions towards those which are less populated; this is the case with migration from Butare and Ruhengeri and to a lesser extent from Gitarama and Kibuye towards the eastern Prefectures of Kigali, Kibungo and Byumba.

As for the town-country distribution, it can be stated that it is very uneven, Rwanda being an essentially agricultural country with very recent urbanisation. Indeed in 1978, only 5% of the population lived in urban centres against 95% in the countryside. Kigali, the capital, had about 120 000 inhabitants at the time compared with only 5 000 inhabitants at the time of Independence (1962). The other towns are: Butare (25 000 inhabitants), Ruhengeri (18 000 inhabitants), Gisenyi (13 000 inhabitants) and Nyanza (10 000 inhabitants).

The settlement pattern in the countryside is typical of the human geography of East Africa; a total absence of villages and the dispersal of settlements on hills with family farming around the dwelling unit (urugo).

6) Migration

Emigration has always taken place from the territory of Rwanda and the authorities have always encouraged these movements. It was stated previously that the high population densities always struck observers. These migrations which concerned mainly manual labourers took place most of the time between Rwanda and Uganda, Rwanda and Zaire, and to a lesser extent, between Rwanda and Tanzania, and Rwanda and Burundi.

Emigration was so important in the past that it was estimated that the number of natives of Rwanda, or the number of people speaking Kinyarwanda, living outside the country could equal that of natives of Rwanda living in the country.

Immigration has always been low; the number of foreigners does not even represent 3% of the total population.

III. SOURCES AND THEIR RELIABILITY

As in any developing country the available data originate from three sources: censuses, civil registration and demographic surveys.

1) Censuses

It is well known that these are very costly processes and that they require considerable financial, material and human resources, which most governments of the Third World are unlikely to be able to afford, in the absence of outside intervention.

In the case of Rwanda, no exhaustive census corresponding to the modern definition had ever been carried out before that of 15th August 1978. Thanks to the help of UNFAP, a census was carried out on that date under excellent conditions. It included a sufficient preparation period, and very competent personnel, both nationals and expatriates. In all, 36 questions were asked on residence, place of birth, ethnic group, marital status, religion, education, employment or profession, natality/fertility, general infant mortality, dwelling, etc. The processing and analysis of this data is in progress and should be completed at the latest in 1981. At the moment, only data on the total population by sex and administrative units within the country are available (see above).

The data published up to 1977 come from compilations made by the Ministry of the Interior and Planning based on civil registration data; it is for this reason that the compilations were called "administrative census".

2) Civil Registration

It was under the Belgian that civil registration was instituted at first tentatively before 1949, then in earnest after that date.

Before independence and afterwards, the system functioned well, thanks to the vigilance of the chiefs and heads of communes and the effectiveness of the clerks placed at their disposal. Declarations on births, marriages, deaths and migration were obligatory and it was necessary to observe the time limits imposed by law. The annual compilations drawn from these registers produced estimates generally close to reality. The reform of 1971 much improved the system because each head of household as well as all persons aged 18 or over had to have a record card at the Commune (basic administrative unit) on which, apart from the usual information, was noted all the socio-economic details (profession, religion, education, etc.). It is considered that in general, civil registration in Rwanda is among the most effective on the continent [1] for practically all births are recorded and more than 70% of deaths.

Another even more important reform is in course of preparation and should permanently improve the quality of civil registration in Rwanda based on authentic national legislation and judicious administrative organisation.

3) Demographic surveys

The demographic sample survey is the most important source of demographic data in Rwanda. It has already been pointed out that in 1952 the first survey took place following the generalisation of the practice among the British colonies in Africa. This was a case of a systematic survey providing, within reasonable confidence limits, demographic data relating to the total population, birth rate, death rate, population by sex, ethnic group and territory, etc.

In general, the survey which lasted all through June and July 1952, and was directed by Mr. A. d'Arian [7], took place under favourable conditions and produced remarkable results, to the extent that the procedure was recommended for use every five years with a view to gathering quality data.

The demographic survey of 1970 was carried out by the Direction Générale de la Statistique in collaboration with INSEE and ORSTOM (of France). This was also a sample survey, but this time the process and its methodology were enriched with recent experience in the field, and in french-speaking Africa in particular. In fact, each country had carried out a demographic sample survey at the beginning of the 1960's. In this way, the work carried out in Rwanda provided it with complete statistics, reliable and comparable with others in Africa.

The data gathered contain unpublished information on the size of the population, the components of its growth, the structure by age and sex, socio-economic characteristics (dwelling, religion, ethnic groups, profession, education, residence, etc.). The results of this survey served as a basis for the preparation of the Second Development Plan as well as the General Census of Population and Housing initially planned for 1976 with the collaboration of the United Nations Fund for Activities concerning Population (UNFAP).

IV. CONCLUSIONS

1) Future Projects

Projects have been planned to improve the knowledge of demographic factors; there will be a post-censal survey intended to verify the results of the census and a fertility survey which will enable the study of the impact of high fertility on the growth of the population. In addition, budget-consumption and agricultural surveys will soon be undertaken, with the purpose of assessing the standard of living of the populations. Finally, a project to reform the civil registration system is in preparation: this is aimed at adapting the present system in order to be able to capture all the data on population movements.

2) Estimate of Population on 1 January 1975

The figure published by the Ministry of the Interior and the Direction Générale de la Statistique is 4.2 million. This derives directly from civil registration operations. To check the accuracy of this figure, it is sufficient to interpolate from the figure given for 15 August 1978 (4.82 million) based on an annual growth rate of 3.5%. A figure of 4.2 million is indeed obtained for the population of Rwanda on 1 January 1975. Moreover, this constitutes an indication of the effectiveness of the civil registration system in Rwanda the improvement of which will represent undeniable progress in the provision of reliable sources of data.

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SIERRA LEONE

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AUGUST 1979



SIERRA LEONE



S I E R R A L E O N E

I. INTRODUCTION

Sierra Leone was a British territory until it gained its independence in 1961. This was not only an important political event but also marked a significant change in government policy concerning the collection, compilation and evaluation of demographic data for the country as a whole. An evaluation of the sources of demographic data and their reliability, relating to the population of Sierra Leone must therefore recognise this pre- and post-independence dichotomy.

II. POPULATION ESTIMATES BEFORE INDEPENDENCE

Before 1961, Sierra Leone was divided into two separate administrative areas; the Crown Colony which consisted of the port and its immediate environs, and the Protectorate which made up the rest of the country. The Colony was established in 1808, and the Protectorate in 1896. This nearly ninety-year gap is reflected in the availability of population figures for the two areas, because population counts were limited to the Colony area until the Protectorate was established in 1896.

1) Population counts in the Colony

The first recorded census, by actual enumeration of population, was conducted in 1881. Previous to this, censuses were held in 1861 and 1871. These however were not based on actual enumerations but regarded simply as "estimates of the population obtained by various means" [13, p. 2]. After 1881, regular decennial counts were carried out up to 1931; there was a temporary break in 1941 because of World War II, with a resumption of census-taking in 1948.

2) Population counts in the Protectorate

The Protectorate, on the other hand, does not have such a long tradition of census taking; a proper enumeration of the population was never attempted during the colonial period. Estimates of the population were made by local colonial government officers using a variety of ad hoc methods. The first of these estimates was made in 1901 and thereafter in 1911, 1921, 1931 and 1948.

3) Estimates of the population of Sierra Leone from 1901 to 1948

As a result of these differences in the historical pattern of censuses in the country, estimates of the population of the whole country, that is the Colony and Protectorate combined, are available only as from 1901 (Table 85).

Table 85

SIERRA LEONE - POPULATION TOTALS OF THE COLONY, PROTECTORATE
AND SIERRA LEONE, 1861 TO 1948

YEAR	COLONY	PROTECTORATE	TOTAL
1861	17 918	-	-
1871	37 089	-	-
1881	60 546	-	-
1891	74 835	-	-
1901	74 351	949 927	1 024 278
1911	75 520	1 324 577	1 400 097
1921	85 044	1 455 510	1 540 554
1931	96 422	1 672 058	1 768 480
1948	124 657	1 733 618	1 858 275

Source: [13, p. 21, Table V and p. 82 Table LX]
[14, Table A] for 1948

4) Accuracy and reliability of pre-independence census data

In the Colony area, where censuses were conducted by a de facto enumeration of the population from 1881, the use of unscientific statistical principles and census procedures has rendered the information collected practically unusable for analysing past demographic trends in the country during Colonial times.

The use of the "household method" for enumerating the population, which was largely illiterate, the lack of trained enumerators to check the completed questionnaires, and difficulties encountered with enumerating itinerant populations were some of the factors which introduced many errors of reporting and recording in the data collected by these censuses. Estimates of the population which are based on these censuses therefore can only be regarded as being unreliable.

In the area known as the Protectorate, censuses were generally carried out using two different methods; one for the non-native population and the other for the native population. Figures for the non-native population, normally small in number, which comprised Europeans, Asiatics and West Indians, and other Africans, were obtained by an estimate based partly on enumeration. However, for the bulk of the Protectorate population, made up of 'natives', estimates were obtained by a number of ad hoc methods. Estimates for 1901 were regarded as being of a very rudimentary character, while those for 1911 and 1921 were based on counts carried out in various villages.

For the 1931 and 1948 censuses a more ambitious scheme was adopted. Over a period of time, varying in length from three to six months, District Commissioners or their appointees visited a number of villages, selected principally because of their accessibility, and estimated the population using a number of ratios. First, the number of houses was obtained; then an average occupancy rate was determined by counting the number of persons in a sample of these houses. The information obtained from these villages, regarded as "key villages", was then used to calculate the total population for the Chiefdom using the house tax lists to obtain the total number of houses in each chiefdom.

The inherent biases of the District Commissioner, or his appointee, in his choice of sample villages and houses, and the incomplete and indifferent nature of the income tax lists, cast great doubts on the accuracy and reliability of the estimates of the population obtained.

In addition to these shortcomings, there are other factors which have tended to limit the use of these data for analysing intercensal population growth trends. Firstly, there were frequent intercensal changes in the administrative boundaries of the Colony and Protectorate. As a result, pre-independence census data do not provide a consistent basis for analysing the historical growth of the population of the two administrative divisions, the Colony and the Protectorate.

The consequences of these unscientific statistical and census procedures of the Colonial administrators are reflected in the erratic pattern of intercensal population growth rates between 1861 and 1948 (Table 86).

Although there was considerable movement of traders, civil servants, military personnel and ships crews, mainly between Britain and Sierra Leone, and a large volume of internal migration between the Colony and Protectorate, these movements do not provide adequate explanations for the erratic patterns of population growth between censuses. An overriding consideration must be the indifferent and unscientific methods of enumerating and estimating the population adopted during the colonial period.

Table 86
SIERRA LEONE - AVERAGE ANNUAL RATES OF GROWTH OF THE
POPULATIONS OF THE COLONY, PROTECTORATE AND SIERRA LEONE,
1861 TO 1948

PERIOD	COLONY	PROTECTORATE	SIERRA LEONE
1861-1871	7.5	-	-
1871-1881	5.0	-	-
1881-1891	1.9	-	-
1891-1901	0.2	-	-
1901-1911	0.2	3.4	3.2
1911-1921	1.2	0.9	1.0
1921-1931	1.3	1.4	1.4
1931-1948	1.5	0.2	0.3

There are serious errors also in the recording of estimates; some Census Reports, in a number of cases, provide contradictory estimates of the population for some years. For example, the Colony population of 1891 is reported as being 72 996 in the 1911 and 1921 Census Reports, but 74 835 in the 1931 Census Report. Again the Report of the Census of 1921 reports a total population of 85 163 for the Colony, while the subsequent reports of 1931 and 1948 report a total population of 85 044 (Table 87).

Table 87
SIERRA LEONE - DIFFERENCES IN OFFICIAL REPORTING OF CENSUS
FIGURES FOR THE COLONY, 1911 TO 1948

YEAR FOR WHICH ESTIMATE IS REPORTED	CENSUS REPORTS OF:			
	1911	1921	1931	1948
1881	-	60 546	60 546	-
1891	72 996	72 996	74 835*	-
1901	74 351	74 351	74 351	74 351
1911	75 572	75 572	75 520*	75 572
1921	-	85 163	85 044*	85 044*
1931	-	-	96 422	96 422
1948	-	-	-	124 657

* Reported Totals inconsistent with estimates recorded in actual census reports.

Sources: [11, pp. 4 and 5] [12, pp. 3 and 4] [13, p.2] and [14, p.2]

The contradictions and inconsistencies in the reporting of census totals are even more frequent and serious in the case of the population of the Protectorate (Table 88).

Table 88

SIERRA LEONE - DIFFERENCES IN OFFICIAL REPORTING OF CENSUS
FIGURES FOR THE PROTECTORATE, 1911 TO 1948

YEAR FOR WHICH ESTIMATE IS REPORTED	CENSUS REPORTS OF:			
	1911	1921	1931	1948
1901	949 827*	-	949 877* or 949 927*	949 927*
1911	1 327 560	1 327 560	1 324 577*	1 324 577*
1921	-	1 456 148	1 455 520*	1 455 510*
1931	-	-	1 672 058	1 672 058
1948	-	-	-	1 733 618

* Reported totals inconsistent with estimates recorded in actual census reports.

Sources: [11, p.4] [12, p.3] [13, p.3] and [14, p.2]

This analysis has shown that sources of population data before Independence are rather unreliable to serve as a basis for determining historical changes in the size of the population of Sierra Leone. Population estimates obtained from Colonial Census Reports are useful only for providing broad indications of the relative increases in the size of the population of the two constituent administrative areas of the country, the Colony and the Protectorate.

III. POPULATION ESTIMATES AFTER INDEPENDENCE

Independence in 1961 brought with it a more enlightened approach to population data collection in the country. Since then, two censuses, covering the entire population of the country, have been conducted. A number of national sample surveys investigating the demographic, socio-economic and agricultural characteristics of the population have also been carried out. In addition, other machinery for collecting a variety of data on the population have been established. These will now be analysed to determine their potential usefulness for estimating the size of the population of this country.

1) The 1963 Population Census

In April 1963, the first truly national population census was conducted in Sierra Leone. It was a de facto count of all persons who had spent census night in the country, and was the first time, in the history of census-taking in Sierra Leone, that serious attempts were made to use scientific and objective procedures before, during and after the actual enumeration of the population.

The census showed that the total size of the population of the country was 2 180 355 in 1963. The relative accuracy of this total was established by a post-enumeration survey which revealed an under-count of between 2 percent and 5 percent [7, vol. 1: x-xi]. Assuming an under-count of 5 percent, because of the "tendency toward under-enumeration rather than over-enumeration in an initial census" [2, p. 429], the enumerated total has been adjusted to mid-year 1963 to obtain a final total of 2 297 964 [2].

2) The 1974 Population Census

A second national population census, again involving a de facto enumeration of the population of the entire country was carried out on 8th December 1974. For this census considerable assistance was obtained from the United Nations. Concerted efforts were made to apply the definitions, principles and procedures recommended by that World Body for the conduct of population censuses.

Because of a number of technical difficulties encountered in the processing of the data, only the preliminary results have so far been published. These show that the total size of the population, as enumerated in 1974, was 2 735 159. Taking account of an assumed under-count of 10 percent, the enumerated figure has been adjusted to give a final total of 3 088 675 for 1974 [8].

However, in the absence of a post-enumeration survey, which was never conducted, there are serious doubts about the authenticity of the basis for determining the size of the under-count. In addition, in view of the experiences gained from the 1963 census and the more careful preparations made for the 1974 census, it is perhaps not reasonable to assume a bigger under-count in 1974 than in 1963. The actual enumerated total of 2 735 159, rather than the adjusted figure, is a more reliable reflection of the size of the population of the country in 1974, and should be accepted until the final figures are published.

3) Registration of Births, Deaths and Migration

A possible source of data for estimating the population size of a country between two censuses is the Register of Vital Events. Although Registration of Births and Deaths was established in Sierra Leone as far back as 1801, the system is compulsory only for the Western Area, where less than ten percent of the population live. The system also suffers from widespread under-reporting of both births and

deaths, poorly paid and inadequately trained registrars and many errors in recording the information. Vital Registration data in Sierra Leone therefore do not provide a reliable basis for estimating the size of the population between censuses.

Data on international migration are also quite unreliable. The long and unguarded land boundaries between Sierra Leone and Guinea on the one hand, and Sierra Leone and Liberia on the other, and the fact that these boundaries separate people of the same ethnic group, encourage considerable movement of people between these countries. However, most of this movement is not recorded, while existing records of 'entries' and 'departures' at the airport and sea-port constitute only a small and unrepresentative fraction of migrants across the borders of the country.

These data cannot therefore be used as a basis for estimating population size in Sierra Leone.

4) Demographic Sample Surveys

As a means of meeting the ever increasing needs for more reliable data, not only about the entire population of the country but also of particular groups within it, a number of attempts have been made to carry out demographic sample surveys. The objectives of these studies, the target population, the areas covered and their methods and techniques have been quite diverse.

Only one of these surveys, a UNICEF Country Study of the Needs and Priorities of Children, Youth and Women, conducted in 1973 by Fourah Bay College, University of Sierra Leone was nationwide [6]. While it provided detailed information on a number of demographic, social and economic characteristics of the population, the sampling procedures adopted have made it unwise to use a "raising factor to derive a global result for the country" [6, p.6]. The data obtained from this survey do not provide a basis for estimating the population size of the whole country.

5) Other Sample Surveys

Other sample surveys, not of a purely demographic nature but with considerable population inputs, have been conducted principally by the Government Central Statistics Office. These include:

- a national Household Survey, carried out in selected areas between 1966 and 1969, to collect information on Household Expenditure and Income, Economic Characteristics and Migration;
- the Agricultural Statistical Survey of Sierra Leone of 1970/71, which by its nature, had a limited scope;
- the General Household Survey (First Round) 1976/77;
- the General Household Survey (Second Round) 1977/78.

The Household Surveys provide considerable data for making detailed analysis of the socio-economic characteristics of households and household members. The Agricultural Statistical Survey, on the other hand, concentrates on farm-holders only. The sample surveys therefore do not provide adequate information for evaluating the size of the population of the country.

6) Non-conventional sources of demographic data

In addition to censuses, vital registers and sample surveys, there are a number of other sources, usually termed "non-conventional" which provide data for estimating the population size of a country. These include lists of registered voters, the results of parliamentary elections, the results of national referenda and national population registers. For Sierra Leone, three of these sources are evaluated to determine their reliability for estimating the size of the population of this country.

a) The 1975/76 Electoral Register

In Sierra Leone the list of voters includes all persons aged 21 years and over who are citizens, are not mentally ill and have no criminal record. Hence for any year, the actual population aged 21 years and over should closely be approximated by the number of registered voters, with the population aged 21 years and over being higher than the number of registered voters for any constituency or administrative area.

A comparison of the 1975/76 Electoral Register, which is the most recent compilation of voters in the country, with the projected population aged 21 years and over for 1975 reveals a number of inconsistencies. For each of the Districts, the number of registered voters exceeds the population aged 21 years and over, while for one District, Pujehun District, the number of electors exceeds the total population.

For each of the Districts a further comparison is made between:

- the population aged 21 years and over as a percentage of the total population in 1974; and
- the number of registered voters in 1975/76 as a percentage of the total population projected to 1975.

Where the data from both the Census and Electoral List are accurate these computed percentages should be closely related for each District. For Sierra Leone however, an examination of the figures reveals serious inconsistencies.

While the percentage of the total population aged 21 years and over in 1974 is 44.6 percent for the country, and varies between 40.0 percent and 50.8 percent for the Districts, the number of registered voters in 1975/76 constitutes 80.1 percent of the total projected population of the whole country in 1975, and varies between 60.9 percent and 116.9 percent for the Districts (Table 89).

Table 89

SIERRA LEONE - PERCENTAGE OF: (a) POPULATION AGED 21 YEARS AND OVER IN TOTAL POPULATION IN 1974, AND (b) REGISTERED VOTERS 1975/76 IN TOTAL PROJECTED POPULATION IN 1975 BY DISTRICTS

DISTRICTS	PERCENTAGES	
	Number of Persons aged 21 years and over	Number of registered voters
	(a)	(b)
Bo	50.1	79.0
Bonthe (including Sherbro U.D.)	50.8	74.3
Moyamba	49.4	78.5
Pujehun	49.6	116.9
Kailahun	47.0	88.5
Kenema	48.8	90.8
Kono	43.3	73.9
Bombali	40.2	73.9
Kambia	41.9	85.0
Koinadugu	41.0	75.8
Port Loko	43.1	81.6
Tonkolili	41.4	89.7
Western Area	41.2	60.9
TOTAL	44.6	80.1

These inconsistencies can be due either to errors in the 1974 census data or in the 1975/76 Electoral Register. However, because of the rather lax procedures used for registering voters in the country, there is no doubt that these observed inconsistencies have arisen because of the gross distortion and considerable inflation of the Electoral Register. On the basis of the 1975/76 Electoral List, the population size of the country in 1975 has been estimated at 5 011 220, giving a growth rate of 7.2 percent per annum from 1963. This is quite unacceptable, and confirms the serious inaccuracies of the 1975/76 Electoral List.

b) The National Population Registration

The registration of all citizens and non-citizens, aged 16 years and over, was instituted in Sierra Leone by the National Registration Act of 1974. Although the objectives of the registration are non-demographic, some of the information required can be used for studying a number of characteristics of the population. Information is required, for example, on the age, sex, marital status, occupation and level of education of the applicant. Questions on place of birth can also be used for studying both international and internal migratory patterns.

However, the potential usefulness of the National Population Registration as a basis for estimating the population size of the country is limited by a number of factors. Apart from excluding the population aged under 16 years, which according to the 1974 Population Census make up 43 percent of the population, registration in the different administrative regions is still far from completed. In addition, there are serious doubts about the efficiency of the interviewers who collect and record the information, while the incidences of omission on the one hand and double registration on the other are known to be quite high. The National Population Registration is, as yet, of no practical use for estimating the size of the population of Sierra Leone.

IV. SUMMARY AND CONCLUSIONS

Sierra Leone, unlike many other African countries, has had a long history of census-taking. The two post-independence national population censuses, of 1963 and 1974, provide fairly reliable data on the size of the population of the country, and serve as the basis for making projections of the future size of the population. Because of the absence of reliable data on the population for the whole country from other sources, practically all analysis of its population characteristics including the size, distribution, composition and movement of the population, must be based on data from these two censuses.

A comparison of the enumerated population between 1st April 1963 and 8th December 1974, indicates an annual rate of growth of 2.0 percent. This may seem a low rate of growth especially when compared to other West African countries, but it may in fact reflect the genuine consequences of high rates of mortality, especially of infants and children, which have been observed in the country [4, p.iv], [6 p.46] [16, p.6].

When the detailed results of the 1974 census become available they will provide the basis, in conjunction with other methods of demographic analysis, for estimating current and future population trends and for providing more reliable estimates of the size of the population until the next National Census which becomes due in 1984.

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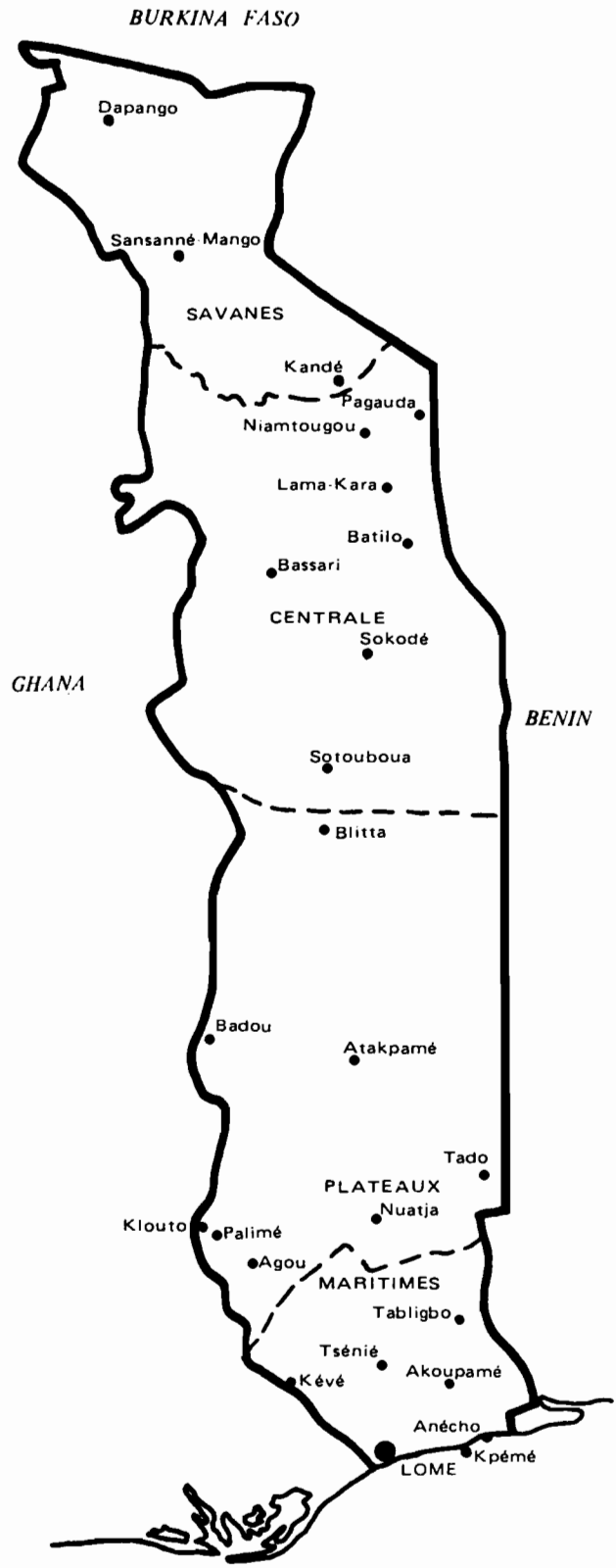
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TOGO
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TOGO



T O G O

I. INTRODUCTION

Togo inherited its present day frontiers from the negotiations between England and France after the First World War over the partitioning of the former German "Togoland". The western part of this territory was placed under British mandate and was later united with the Gold Coast. It was the French Togoland which became the Republic of Togo in 1960.

The first estimates of the population of Togo within its present day frontiers were made after 1920. The German administrative authorities left no information about censuses or regional estimates which could make it possible to assess the population of the territory entrusted to France in 1919.

Under French mandate, nominal censuses took place between 1921 and 1931, followed by periodic updates by region. It is only after 1958, when Togo was established as an autonomous republic, that the first census was carried out (spread over the period from 1958 to 1960), followed by a sample survey in 1961. The second national census took place in April 1970 and was followed by a post-enumeration survey in April 1971. A third census is scheduled for December 1980.

II. SOURCES OF DATA AND CRITICAL STUDY**1) Censuses in the colonial period**

From 1921 onwards, France, as protecting authority in Togo, occupied itself with the enumeration of the population and also, by rudimentary means (most of the time surveys made by military doctors) in the study of natural population change. From 1921 to 1936, the "Rapports du Gouvernement Français à la Société des Nations sur l'administration des territoires du Togo" regularly devoted a chapter to demographic statistics. From 1937 until 1957, date of the last "rapport", only statistical tables of population size are found without any analysis or detailed account, as was the case in the early period.

a) Critical study of administrative censuses

Chart 11 and Table 90 show the successive estimates of the population of Togo as from 1922. From an estimated figure of 727 741 in 1922, the population of Togo under French mandate was evaluated at 1 092 889 in the middle of 1957.

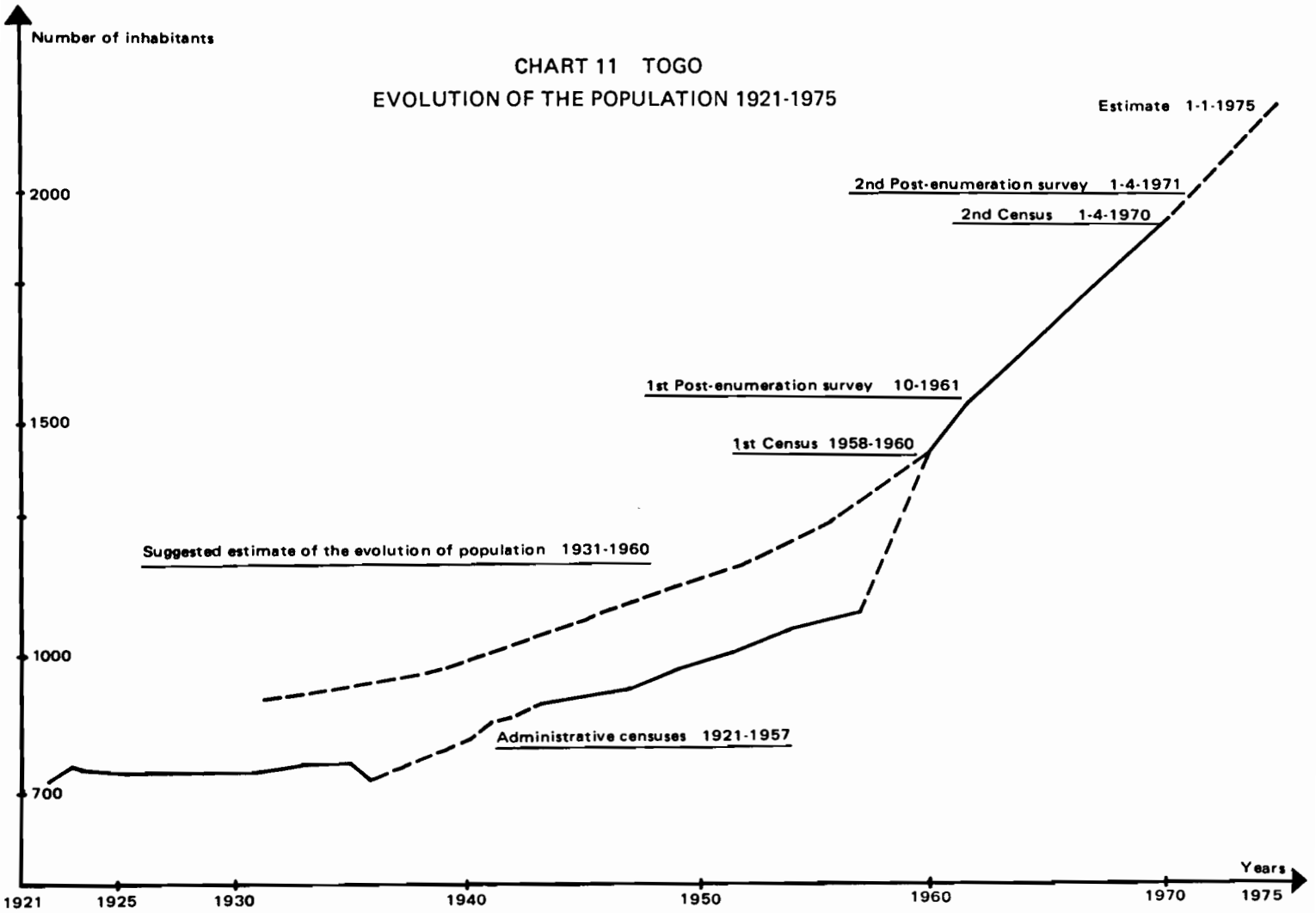
Table 90
TOGO - SUCCESSIVE ESTIMATES OF THE POPULATION BETWEEN
1922 AND 1957 - ADMINISTRATIVE CENSUSES

YEAR	POPULATION	YEAR	POPULATION
1922	727 741	1940	818 315
1923	762 208	1941	850 219
1924	747 139	1942	864 697
1925	744 285	1943	893 440
1926	742 428	1944	899 614
1927	747 146	1945	912 425
1928	747 146	1946	918 644
1929	730 575	1947	921 884
1930	725 580	1948	944 446
1931	749 419	1949	971 824
1932	750 995	1950	982 263
1933	753 300	1951	998 660
1934	762 156	1952	1 014 669
1935	762 947	1953	1 029 946
1936	735 606	1954	1 052 318
1937	763 360	1955	1 069 584
1938	780 170	1956	1 084 032
1939	?	1957	1 092 889

Source: Administrative censuses cited in [4] and [5]

The estimates shown in Table 90 are those of the "indigenous" population; foreigners, mainly French and Lebanese, account for only a small proportion of the population (from 2 to 3 000 people) during the period French mandate.

CHART 11 TOGO
EVOLUTION OF THE POPULATION 1921-1975



b) Critical study of administrative censuses

Over the decade 1920-1930, the French Government progressively enumerated the population, area by area, and it was not until 1931 that the population census could be considered by the administrative authorities as "complete".

In the report for 1924 [4, p.101], enumeration activities are described as follows:

" A population count will probably have been achieved by 1926 in the areas around Lomé, Atakpamé and Sansanné Mango, but not before 3 years in Sokodé. The conditions in which these activities are carried out require a great deal of patience."

"Depending on the size of the wards and the density of population, censuses have been carried out either by the administrative staff alone, or by native agents under the control of travelling officers. Each village chief is notified beforehand, and he gathers the inhabitants on the appointed day in the village square in the shade of the trees. The families are grouped separately and are presented by their chief. Frequent discussions occur over cases where declarations made are plainly inaccurate; then, the respondent must be submitted to close questioning in order to bring him to divulge the exact composition of his family."

"In fact, the natives generally loathe providing this kind of information, whether by natural carelessness, or intentionally, in order to avoid payment of personal taxes. Under such conditions, one can imagine how slowly the census is carried out."

This description given by the French authorities themselves underlines the approximative nature of the population estimates and the inevitable under-estimation of such counts.

In 1926 [4, p. 71] a control in one village shows an under-estimate by 13% in the count of the previous year. Further calculations (see paragraph III.2) show that the under-estimate was certainly even greater.

2) Medical and demographic surveys in the colonial period

In the reports published from 1921 till 1934, demography remains an important topic. In them there can be found not only regional population estimates but also detailed accounts, often by military doctors, of natural population changes. In each area, surveys were carried out on the lifetime fertility of older women and the number of their children still alive at the time of the count.

Unfortunately, these "surveys" show little consistency and it is impossible to draw from them "probable" tendencies of natural population change during the colonial period. The authors' observations vary from one year to another - depending probably more on the individual's personality or the coloniser's political views than on clearly established statistical indications. Moreover, the permanence of two objectives underlying most of the demographic chapters can be distinguished:

The first one is to safeguard the "image" of the protecting government, the second is to make sure that the population is seen to be growing, as the country was always considered as under-populated by the colonial authorities.

In order to achieve the first objective, emphasis is placed on the progress realised in the field of mortality - but with the help of rather questionable statistics. The report of 1922 deplors that "50% of children die before their fifteenth birthday" (probably below the true figure) but in 1924 the "Rapport" acknowledges with satisfaction that "child mortality does not exceed that of some European countries". [4, p.33]

Efforts are also made to prove to the League of Nations that migratory movements towards the Gold Coast were negligible to bolster the idea of good administration of Togo by France (these movements are however confirmed by most of the observers of that period).

Growth of population seems to have been a constant preoccupation of the protecting government whose comments on this subject are clearly populationist. By means of various distributions into large groups or surveys on the offspring of smaller groups of older women, the protecting government endeavoured to classify the regions in terms of whether they were "progressive" (that is to say in terms of demographic growth) or not. The reports underline the numerous offspring of women, a sign of the "vigour of the race". Incidentally, during the first years of the mandate, a warning is given of the damage caused by syphilis against which a medical campaign was led, aimed at fighting sterility. According to the medical reports, the total number of children of the women interviewed averaged 4 to 5, which seems below the real figure. In 1931, the date by which "demographic surveys" were, according to the administration, sufficiently extensive, the natural increase rate varied between 6% and 19% from one area to another. A natural increase rate of around 1% for the decade 1930-40 could probably be accepted as plausible.

In any case, the mass of information contained in the medical reports published between 1921 and 1939 should be treated with a certain reservation by the demographer as the data are too imprecise to provide a basis for trustworthy estimates.

3) Statistical censuses

a) The first General Population Census 1958-60 [8]

The first General Population Census, which was undertaken as soon as the territory became autonomous, had to be spread over time for material reasons. Urban centres were enumerated first, from November 1958 until July 1959, then the rest of the territory, from November 1959 until December 1960. The de jure and de facto populations were recorded. It is the former which are used here. After adjustments had been made to reduce the effects of the spreading of

the census over two years, the population of Togo was estimated at 1 440 000 as at 1st January 1960. The great disadvantage of this first census is this spanning over two years which militates against the validity of the overall results. Despite this, the training of the interviewers, and the care with which counting was carried out, give a relatively good impression of this first demographic collection.

As regards the number of foreigners living in Togo, this cannot be assessed from the published tables as they do not list inhabitants by nationality of origin but by ethnic groups. Furthermore, these ethnic groups often overlap the colonial boundaries, which makes it difficult, even impossible, to distinguish between foreigners and nationals. In contrast, residents are classified according to whether they were born abroad or not. In 1960, around 4% of residents outside urban centres and 21% of the 138 000 inhabitants in the urban centres were not born in Togo; that is a total of 80 000 people.

It is just as risky to try to estimate the number of Togolese living abroad. It is well known that the Togolese (like the Camerounese) provided a large number of employees and administrative agents in the French-speaking countries of Africa. However, the majority of emigration has been directed towards Ghana (previously called Gold Coast), a rich country where the exploitation of cocoa provided numerous jobs and where there was no "forced labour" (various chores imposed by the authorities) as was the case in French Togoland. The Census of Ghana in 1960 [3] gave detailed information about foreigners living in its territory. The Togolese represented one of the most important groups of foreigners. In 1960, there were in Ghana 280 000 people of Togolese origin of which 104 000 were born in Ghana and 176 000 abroad. It is the latter group which had migrated, as the people of Togolese origin born in Ghana are for the most part children of migrant families. Therefore, more than 12% of the population of French Togoland lived in Ghana in 1960.

Foreigners living in Togo are therefore included in the census whereas the Togolese living abroad are excluded from the enumeration. The same measures will apply to the assessment of population during the 1970 census.

b) Second General Population Census [7]

In 1970 Togo launched, with its own resources, its second national census. The shortage of facilities raised a few problems but nevertheless collection was completed after 2 months (March/April 1970). The population (including residents present and absent) was estimated at 1 950 646, giving a mean annual growth rate of 3% during the intercensal period 1960-1970. However, it must be noted that the population enumerated during the 1970 census had been inflated by the sudden return of 75 000 to 80 000 Ghaneeo-Togolese driven out of Ghana at the end of 1969 by the "Alien Compliance Order" (1).

(1) Legislative measure taken against foreign residents in Ghana and which hit particularly the Togolese who had settled there.

It is generally admitted that a number of these "refugees" subsequently re-crossed the border, but there are no figures on the size of this movement.

The quality of the personnel directing this census, and its careful preparation, offer a satisfactory guarantee of its statistical validity. There were difficulties to deal with, especially on the financial side, during fieldwork.

The problems posed in this collection are described in detail in the first volume of the 1970 Census. Furthermore, an account of the implementation of this census is in the course of publication [1]. Therefore, the details of the evaluation of the population at that date will not be described here.

4) The post-enumeration surveys

The first two censuses of Togo were followed by post-enumeration surveys in 1961 and 1971 respectively, which allows for very interesting comparisons and checks on the consistency of the data. It was during the course of these surveys that data were gathered on natural population change.

a) Demographic Survey 1961 [2]

This first post-enumeration survey took place between August and December 1961, with different sampling fractions according to the types of population (1/5th for Lome, 1/10th for centres with more than 4 000 inhabitants, 1/20th for the rest of the country). This operation seems to have been of a better quality than its predecessor if only because of better timing. One interesting measure was taken during the 1958-60 census: each enumerated person had been provided with a "census form" which was subsequently examined by the enumeration agent, making it possible to establish to some extent a check of the census at the second round.

The 1961 survey estimated the rate of natural increase of the Togolese population at 2.6%, which would have resulted, on the basis of the population estimated at 1 440 000 during the first census, in an "expected" figure of 1 507 000 on 31st December 1961. In fact, at that date, the estimate obtained from the demographic survey is 1 544 000, the difference being attributable to enumeration errors, random sampling errors in the survey or to a positive migration factor, or more probably to a combination of the three elements.

The checking of forms for the 1958-60 census gave, after calculation of natural population changes, a total of 52 000 persons "without forms", a figure which, if lost forms are taken into account, is not far from the difference noted above.

b) Demographic Survey 1971

The double enumeration system set up in the 1960s was retained for the 1970s, but the 1971 survey took the form of a multi-round survey at one-year interval (March-April 1971) to estimate population change, which represents a step forward in statistical collection techniques. In the opinion of K. Adognon [1], there may have been a mean interval of 10 rather than 12 months between the two periods of observation. That, at least, can be deduced from the adjustment of raw data on fertility during the period. The principal technical problem during this second survey was the difficulty in re-locating a certain number of compounds; this problem could only be solved by assuming that the "missing" compounds were on average not different from those which were found again, an assumption which, strictly speaking, is probably not justified. The 1971 survey showed the Togolese population amounted to 2 017 000 at that date, or more exactly, in the range $\alpha = 0.05$ between 1 967 000 and 2 066 000 inhabitants.

By comparing the two enumerations of 1970 and 1971 according to the multi-round survey technique, a death rate of 18.8% was obtained and a birth rate of 45.3% giving a natural increase rate of 2.65%, identical to that of 1961. The rates observed in 1961 (birth rate: 55%, death rate: 29%) led to the same natural increase rate. As will be seen later (paragraph III), the inter-censal increase rate gives the same result. Although the significant discrepancy between both birth and death rates between the two dates seems to be due to imperfections in recording, it appears that the natural increase is more or less at the level given by the two enumerations.

5) Census of the "Service National du Paludisme" (National Office for Malaria) (1965-1977)

In order to plan its prevention measures, the "Service National du Paludisme" undertook a census of overall population independently of the Statistical Office, which spanned the period from 1965 to 1977, two or three districts being covered every year by a team of agents from this office. From the point of view of the assessment of total population, this type of collection is rather inefficient.

Moreover, the distortions observed for certain districts suggest that the administrative divisions which have been used by the "Service National du Paludisme" and the "Statistical Office" (Direction de la Statistique) do not match perfectly. For example, it is surprising to note a large divergence between two evaluations made at about the same time of the population of the district of Lomé:

Service National du Paludisme (1969)	304 974 inhabitants
Service de la Statistique - Census 1970	229 305 inhabitants

This case study therefore does not include the information found in the census of the Service National du Paludisme. It can be mentioned, however, that the total population estimate carried out in the middle of 1970 on the basis of the above information led to a population figure of 1 976 000 which is rather close to that found by the census.

The various data sources available for Togo and their main characteristics are shown in Table 91 below:

Table 91

TOGO - SYNOPTIC TABLE OF SOURCES FOR POPULATION ASSESSMENT

Nature	Date of collection	Sampling rate	Observed population	Comments
Administrative censuses colonial period	Annual 1921-1927	Exhaustive	Exhaustive	Large under-estimation
Medical surveys, various estimates of natural population change	1921 to 1936	Variable - Surveys made on reduced samples - non-probabilist	Variable - visitors to medical centres	Inconsistency of estimates from one year to another. Improbability of results rather frequent
1st Population census	11/1958 7/1959	Exhaustive	De jure and de facto population	First reliable assessment of population but spreading in time prejudices data accuracy
1) Urban centres				
2) Outside urban centres	11/1959 12/1960	Exhaustive	De jure and de facto population	
1st Post-Enumeration Survey	8/1961 12/1961	Lomé: 1/5th, Towns 4 000 and more inh.: 1/10th, other centres: 1/20th	De jure and de facto population	Estimate of population superior to that expected on the basis of the results of census
2nd Population census	3/1970 4/1970	Exhaustive	De jure and de facto population	
2nd Post-Enumeration Survey	3/1971 4/1971	1/10th Urban centres 1/20th other centres	De jure and de facto population	
Census of the Service National du Paludisme	1965-1977	Exhaustive	De facto population	Spreading in time makes these observations much less interesting

III. POPULATION FIGURES AND SUGGESTIONS FOR FUTURE ESTIMATES

As has been seen, the Republic of Togo is not among the worst endowed of African countries as far as demographic enquiries are concerned. At present, two national censuses carried out in 1960 and 1970 respectively are available, and two post-enumeration sample surveys. These four studies offer statistical guarantees sufficiently reliable to be used as the basis for the evaluations below.

These will be done backwards: the best estimate of the Togolese population is provided by the 1970 census, that is 1 950 000 inhabitants. The evaluation of 1971: 2 018 000 inhabitants inevitably contains a measure of random error and it is preferable to stand by the evaluation of 1970. Although it was probably of inferior quality and may notably have under-estimated the population present, the figure of 1 440 000 inhabitants at 1st January 1960 given by the 1958-60 census will be retained from the earlier enumerations.

The mean annual inter-censal growth rate calculated between 1st January 1960 and 1st April 1970 (mid-point of the 2nd census) is 3% (1). It has been mentioned earlier that 1969 had witnessed the sudden return of Togolese people who had been long established in Ghana. The tables of the Togolese census include a breakdown of repatriates from other countries, classified according to the length of their stay and their age. Those who have lived outside the country for more than 10 years and repatriates less than 10 years old are, by definition, considered as immigrants during the inter-censal period.

61 500 repatriates fit into one or other of these criteria. This number ought therefore to be subtracted from the population figure of 1970 so as to obtain an estimate of the mean annual increase closer to that of the mean natural increase rate.

This second calculation gives a mean annual inter-censal rate of 2.6%. The fact that this rate is identical to the two natural increase rates calculated in 1961 and 1971 does not place it beyond reproach. It may have resulted from a series of coincidences. The inter-censal rate calculated in this way includes natural population change and migrations. If it is in fact identical to the natural increase rate, this means that the balance of migrations during the period is negligible (excluding for the present the return of the Ghaneo-Togolese). Moreover, the 2.6% natural increase rate observed in 1961 and 1971 is not beyond criticism. In the light of observations made in the 1970s, it appears likely that the estimate of 1961 (birth rate: 55‰, mortality rate: 29‰) suffered from over-estimation due to the "telescopic effect" resulting from responses on the events of the previous twelve months. In general, it is known that in demographic surveys, death rates are more inclined to suffer from under-estimation than birth rates. It is suggested, therefore, that the natural increase rate of Togo must be of the order of 2.5%; the 2.6% figure being considered as a maximum. If mortality rates decrease, the above rate should be maintained or increase very slightly during the decade 1970-80.

(1) $P_{1970} = P_{1960} (1 + r)^{10.25}$ where "r" = mean annual increase rate.

The mean annual increase rates between the two sample surveys of 1961 (mid-point 1st October) and 1971 (mid-point 1st April) have been calculated for completeness. The results are as follows:

- gross mean annual rate of increase: 2.8%
- mean annual rate of increase (repatriates excluded): 2.5%

These estimates are subject to the random error appropriate to each of these two surveys.

1) Evaluation as of 1st January 1975

In the absence of more accurate information, it is assumed that the return of Ghaneo-Togolese people to Ghana since 1970 has not been very substantial and that the annual increase rate during the period 1970-1975 was 2.6%.

Under these assumptions, the population of Togo at 1st January 1975 would have amounted to 2 203 500. Forecasts by sex and age based on the assumption of stable fertility and decreasing mortality give an identical population figure for 1975 (1). The precision of this figure is deceptive and, according to circumstances, it can be estimated that the actual population must have been between 2 150 000 and 2 250 000.

2) Retrospective assessment of the Togolese population

Assessments given by administrative censuses are the only sources of information available on the Togolese population between 1921 and 1960. It can be stated in addition that:

- the colonial period was marked by a notable migration towards Ghana.
- the natural increase rate was very low between 1920 and 1930, possibly around 1% towards 1930 (see paragraph II 1b above) and probably close to the rate observed in 1961 during the years 1955-1960
- there was a significant under-estimation in the administrative censuses
- this under-estimation must have been the result of a certain strategy on the part of the population and the village chiefs in particular. It can be assumed that they reckoned more or less intuitively the proportion of people that they could realistically "conceal" from the colonial administration. Once the nominal lists (censuses in Togo were nominal) were established, they had to be referred to from one year to another. It may be supposed that the margin of under-estimation must have been more or less of the same order each year. For want of better information, this hypothesis will be retained in the re-estimation of the population before the "statistical period".

(1) Unpublished forecasts calculated by the authors. Hypothesis: steady fertility (1961 level). Decreasing mortality should result by 1985 in the following levels of life expectancy: 44 years for men and 50 years for women.

To assess the rate of under-estimation, the population in mid-1957 has been recalculated on the basis of:

- the population figure at 1st January 1960
- a mean annual rate of increase of 2.5%

and the figure obtained: 1 328 000 has been compared with that mentioned in the "Rapport Annuel du Gouvernement Français à l'Assemblée des Nations Unies" of 1957, that is 1 092 889. The ratio of administrative census population to probable population is 0.823. The inverse of this ratio has then been applied to the estimate of the Togolese population made in the administrative census of 1931. The reason for selecting this date is because, in the view of the directors of the "Rapports Annuels du Gouvernement Français à la Société des Nations", it is the date at which a full population census was achieved for the first time.

In this way, a new estimate is obtained of the population at that date based on the following formula:

1931 Administrative census population \times $1/0.823 = 903\ 000$ inhabitants

This re-estimation leads to a mean rate of increase of 1.6% for the period 1931-1960. If emigration to Ghana is taken into account, it could be argued that the Togolese population on the territory in 1931 was slightly more numerous.

In Chart 11, taking account of this re-estimation and the assumptions made regarding natural increase, an attempt has been made to draw a plausible curve of the evolution of population between 1931 and 1960.

In Table 92, the statistical assessments of population between 1960 and 1970 are recalled and the estimates which were set forth above. Table 93 gives a summary of estimates available on population growth.

3) Suggestions for the improvement of sources

Togo is in the process of preparing for the 1980 census and hopefully the lessons of the 1970 census will be taken into consideration in its design as far as collection is concerned. In particular, it would seem important to be in possession of detailed maps of the survey sectors so as to avoid "losing" settlements and villages, and to further diminish the observation period in the field so as to meet the criterion of simultaneity.

Table 92
TOGO - POPULATION FIGURES. RECENT EVALUATIONS,
RETROSPECTIVE ESTIMATES AND FUTURE PROJECTIONS

DATE	NATURE OF THE EVALUATIONS	POPULATION
1931	Administrative census	749 419
	Re-estimation with % of under-estimation	903 000
6/1957	Administrative census	1 092 889
	Re-estimation based on the 1961 results	1 328 000
1/1/1960	1st Census	1 440 000
1/10/1961	Post-enumeration survey	1 544 000
1/4/1970	2nd Census	1 950 600
1/4/1975	2nd Post-enumeration survey	2 018 700
1/1/1975	Forward projection	2 203 500

Table 93
TOGO - MEAN ANNUAL RATES OF INCREASE AT VARIOUS PERIODS

PERIOD	SOURCE OF ESTIMATION	ESTIMATION
1931-11/1960	1931 re-estimation - 1960 Census	1.6%
1960 1/4/1970	Raw population in censuses 1960-70	3%
	1960 Census - 1970 Census excluding repatriates from Ghana	2.6%
1/10/1961 1/4/1971	1961 and 1971 Demographic Surveys	2.8%
1/10/1960 1/10/1961	12 month natural increase preceding 1961 survey	2.6%
1/4/1970 1/4/1971	Natural increase period between 1970 and 1971 survey	2.6%

To these recommendations of a practical nature are added a few others relating to the analysis and publication of data. However much the 1970 census of Togo can be considered as a success in the field, the analysis of data provided has been disappointing. Analysis of results has not yet started in certain fields. The principle of the post-enumeration survey is excellent, but various obstacles in coding and data processing have seriously delayed the publication of the results concerning population change. There is still no official publication of the results of this survey, and any analysis which could be drawn from it now would be of purely historical interest.

In future, a global programme encompassing not only field-work but also coding, counting, analysis and publication of results should be instituted. It seems desirable that this overall programme should be implemented by means of an overall budget in order to avoid successive operations being carried out in fits and starts as and when money is provided.

Finally, with regard to the estimate of natural increase and migratory movements, it is suggested that the Direction de la Statistique undertake a follow-up survey on a random sample of population centres every 3 years. A judicious stratification of the baseline survey represented by the census, and a rational use of infrastructure and of the staff of the Direction de la Statistique should ensure that these activities are carried out at relatively modest cost.

The lessons which could be drawn from such a survey on the mobility and growth of population could largely justify the outlay.

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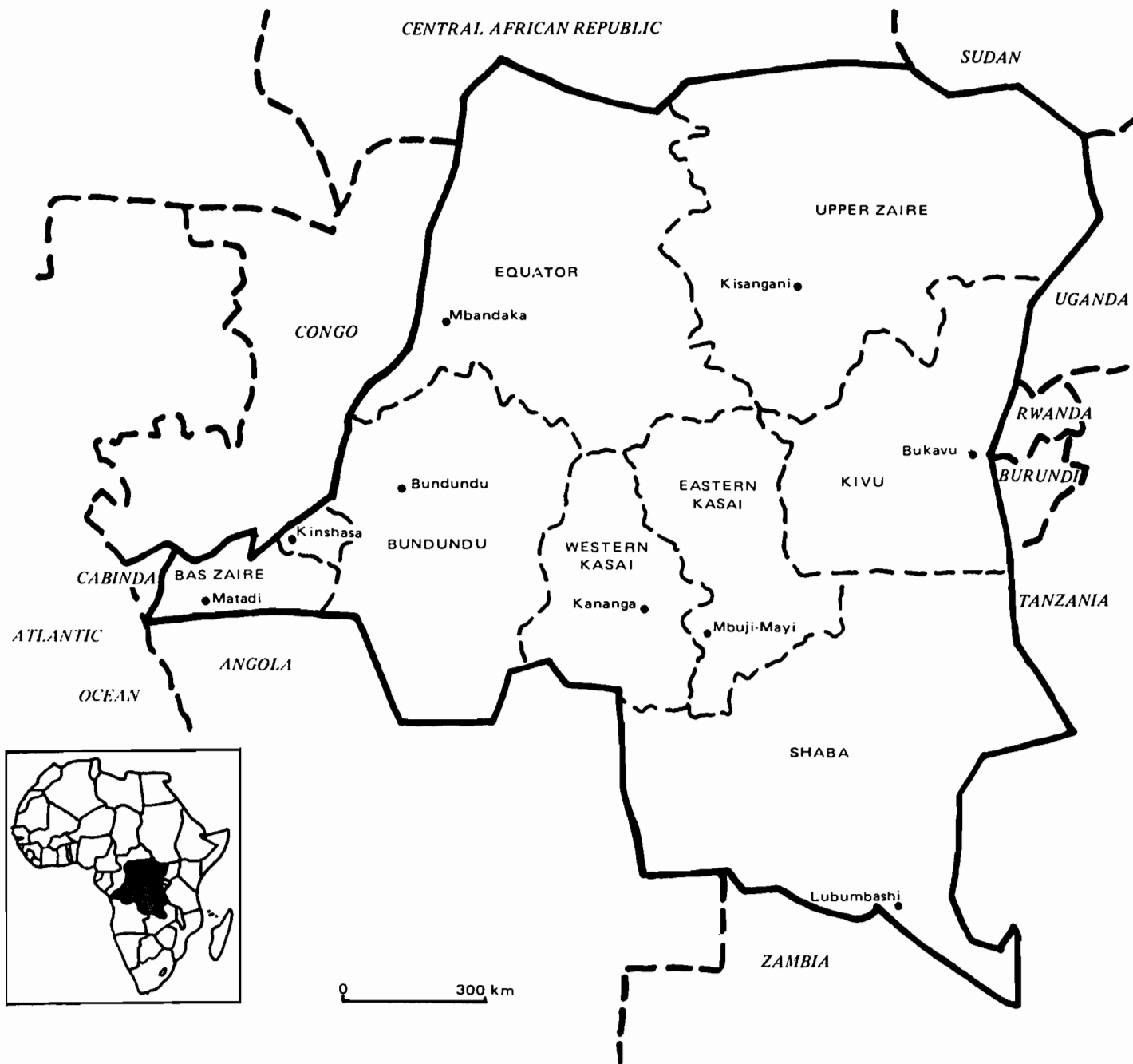
ZAIRE

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ZAIRE



Z A I R E

The history of Zaire is usually divided into three periods:

- from the first expedition to annexation by Belgium
- the Belgian colonisation
- from political independence to the present

I. FROM THE FIRST EXPLORATIONS TO THE ANNEXATION BY BELGIUM

The estimates of population of Zaire at the end of the last century are derived mainly from narrative accounts or from summary and very limited observations. They are in any case very biased. The opponents of colonisation minimised the population of Central Africa: "Four million negroes running around naked, who neither work nor need to, this is what, if we are to believe the Congobters is going to save out trade....and our coal fields" [34, p.141]. On the contrary, explorers and colonial agents underlined the importance of their discoveries or of their role by stating very high population figures. As far as Zaire is concerned, the most influential estimate has been that of Stanley. In 1885, he gave a table of inhabitants encountered on the shores of rivers he had explored from 1879 to 1884. At the bottom of a list of 94 figures he proposes a total of 806 300 people for an area stretching 2 422 kilometres (1 515 miles) in length and 16 kilometres (10 miles) in breadth. Reckoning there to be a comparable density in the whole of the upper basin of Zaire, estimated at 1 744 000 km² (1 090 000 square miles) he concluded there to have been a total population of 29 million inhabitants. The unrealistic nature of this estimate is all the more obvious as the shores of rivers are usually more heavily populated than inland areas. Furthermore, no one seems to have noticed a calculation error (1 515 x 2 = 2 030) which, in the English edition brings the population of Zaire to 43 294 000 (1). It is nonetheless certain that Zaire was relatively highly populated around 1880. The degree of technical progress as well as the importance of certain socio-political organisations are good indicators of this. The decline of the population until the 1920s is also well established.

Another established fact is that the population density around 1880 was already more or less structured as it is today, apart from the towns. This can be ascertained by examining the brief docu-

(1) This error, silently corrected in the conversion into kilometres in the French translation, was mentioned by J. Stengers [30].

ment already published in 1898 in a geography of Congo [1, p.55]. This similarity is linked with a territorial organisation which was to be largely adopted by the colonial authorities. Thus, the mining area of Shaba contained 74 active mines on a map of 1907, whereas the famous "Union Minière du Haut-Katanga" had only been set up one year before, and the railway line which allowed the colonial "development" of this part of Zaire only reached its capital Lubumbashi in 1910. Besides, this industrial basin was already linked in the pre-colonial period by a network of tracks to the nuclei of dense population of Kasai and around Dilolo [1].

The decline of the population at the end of the 19th century and at the beginning of the 20th century was largely a result of diseases introduced or spread through Arab penetration and colonial occupation. Sleeping sickness and smallpox were spread in virulent waves from endemic areas by the colonisers and wiped out entire villages. In Zaire, sleeping sickness developed on an alarming scale from 1897, probably starting from the Equator, and remained a constant danger until after 1930 [8], [24, pp. 132-133]. Venereal diseases played a less well known, though considerable, role. They caused a decline in fertility which was catastrophic in the central basin and on the plateau of Uele until the 1950s [20], [23]. More generally, the exploitation techniques of the Independent State of the Congo (1885-1908, especially from 1892 onwards) hindered demographic growth. A land law of 1 July 1885 gave colonial domain status to all "vacant" territory not actually occupied at that time by Africans. This often resulted in inhabitants being dispossessed of their best land and it allowed the state to co-opt their labour for itself or for private companies. These measures led to the neglect of staple food cultivation and to local famines. Besides, the more or less forced recruitment of the young, male and healthy population to satisfy the growing need for soldiers and workers, separated temporarily numerous couples and debilitated the population. The situation is described in gloomy terms in an official report of 1920:

"The continuous depopulation of Central Africa since it has been occupied by Europeans is a very real fact (...) I believe that sleeping sickness is the main cause of depopulation in the Congo basin (...) It is by opening communication paths from the coast towards the hinterland that Europeans unwittingly spread the disease (...) The war compelled the Government to interrupt its fight against the disease in many places (...) But the picture is even gloomier. Our occupation and the introduction of trade have altered the lifestyle of the native population in many regions and has diminished their vitality (...). Since the beginning of the European occupation, the population of Congo has been steadily decreasing as a consequence of a high mortality (...) to such an extent that it would not be an exaggeration to say that it has been reduced by half". [18, pp. 652, 653, 657 and 660].

A few years later, a very observant doctor confirmed this analysis:

"Everyone is talking of a steady decrease in the population of Congo. In the absence of any complete or reliable census on one hand, and of any civil registration on the other, this decrease cannot be scientifically demonstrated. It nevertheless remains an obvious fact for many observers who have lived a long time in certain regions of Congo. If, despite this steady decrease, we reckon there are more natives than is believed, this only means that there were formerly so many people that despite their decrease there remain at the moment many more than we suspected. What are the causes of this depopulation? We have noted that the commonly acknowledged causes of low natality, high mortality and polygamy are not proven and do not stand up to critical analysis. There remain epidemic diseases and foremost sleeping sickness which has depopulated and still does entire regions of the Colony. Everyone knows that this disease has been spread in the colony as a result of European penetration. But what is not commonly known, and is not admitted by those who do know it, is that the main cause of the depopulation of Congo is the European penetration itself. The natives cannot put up with the 'European civilisation' and its consequences: portage, permanent work, sudden change in diet, transplantation into new surroundings, in short, the recruitment of workers from one area into another. This is where the cause of depopulation lies" [27, pp. 322-323].

This obsession with depopulation persisted a long time in the colonial world. The organisation of the large demographic surveys of 1955-1957 was spurred by the dread of labour shortage. It is not possible to produce numerical evidence, but if one supposes, as will be suggested, that the population of Zaire was of the order of 10 million inhabitants in 1930, it seems certain that it must have reached 15 to 20 million towards 1880. The introduction of modern medical techniques, the halting of tribal struggles, the banning of trials by ordeal or other practices leading to avoidable mortality were of little significance compared to the factors of demographic regression mentioned above during the existence of the Independent State of the Congo. The recovery took place during the colonial period proper, at different times in the various regions.

II. BELGIAN COLONISATION 1908-1960

During the Belgian colonisation, a system of data collection was introduced and progressively reinforced which essentially comprised three kinds of operations: administrative censuses, civil registration and sample surveys. The characteristics of these sources have often been described [15, pp. 566-567], [24]. It would be appropriate to add here medical sources, often used to confirm the former but also often in complete disagreement with them. These various sources will only be mentioned to underline some aspects necessary to a critical appraisal.

1) Administrative censuses

In principle, an administrative census must be able to produce every year an accurate picture of the population. Unfortunately, the yearly updating of the records was associated with conscription, tax-levying, the checking of the progress of forced labour projects and the recruitment of workers for commercial enterprises. It was in the interest of people who were breaking the law not to make their presence obvious. Finally, the distribution between children and adults was based on ill-defined criteria [10, pp. 249-259]. Despite these shortcomings, a general table of the colony's population was presented every year from 1914 onwards in the Report of the Minister for Colonies to the Belgian Legislative Chambers. Up to 1947, figures were usually given by district; from 1948 onwards, they were given by territory.

Table 94 shows the results obtained from 1914 to 1960, normally at the end of each year. The variation of each total figure compared to the previous one is indicated in percentage terms. Up to 1947, the recorded growth mainly reflects shifting administrative activities. The progress is essentially the consequence of an improved coverage of the real situation. The case is very obvious in the first ten years. It is equally certain for all the data from 1925 to 1937, where the population figures indicate a mean annual increase of 2.39%. Such a high rate does not tally with either the sanitary conditions of the time or the observations of contemporaries mentioned above. Negative recorded growth rates are almost always the consequence of a slackening of operations, notably during the 1940-45 war, or of a more rigorous approach, as in 1947, when a general check of population records led to the elimination of numerous cards which either no longer corresponded to people present or were duplicates. From 1948 onwards, on the contrary, it was generally considered that the system of enumeration had reached a degree of satisfactory quality. Progress was slower in the field of vital events registration which is not thought to have covered 95% of the population until 1958.

In order to correct the data of censuses prior to 1952, an adjustment curve was calculated the following year by regressive extrapolation back to 1925 [6]. The series devised in this way probably follows more closely the population movement than the data from the administrative census. But it assumes an annual growth which would have risen progressively from 5.3% in 1926 to 10.2% in 1952, when in fact, there is no evidence to support continuous growth since 1925 and the growth rate was certainly higher in 1952. The present authors believe that demographic recovery took place relatively late and at a much quicker pace than suggested in the previous hypothesis. It probably happened mainly in the period after the Second World War, at a time when general conditions were greatly improved by the widespread use of DDT, antibiotics, motor transport and rapid socio-economic progress. The initial estimate of 9.5 million in 1925 resulting from the adjustment suggested in 1953, is in agreement with the numerous observations concerning the incomplete nature of censuses at that

Table 94

ZAIRE - RESULTS OF ADMINISTRATIVE CENSUSES FROM 1914 TO 1959
(excluding the non-indigenous population)

YEAR	MALE	FEMALE	BOYS	GIRLS	TOTAL	Growth in %
1914					4 618 254	
1915					4 654 853	0.79
1916	1 709 006	1 838 150	1 598 994		5 146 150	10.55
1917	1 954 058	2 038 826	1 982 577		5 975 461	16.11
1918					-	
1919					-	
1920					6 558 374	9.75
1921					7 152 779	9.06
1922					7 000 000	- 2.14
1923	2 480 330	2 500 453	2 746 453		7 727 316	10.39
1924					7 938 206	2.73
1925	2 515 683	2 533 575	2 643 315		7 692 573	- 3.09
1926	2 537 775	2 695 780	2 811 895		7 955 450	3.42
1927	2 584 208	2 652 119	2 884 867		8 121 194	2.08
1928	2 648 959	1 754 236	3 015 986		8 419 181	3.67
1929	2 742 737	2 840 304	3 091 045		8 674 086	3.03
1930	2 779 452	2 845 411	3 178 559		8 803 442	1.49
1931	2 769 445	2 817 714	3 239 722		8 880 881	0.88
1932	2 751 460	2 890 105	3 314 888		8 956 462	0.85
1933	2 719 945	2 879 422	3 372 916		8 872 283	- 0.94
1934	2 810 475	2 947 693	3 524 823		9 282 991	4.63
1935	2 908 996	3 088 565	1 970 429	1 807 201	9 775 191	5.30
1936	2 976 438	3 176 496	2 025 277	1 868 520	10 946 731	2.78
1937	3 032 608	3 214 977	2 060 674	1 909 149	10 217 408	1.70
1938	3 036 269	3 226 519	2 092 007	1 949 289	10 304 084	0.85
1939	3 014 301	3 222 629	2 113 219	1 978 260	10 328 409	0.24
1940	3 000 337	3 224 324	2 113 445	1 995 803	10 353 909	0.25
1941	3 036 372	3 262 858	2 175 304	2 033 015	10 507 549	1.48
1942	3 048 884	3 250 558	2 180 799	2 050 205	10 530 446	0.22
1943	3 053 352	3 208 889	2 177 213	2 046 837	10 486 291	- 0.42
1944	3 043 820	3 182 979	2 169 878	2 045 681	10 442 356	- 0.42
1945	3 064 506	3 195 509	2 186 528	2 061 906	10 503 449	0.63
1946	3 094 288	3 240 016	2 229 046	2 103 737	10 667 087	1.51
1947	3 122 571	3 274 636	2 250 876	2 113 270	10 761 353	0.88
1948	3 129 581	3 340 575	2 292 247	2 151 805	10 914 208	1.42
1949	3 166 552	3 394 748	2 329 645	2 182 366	11 073 311	1.46
1950	3 206 725	3 478 960	2 403 516	2 242 592	11 331 793	2.33
1951	3 278 315	3 542 656	2 469 308	2 303 215	11 593 494	2.31
1952	3 320 233	3 580 744	2 524 463	2 363 271	11 788 711	1.68
1953	3 362 588	3 637 819	2 594 669	2 432 083	12 026 159	2.04
1954	3 416 119	3 697 848	2 684 038	2 519 321	12 317 326	2.42
1955	3 457 921	3 736 341	2 765 582	2 602 786	12 562 631	1.99
1956	3 493 832	3 794 695	2 862 464	2 692 583	12 843 574	2.24
1957	3 519 120	3 861 435	2 987 421	2 806 907	13 174 883	2.58
1958	3 564 937	3 934 024	3 116 251	2 924 970	13 540 182	2.77
1959	3 602 986	3 995 889	3 220 959	3 036 587	13 864 421	2.39

Source [17]

time. It is however probably underestimated in so far as the figure of 10.5 million agreed upon for 1940 cannot really be the result of a substantial growth during the preceding years. It must probably be accepted that the figures for the colonial period were more seriously underestimated than is usually acknowledged.

The corrected figures thus suggested tally with the data provided for the most recent period; on the other hand, they suggest for 1956 a growth rate higher than that based on the probability sample demographic survey of 1955-1957. Table 95 shows in three columns the results of administrative censuses, the adjustment suggested in 1953, and a possible correction of that adjustment.

2) Demographic surveys prior to 1955

As it was keen to see an improvement in the trend of the demographic evolution after criticism at home and abroad at the beginning of the century, the Belgian colonial administration endeavoured to identify the components of natural movement through surveys carried out every year. Started in 1925, they were interrupted by the war in 1940 and recommenced only in 1948. They were aimed at tribal communities chosen purposely according to criteria established by the administration; exclusion of villages where an important chief lived, or situated near a mission, or under the influence of a trading centre. From 1948 onwards, the sample was to remain the same from one year to another in order to facilitate identification of trends. If the evolution of the death-rate shows a slow decrease, on the other hand, the interpretation of the birth-rate published annually is not easy [17], [22, Table 4-6, p.151]. Its sequence does not give a clear picture of the way in which fertility has evolved.

The statistical study of fertility trends which is based on the data from demographic surveys in correlation with the statistics on children given by the administrative censuses and the rate of sterility among women born between 1890 and 1910, leads to the conclusion that the situation was not static during the first decades of the century: during the inter-war years and among the populations of the central basin and of the Uele, the trend continued at a slower pace. But from 1945 onwards, the fertility curve showed an upward movement all over the country [23, pp. 136-167].

The birth-rate drawn from demographic surveys certainly remains underestimated: from 1948 to 1952 it is given as 33 per 1 000. However, already in 1932-34, the birth-rate estimated at 32 per 1 000 by the administration was considered to be 44 per 1 000 by the medical authorities [33, p.8].

Table 95

ZAIRE - RESULTS OF THE ADMINISTRATIVE CENSUSES AND ADJUSTMENTS

YEAR	ADMINISTRATIVE CENSUS	1953 ADJUSTMENT		CORRECTED ADJUSTMENT	
		Population	Growth rate in ‰	Population	Annual growth rate per period in ‰
1925	7 692 573	9 565 000		10 175 167	
1926	7 955 450	9 616 000	5.3		
1927	8 121 194	9 670 000	5.6		- 1.0
1928	8 419 181	9 725 000	5.7		
1929	8 674 086	9 783 000	6.0		
1930	8 803 442	9 843 000	6.1	10 124 393	
1931	8 880 881	9 905 000	6.3		
1932	8 956 462	9 969 000	6.5		- 0.2
1933	8 872 283	10 036 000	6.7		
1934	9 282 991	10 104 000	6.8		
1935	9 775 191	10 176 000	7.1	10 114 272	
1936	10 046 731	10 249 000	7.2	10 144 615	3.0
1937	10 217 408	10 325 000	7.4	10 190 266	4.5
1938	10 304 084	10 403 000	7.6	10 251 407	6.0
1939	10 328 409	10 484 000	7.8	10 328 293	7.5
1940	10 353 909	10 567 000	7.9	10 421 247	9.0
1941	10 507 549	10 653 000	8.1	10 520 250	9.5
1942	10 530 446	10 742 000	8.4	10 614 931	9.0
1943	10 486 291	10 834 000	8.6	10 699 851	8.0
1944	10 442 356	10 928 000	8.7	10 785 450	8.0
1945	10 508 449	11 025 000	8.9	10 882 519	9.0
1946	10 667 087	11 125 000	9.1	10 989 167	9.8
1947	10 761 353	11 228 000	9.3	11 108 949	10.9
1948	10 914 208	11 333 000	9.4	11 242 257	12.0
1949	11 073 311	11 442 000	9.6	11 390 655	13.2
1950	11 331 793	11 555 000	9.9	11 558 097	14.7
1951	11 593 494	11 670 000	10.0	11 745 338	16.2
1952	11 788 711	11 789 000	10.2	11 953 231	17.7
1953	12 026 159			12 181 538	19.1
1954	12 317 326			12 430 041	20.4
1955	12 562 631			12 697 287	21.5
1956	12 843 574			12 981 706	22.4
1957	13 174 883			13 286 776	23.5
1958	13 540 183			13 610 973	24.4
1959	13 864 421			13 951 248	25.0

Source of 1953 adjustment: [6]

These surveys display fairly serious flaws:

- "the general pessimism about the demographic situation" in the country after the first World War led to "purposive choice" being exercised in the groups which were to be monitored more closely;
- the quota method led to biases and impaired the representativeness of the sample;
- as the population became more and more urbanised, there was a move away from real data since natural movement was calculated on the basis of exclusively rural samples of which in addition the representativeness was doubtful due to the unscientific nature of sampling methods. Urban areas were excluded from sampling until 1953;
- the proportion of the population submitted to the sample - variable according to the regions - always remained around 3.6% of the total on average. This size must be considered as being too restricted in view of the variability of the demographic characteristics to be studied;
- finally, there was no provision for a supervision system of the interviewers in the field or for the co-ordination and standardisation of procedures, each province being responsible for the surveys carried out on its territory.

3) The Probability Sample Demographic Survey of 1955-1957

Carried out since 1953, this survey differs from all those which preceded it above all in relation to the technical means employed in order to counteract the shortcomings of the system in use until then. This consisted of a survey of the whole of the country, reaching all levels, with a sampling plan appropriate to each environment and a sample large enough to ensure the representativeness of the rarer characteristics. One of the outstanding features of this survey, which was carried out on 1 360 062 inhabitants, i.e. 10.7% of the population [22, Table 6.1, p.246], is its constant endeavour to check the collected data against data from other sources; identity papers, baptism forms, age of the children of the same generation, etc.

This survey has been the object of thorough analysis, first by means of an elaborate presentation of its gross figures [30] then by means of more rigorous analysis [22, p.528]. The critical appraisal to which the data were subjected underlines the consistency of the results obtained by district and by province with those of the administrative censuses of the time, thus confirming their value. As the Princeton study is very readily available, it is not necessary here to go through its tables in detail [22, Table 6.1, p.245 and 649, p.339].

As a consequence of the small size of the team of interviewers: about a hundred Congolese and six Europeans, field work was spread over three years. This distorts slightly the proportions from one region to another. An attempt has been made (Table 96) to make

Table 96
 ZAIRE - ALIGNMENT OF THE DATA OF THE 1955-1957 SURVEY
 ON 30 JUNE 1956

Districts & provinces	Central Date (a)	Population enumerated (b)	Annual Growth (c)	Estimate at 30/6/56	Sex ratio (d)
<u>Kinshasa</u>	25 May 1955	318 317	0.09035	349 912	0.573
Cataractes	20 Aug. 1955	439 459	0.0243	448 648	0.469
Bas-Fleuve	30 Nov. 1955	411 804	0.0216	416 970	0.491
<u>Bas-Zaire</u>	-	851 263	0.0230	865 618	0.480
Lac Maindombe	16 Dec. 1957	271 330	0.0254	261 608	0.484
Kwili	22 Oct. 1956	1 143 456	0.0214	1 135 864	0.466
Kwango	18 Jan. 1957	466 054	0.0215	460 574	0.462
<u>Bandundu</u>	-	1 880 840	0.0220	1 858 046	0.468
Equateur	29 May 1957	302 162	0.0154	297 975	0.488
Mongala	6 Nov. 1956	519 488	0.0233	515 245	0.486
Ubangi	15 Nov. 1956	539 060	0.0204	534 934	0.483
Tshuapa	19 Mar. 1957	395 480	0.0037	394 432	0.493
<u>Equateur</u>	-	1 756 190	0.0157	1 742 586	0.487
Kisangani	5 Jun. 1957	634 948	0.0141	626 717	0.502
Ituri	8 Nov. 1957	651 044	0.0086	643 517	0.497
Bas-Uele	15 Oct. 1957	467 632	-0.0064	471 508	0.482
Haut-Uele	14 Dec. 1957	581 961	0.0006	581 453	0.492
<u>Haut-Zaire</u>	-	2 335 585	0.0086	2 323 195	0.494
North Kivu	3 Dec. 1956	831 353	0.0221	823 574	0.489
South Kivu	19 Dec. 1956	734 633	0.0309	746 636	0.486
Maniema	12 May 1956	446 522	0.0112	447 193	0.497
<u>Kivu</u>	-	2 012 508	0.0237	2 017 403	0.489
Labumbashi	15 Oct. 1956	140 104	0.0426	138 368	0.532
Tanganyika	1 Jun. 1957	396 938	0.0301	386 267	0.477
Lualaba	19 Dec. 1956	320 463	0.0292	316 113	0.501
Haut-Lomami	14 Mar. 1957	451 969	0.0219	445 105	0.478
Luapula Moëro	2 Feb. 1957	191 620	0.0347	187 746	0.472
<u>Shaba</u>	-	1 501 094	0.0301	1 473 599	0.486
Sankuru	29 Apr. 1956	493 549	0.0174	495 008	0.479
Kabinda	8 Aug. 1956	480 379	0.0242	479 140	0.467
<u>East Kasai</u>	-	973 928	0.0208	974 148	0.473
Lulua	9 Oct. 1955	654 486	0.0144	661 303	0.479
Kasai	15 Mar. 1956	492 862	0.0121	494 610	0.473
<u>West Kasai</u>	-	1 147 348	0.0134	1 155 913	0.476
ZAIRE	-	12 777 073	0.0191	12 760 420	0.486

Notes (a) weighting by territory from [31, pp. 119-124]

(b) source [22, p. 190]

(c) from [21, p. 339] except for Kinshasa which went up from 318 317 on 25 May 1955 to 365 650 on 31 December 1956; for the Ituri, the rate for the whole of Upper-Zaire has been used.

(d) source [31, p. 152-153]

an adjustment by carrying the data back to 30 June 1956, with the help of the confirmed dates of survey for each territory [31, p.119-124] and growth rates extracted from the analysis [22] and by adding to them the sex ratio drawn from the survey [31, pp. 152-153].

The results of this survey were a source of astonishment as they revealed a level of fertility which confounded the rather pessimistic views which had prevailed until then. Without suggesting radical alterations on the geographical pattern of fertility - the area of low and high fertility remain the same - this survey confirms that after having displayed a fertility rate inferior to that of the rest of the country, urban areas were becoming places of high fertility. With its confirmation of a decrease in mortality, it shows that Zaire at the end of colonisation had entered a period demographic explosion.

4) Evolution of urbanisation

The rural exodus and the sex imbalance it created in rural areas started with the progressive flow of workers into areas not subject to a traditional form of jurisdiction. These new areas were administratively defined. Administrative censuses show the following evolution for the extra-customary population from 1930 to 1960.

Table 97

ZAIRE - EVOLUTION OF THE EXTRA-CUSTOMARY POPULATION FROM 1930 TO 1960

Year	Total Population	Extra-customary population	
		Population	% of total population
1930	8 803 513	369 747	4.2
1935	9 775 191	572 167	5.8
1940	10 353 909	1 017 899	9.8
1945	10 507 149	1 565 401	14.9
1950	11 331 793	2 162 397	19.1
1955	12 562 631	2 850 084	22.7
1960	14 217 732	3 412 320	24.0

Source: [17]

This concept of extra-customary population corresponds roughly to that of non-rural population at the time of the 1955-1957 survey, that is the population referred to as urban population (2 000 inhabitants or more, non-rural population) and mixed population (less than 2 000 inhabitants, non-farming activities). This survey shows 9.90% as urban population and 12.45% as mixed population, that is a total of 22.35% extra-customary population. Mainly on the basis of the data of this survey, Romaniuk devoted a whole chapter to fertility in urban areas. He proposes a total fertility rate of 5.91 for the whole country. But the distribution according to environment shows a rise from rural areas to more urbanised areas: 4.77 in rural areas, 5.28 in mixed areas and 6.12 in urban areas. So that the natural movement by environment, based on adjusted data of the 1955-1957 survey can be summarised as follows:

Table 98

ZAIRE - NATURAL MOVEMENT: ADJUSTED DATA (1955-1957)

per 1 000	Rural	Mixed	Urban	Total
Birth-rate (a)	43	51	55	45
Death-rate (b)	28	21	16	26
Growth	15	30	39	19

Sources: (a) [23, p. 190]
 (b) [22, p. 311]

III. FROM INDEPENDENCE TO THE PRESENT DAY

Since 1960, the numerous disruptions in Zaire have been detrimental to the collection systems in operation. A strong central authority capable of supervising the operations has been missing most of the time. Even if Civil Registration offices never completely stopped registering births, marriages and deaths, the processing of this information and the control of completeness on a national scale were deficient. No publication of these statistics appeared. The same applies to administrative censuses which the administration continued to carry out sporadically. The division of the country into small provinces in 1962 - up to 21 without counting Kinshasa - then their progressive grouping into a smaller number of provinces, from then on called regions, led to transfer and sharing of documents with resultant damage and losses. Troubles and rebellions were followed in some places by the complete disappearance of records and registers. Consequently when President Mobutu came to power, the re-establishment of peace was an opportunity to examine the problem. The need was felt to reconstitute permanent records throughout the whole republic. From 1968 to 1970, orders, decrees and instructions appeared in order to prepare the way for this operation called the "General Census of Population" finally carried out from February to June 1970.

1) The Administrative Census of 1970

The available statistics show the distribution of population by region, district and territory, distinguishing nationals and foreigners; they separate males and females and show the adults (18 years and over) and children (under 18) of each sex [1] (1).

The value of this census has been cast in doubt for several reasons:

- It was necessary to renew the permanent records of administrative census. However, in several parts of this immense country, the new version of the form to be filled in did not arrive in time, nor in sufficient quantity. It was necessary to use old stock, or even materials at hand (pages of notebooks, etc.)
- The parents were to declare their children, but no guide was given as to the age of children to be declared. Certain offspring could have been counted as children with their parents and adults in their own household.
- As the place of residence of the child was not clearly defined, certain children could have been recorded once with their parents and then elsewhere (with an uncle, school, etc.)
- As operations were spread over several months, the loss of census certificates encouraged some people to be re-enumerated in order to avoid trouble during checks.
- The processing of forms had to be carried out on a local scale, by a manual process.
- The results were published very rapidly after the end of the census, which casts doubt on the relationship between the information collected and what was published.
- The census of 1970 was directly before the elections. It was inevitable that some figures would be manipulated for political purposes.

The value of the census could also be tested by cross-checking with other findings.

* The total of 21 637 876, with 20 705 834 nationals, greatly exceeds the numbers predicted by various projections calculated previously:

- Those of the United Nations amount to 17 380 000 for the lower variant and 17 646 000 for the upper variant [2, p. 7] [3, p.809]. They make the mistake of assuming an unchanged growth rate from 1955 to 1965, as if the sporadic troubles had hindered the demographic progress of all parts of this huge country;

 (1) These figures are given again in [22].

-
- the hypotheses of Fabri and Mayer nowhere lead to a total greatly in excess of 18 million [10];
 - the projections of Romaniuk without using age distribution, but applying a static growth rate, lead to 17 696 000 in 1970. If the death rate diminished progressively, the increase in the growth rate, which went from 2.3 to 2.8%, would lead to 18 851 000 [21, p. 599].

Whatever the shortcomings may be of each of these projections, it must be noted that none arrives at a figure even close to the level suggested by the census data.

** Correlation with the last censuses of the colonial period gives an inter-censal growth rate which can be compared with the natural growth rate derived from the 1955-57 survey [25], or to the inter-censal rates of 1956-59 [2, p.28]. Between 1958 and 1970, the population of Zaire must have experienced a growth rate of 4.3%. The natural growth rate was estimated at 2.3% (raw data) and at 1.9% (after adjustment) for 1955-57. The mean annual inter-censal growth from 1956 to 1959 rose to 2.6%.

The growth rate therefore seems to have been changing. Migratory intake being negligible on a national scale, only a combination of the divergent evolution of birth and death rates could lead to such a high rate [3, p.809]. Fertility must have increased while the death rate was diminishing. If this rise in fertility can easily be accepted, it is not so easy to comment on the decrease in death rate. The infrastructure set up during the 1950s must have contributed to this diminution. But the habits of hygiene inculcated to the population during several decades were probably more significant, for the serious troubles which Zaire underwent between 1958 and 1967 militated against the upkeep and good condition of medical equipment.

It is wrong to generalise, as many regions of the country did not suffer greatly in a direct manner from disorders likely to change the pace of demographic evolution. In the end, even if the inter-censal rates are not dependent solely on the most recent census, it can be concluded that the general increase they show clearly exaggerates the real growth of population up to 1970.

*** This overestimation did not affect all districts, from now on referred to as sub-regions, in an identical way [13, pp.106-108]. For certain sub-regions, the inter-censal rates appear very plausible. On the whole, the regional disparity between growth rates remain as marked as before 1960, but they changed in level. Among the six sub-regions with the lowest growth rates (under 2.3%), can be found the districts with low fertility in 1955-57. The highest rates are found in the towns. This is explained by higher urban fertility, the predilection of foreigners for urban centres, and migration from rural areas. The latter on the other hand must have declined. But this does not show up in the census data.

The two Kasai show very high increases, despite the bloody struggles between the Lulua and Baluba since 1959. The sub-regions of Kasai (4.6%), Lulua (5.4%) and Kabinda (7.2%) are among those where growth is similar to that of towns. The town of Luluabourg experienced an annual increase of 12.7% despite the departure of the Baluba to their homeland. The fact that these conflicts might have prevented the successful carrying out of the census in 1959 could lead to the belief that results at the beginning of the inter-censal period were underestimated. But this is not enough to justify such an inflated inter-censal rate. Neither Western nor Eastern Kasai shelter refugees from neighbouring countries as is the case in Lower Zaire, Kivu or Shaba. Eastern Kasai must have received several thousand Baluba thrown out of Shaba. But none of these factors justify the suggested growth rate. Besides, political manipulation of Kasai data inevitably occurred.

**** The proportion of children in the population enumerated in 1970 exceeded everywhere the percentages recorded previously. This increased percentage indicates growth in fertility, but also a fall in death rate. However, in the majority of sub-regions the proportion of the population under 18 years old seems to be exaggerated by comparison with that obtained in 1970 in an agricultural sample survey on rural groups. Even if the absence of urban areas in the sample minimises the proportion of children in the population surveyed, the percentages obtained fit into a population growth trend since 1958 of a much more probable nature (1).

2) Estimate for 1975

A series of projections was drawn up in 1972 for the decade 1970-1980. Taking as an obligatory base the total for each region given by the 1970 census, and based on the proportion of children under 18 and a hypothetical estimate of a reduced death rate since 1956, these projections lead to overestimated annual totals [14]. For 1975, the total came to 25 million inhabitants in the middle of the year. After 1970, few administrative censuses were carried as far as the formal collation of all data for the country. That of 1975 was the most detailed, showing a population of more than 24 million on the 31 December 1975. It may well be asked whether some of the results of this census were not based on the 1972 projections. The most remarkable structural feature is the general rise in the proportion of under 18 year olds compared with 1970. It could be used for new projections taking 1975 as the point of departure. But the demographic figures by region do not appear to be very reliable: the inter-censal growth rates 1970-75 remained astonishingly low, even negative. This confirms the tendency of the 1970 census to exaggerate results, but does not show where we stand in 1975.

(1) Department of Agriculture, Kinshasa, 1970 (unpublished).

This is why in a fresh set of projections, extending from 1975 to 1985, the base population has been re-estimated for each region separately using the last colonial administrative censuses, the demographic sample survey of 1955-57, the administrative census of 1970, that of 1975, and the electoral rolls of 1977 [4]. The examination of the totals given for these various years as well as the mean annual growth rates they imply, has led to a preference for one or other of the following methods:

- to work from the population of mid-1977 taken from the list of adult electors, factored up based on the proportion of adults in the total population in 1975, and adding foreigners,
- to calculate a natural growth rate using the rules of internal consistency with the help of a model; adjusting this to obtain a mean annual increase incorporating the migration effect; applying this to the 31 December 1975 population.

The age structure in both cases, has been taken from the Princeton models using as parameters the proportion below 20 years and the expectation of life at birth. The absolute number of inhabitants by region turns out as follows for the middle of 1975:

Table 99

ZAIRE - POPULATION ESTIMATED AT 30 JUNE 1975 BY REGION

Region	Population	Region	Population
Kinshasa	1 679 091	Kivu	3 812 815
Lower Zaire	1 574 949	Shaba	2 961 990
Bandundu	3 068 845	Eastern Kasai	1 516 491
Equateur	2 619 693	Western Kasai	1 872 557
Upper Zaire	3 475 799	ZAIRE	22 582 230

To get an estimate of the population on 1 January 1975, it is only necessary to go back six months using for example the mean annual increase rate between the population of 30 June 1975 (12 760 420) and that of 30 June 1975 above; if this rate is 3.05%, the population of Zaire would have been 22 243 038 at the beginning of 1975.

The Edoza survey covered Lower Zaire, Kinshasa, Bandundu, Western Kasai and two of the four equatorial sub-regions [9]. The rural areas and smaller centres were surveyed under the auspices of the Demography Department of the Catholic University of Louvain, while the six largest towns were covered by Pr. Houyoux of the Sociological Research Centre of the same university.

The authors of the synthesis of this work have aligned the statistics collected to the 1 January 1976 which became the base date for all results. As population figures change rapidly, alignment was achieved, in some cases backwards by the application of the specific growth rates drawn from the survey itself for each territorial subdivision [9, Synthesis volume, p.2]. Edoza is concerned with the de jure population and did not try to isolate the de facto population. The concept of the presence or absence of household does not clearly identify absent people among the population of households present.

A comparison between Edoza and the Regional Demographic Perspectives for 1 January 1976 shows an excess of over 10% in the projections for Lower Zaire and Bandundu, but quite good agreement for Western Kasai and Kinshasa.

Table 100

ZAIRE - COMPARISON BETWEEN THE EDOZA RESULTS AND
THE PROJECTIONS FOR 1 JANUARY 1976

Region	Edoza (a)	Perspectives (b)	RDP/Edoza
Lower Zaire	1 421 383	1 593 388	1.12
Bandundu	2 796 540	3 108 492	1.11
Western Kasai	1 861 149	1 895 336	1.02
Kinshasa	1 724 696	1 742 026	1.01
Western Zaire	7 803 768	8 339 242	1.07

Sources: (a) [Synthesis volume, p.34] (b) [4, pp.24 et seq.]

The extent to which the figures given by the projections are greater than those of the Edoza survey shows how much the 1970 census exceeds reality, as the projections already reduce the 1970 data, as shown by Table 102.

3) The urban population in 1975-1976

An attempt at producing global projections for the towns from now until the year 2000 on a regional basis has underlined the value of researching in detail the population of each centre [26]. For certain towns, data are more reliable than for the regions, as a result of urban sample surveys carried out since 1967 either by the National Statistical Institute (INS), the Urban Planning Bureau (BEAU), or on behalf of the Society of Engineering Consultants for Industrial Planning (SICAI) [4, 15, notes 12 to 14]. By correlating information from as many sources as possible, the population of 419 centres of 2 000 inhabitants and above was able to be calculated [4, pp.69-73]. Undeniably,

the statistics of urban population should be treated with caution. Most derive from the administrative census of 1975, but some come from an administrative census in a neighbouring year [5, p.6]. The total population residing in centres of at least 2 000 inhabitants amounted to 7 148 510 and represented 31.7% of the mid-1975 population. The Edoza survey shows an order of magnitude very close to this for the three complete regions which were covered [7, Synthesis volume, p.35].

Table 101

ZAIRE - COMPARISON OF THE URBANISATION RATES ACCORDING TO
EDOZA AND THE PROJECTIONS FOR 1 JULY 1975

Region	Edoza %	Projections %
Lower Zaire	34.6	34.1
Bandundu	18.4	19.3
Western Kasai	28.0	30.1
Together	25.1	26.0

IV. CONCLUSIONS

The trend of the population of Zaire was downward at the end of the last century and the beginning of this, falling from a figure which could have reached 15 million. At some time during the 1920s or shortly afterwards, it started to grow again and it is probable that the population was never lower than 10 million. At 30 June 1980, the figure would have been 26.4 million, after progress which was slow at first but speeded up after 1945. A theoretical curve is shown in Table 102 from 1959 to 1980. The available information is not adequate to analyse in detail the slowdowns which occurred following the various troubles from 1959 to 1967. Neither is it possible to identify the acceleration resulting from the arrival of several major waves of immigrants from neighbouring countries. It is therefore clear that a new national effort towards a systematic census must be envisaged, with the intention of using the data as a base for renewed estimates. The National Statistical Institute is endeavouring to accomplish this in trying to develop high quality techniques with regard to the census planned for 1981.

Table 102

ZAIRE - POPULATION ESTIMATES FROM 1959 TO 1980 AT MID-YEAR

YEAR	POPULATION	YEAR	POPULATION
1959	13 951 248	1970	19 427 024
1960	14 377 559	1971	20 020 660
1961	14 816 898	1972	20 632 435
1962	15 269 661	1973	21 262 905
1963	15 736 259	1974	21 912 641
1964	16 217 116	1975	22 582 230
1965	16 712 666	1976	23 286 375
1966	17 223 358	1977	24 016 672
1967	17 749 656	1978	24 774 384
1968	18 292 036	1979	25 560 810
1969	18 850 990	1980	26 377 260

Sources: 1959 cf. Table 25

1975 to 1980 [4]

1960 to 1974, linear interpolation according to exponential model.

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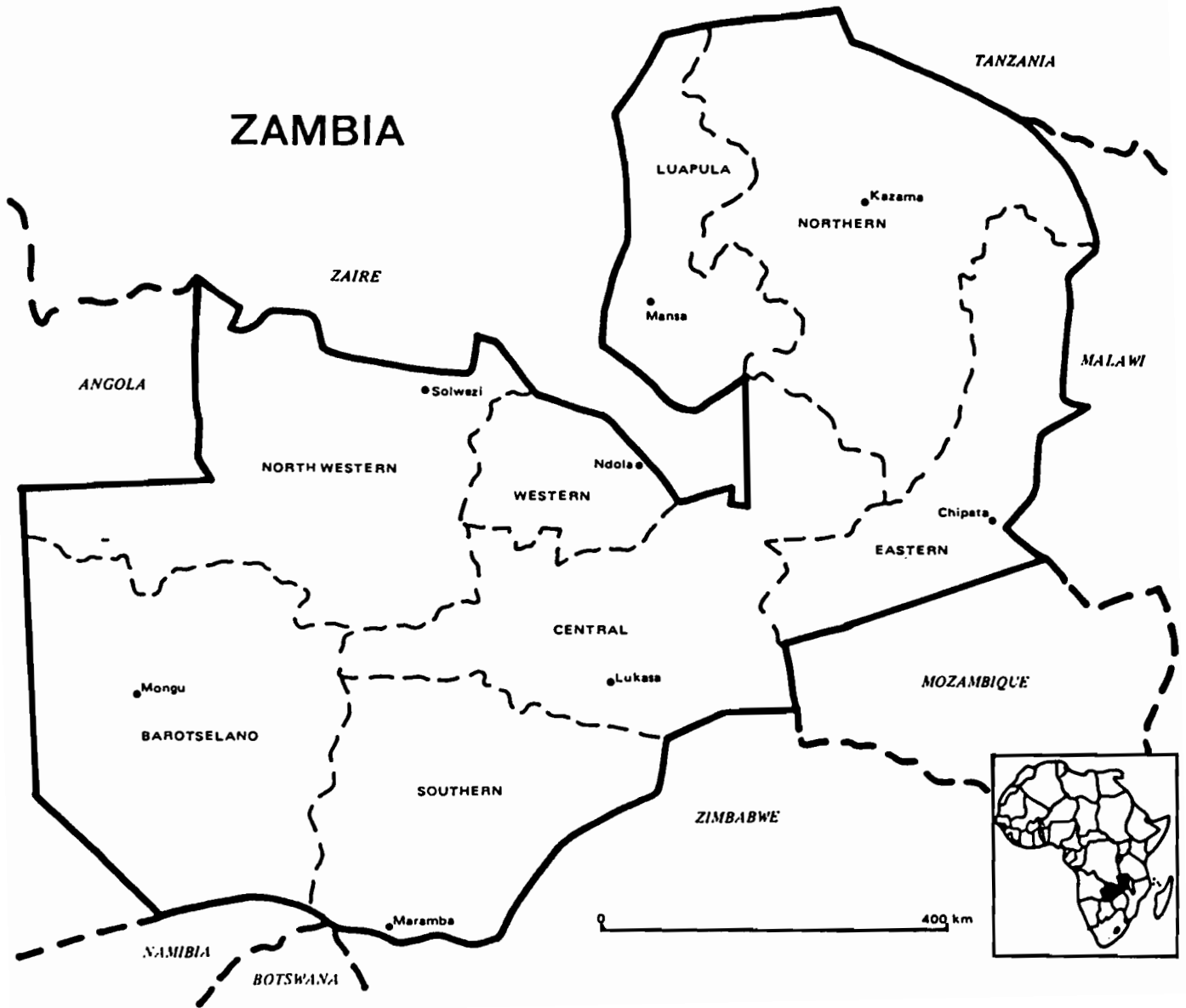
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ZAMBIA

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Z A M B I A

I. POPULATION GROWTH

Zambia emerged as an independent country on 24th October, 1964 after about 70 years of colonial rule. The colonisation of Northern Rhodesia (1) (first as two separate territories of North-Eastern Rhodesia and South-West Rhodesia until 1911 when they were amalgamated to form a single territory) under the British took firm root just before the turn of this century. Initially agents of the British South Africa Company governed the Protectorate on behalf of the British Crown through a charter and it was not until 1924 that the Colonial Office took over the responsibilities of administering the territory.

The chartered Company encouraged white settlers into the territory to open up farmlands and undertake other commercial ventures. These commercial interests of the chartered company had direct bearing on the later patterns of population growth of the non-African community and the migratory patterns of the Africans.

The first truly national census was held in 1969. Prior to this, periodic censuses had been held by the colonial Government for the non-African section of the population. A demographic survey of the Africans and complete census of Africans were conducted in 1950 and 1963 respectively. An intercensal Sample Census of Population was carried out in 1974. The only figures that can be used for proper comparison with the 1969 data are the 1963 Census of Africans and the 1974 Sample Census of Population. However, population estimates for Africans for earlier periods were being made, as will be shown later, through use of provincial administration records of hut/poll tax payers and their dependents. From all these data sources estimates of the population growth patterns of Zambia have been worked out in Table 103 below.

The growth rates have been estimated to have been around 1.2 to 1.5% at the turn of the century rising to around 2.5% in the fifties and early sixties. This further rose to around 3.0% per year in the 1969-1974 period.

(1) Zambia was known as Northern Rhodesia during the colonial period until 24th October, 1964, when it changed to the present name on attaining independent nationhood.

Table 103

ZAMBIA - POPULATION ESTIMATES SINCE 1900

YEAR	Census results and estimates				
	Europeans	Asians	Coloured	Africans	Total
1901	(a)	(a)	(a)	690 000	690 000
1911	1 497	39	(b)	820 000	820 000
1921	3 634	56	145	980 000	980 000
1931	13 846	176	425	1 330 000	1 340 000
1946	21 907	1 117	804	1 660 000	1 680 000
1951	37 079	2 524	1 112	2 450 000	2 490 000
1956	65 277	5 450	1 577	2 790 000	2 860 000
1961	74 549	7 790	2 043	3 240 000	2 320 000
1963	61 282	8 500	2 600	3 405 788	3 490 170
1969	43 390	10 785	4 176	3 998 644	4 056 995
1974	29 000	16 000	7 000	4 625 000	4 677 000
1978	22 000	19 000	8 000	5 423 000	5 472 000

(a) negligible

(b) not enumerated

II. ESTIMATE OF THE NON-AFRICAN POPULATION

Censuses of the non-African population have been held regularly in Zambia since 1911. Before the second World War, they were held decennially in 1911, 1921 and 1931. They were interrupted during the war years (1941) and after the war, starting with 1946, these censuses were held at five-yearly intervals in 1946, 1951 and 1961.

These censuses were generally enumerated on a de facto basis. Forms were completed by the head of household on a given census date for all persons including visitors who had spent a night at the house. Intercensal population estimates for Europeans prior to 1951 were based on annual geometric rates of increase as revealed by successive censuses. After 1951 the figures for Europeans were based on details of births, deaths, immigration and estimated emigration, corrected in the light of census results. From 1965 the estimates for Asians were made in the same way as those of Europeans.

III. ESTIMATES OF THE AFRICAN POPULATION

1) Provincial Administration Estimates 1911-1949

As early as 1902 the Administrator of North-Eastern Rhodesia introduced a hut tax on Africans in order to force them to find work on farms and gold mines south of the Zambesi River. Later hut and poll taxes made African labour more plentiful for labourers in the Zambian copper mines as well as on settlers' farms. As taxation of Africans was the cornerstone upon which colonial rule and settler prosperity was built it was inevitable that extensive records on African adult males and their dependents had to be kept by the administration.

Population estimates for Africans were made by taking aggregates of figures collected for each village when last visited by the District Commissioner. These were usually obtained by calling all the people together in a central gathering and then conducting a count. These estimates generally understated the African population because:

- provincial administration's estimates were aggregates of data collected over a long period (2-4 years) without any correction for the natural increase of the older figures;
- no standard procedures were adopted in the counts made by District Officers;
- counts made through gathering villagers in a central place could not be as comprehensive as intensive questioning in a dwelling-to-dwelling tour;
- as taxation was generally dreaded by Africans there was a general tendency to hide the number of adult males and females especially males with more than one wife as the hut tax increase in proportion to the number of wives. In case of an absentee husband the wife was required to pay the requisite tax or else face prosecution.

2) 1950 Demographic Sample Survey of the African Population

The 1950 Demographic Sample Survey of the African population was the first attempt to determine on a large scale the vital statistics of the Africans in Zambia. For the rural areas, the village formed the first-stage sampling unit from which a systematic sample with constant sampling fraction was drawn for each administrative district. For the survey of non-African farms (commercial farms on stateland areas operated by white settlers) a systematic sample of 72 farms was selected from a list of "farming propositions".

In the survey of the then nine main towns of Labwe, Chingola, Chipata, Livingstone, Luanshya, Lusaka, Mufulira, Ndola and Kitwe, each town was stratified into two parts, namely:

-
- the non-African residential areas (1), commercial and industrial stands;
 - the African locations and compounds.

In all cases the sampling unit was a "stand" or "dwelling place". A systematic sample of one in ten of the non-African residential areas, commercial and industrial stands was taken. In the case of African locations and compounds, a 10 percent systematic random sample of dwelling places was selected.

In this survey, information was collected for the Africans both on a de facto basis as well as on the de jure population. The survey showed that about 16 percent of Africans were non-indigenous in the nine main towns, and accounted for about 3.5 percent of the total population.

3) 1960 demographic Surveys of Africans in the Eight Main Towns

Between May and August of 1960, a series of demographic surveys were held in the eight main towns of Lusaka, Kabwe, Ndola, Luanshya, Kitwel, Mufulira, Chingola and Livingstone. Systematic sampling was again adopted in the African areas and cluster sampling was used to select plots to be visited in the European areas. The distribution of Africans in the eight main towns by province and country of birth showed the migratory pattern as set out in Table 104.

Already by 1960 some interesting migration patterns had started emerging. One finds the older the town was, the greater is the proportion of persons born from the same town and province (ranging from 24 percent for Chingola to 59 percent for Kabwe, the oldest mining town in Zambia).

4) 1963 Census of Africans

The first complete census of Africans in Zambia was held during May and June 1963. The census, unlike the earlier demographic surveys, covered only the de facto African population. The census revealed a much larger African population than was revealed by the Demographic Sample Survey of 1950 (it turned out to be 35 percent above the official estimate based on the 1950 survey).

The demarcation of enumeration areas was based first on administrative boundaries of various districts. Then the various districts were stratified into urban, stateland farming areas and non-stateland (customary lands) areas. The census frames for the urban and stateland farming areas were based on various cadastral and township maps. For the customary lands, the enumeration areas were based on chief's areas.

(1) During most of the colonial period, residential areas as well as provision of most of the community and social amenities were organised on racial lines.

Table 104

ZAMBIA - PROPORTION OF AFRICANS IN EIGHT MAIN TOWNS BY
PROVINCE AND COUNTRY OF BIRTH IN 1960

(%)

BIRTH PLACE (PROVINCE)	TOWNS								ALL TOWNS
	Lusaka	Kabwe	Ndola	Luan- shya	Kitwe	Mufu- lira	Ching- ola	Living- stone	
Central*	38.1	58.9	10.4	12.3	8.3	5.3	5.7	4.8	16.7
Copperbelt	2.1	3.1	32.3	42.5	35.9	33.5	23.6	1.5	25.0
Eastern	23.0	12.9	11.3	10.1	10.0	7.5	5.2	7.9	11.6
Luapula	1.0	1.1	5.3	4.6	7.1	16.8	10.6	0.3	6.4
Northern	8.2	11.6	14.8	15.3	17.2	18.8	26.7	3.4	15.0
North- Western	1.2	1.2	4.2	2.9	5.0	4.0	9.7	2.8	3.9
Southern	4.8	2.7	2.0	0.8	1.7	0.9	4.5	37.0	4.3
Western	2.6	1.4	1.8	0.9	1.5	0.7	1.1	28.3	3.0
Not Stated	0.5	-	1.2	1.6	0.1	-	0.1	0.6	-
TOTAL ZAMBIA	81.5	92.9	83.3	91.0	86.8	87.5	87.2	86.6	86.5
Total Non- Indigenous	18.5	7.1	16.7	9.0	13.2	12.5	12.8	13.4	13.5
GRAND TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* including Lusaka Province

The census results showed that the proportion of alien Africans in the urban areas had declined from 13.5 percent in 1960 to about 10.9 percent, those in stateland farming areas increased slightly to 8.6 percent. However, there was a remarkable increase in the number of aliens in the rural areas from a share of almost zero in 1960 to 5.4 percent in 1963. In total about 60 percent of the alien population live in the rural areas of Zambia.

5) 1969 Census of Population and Housing

The 1969 census of population and housing was the first comprehensive census held in Zambia. For the first time the census collected information from all household units regardless of ethnicity and race. The census obtained de facto population estimates of Zambia and revealed that the population was growing at the rate of 2.4 percent per year. In terms of mobility it was found that out of the total population in the country about 22 percent were living in a different district than the one they were in the previous year.

The 1963 census of African population had mainly used the administrative boundaries and the chiefs' areas to demarcate the enumeration areas. These areas having approximately 5 000 people were too large to be of much practical use after the census was completed. Further, it would have been ideal if a complete list of all villages in the country had been available with the locations marked on the map. However, villages as a unit of enumeration are impracticable because the names of the villages change often and it is not rare to find a whole village shifted to a new location. At times one also finds that a particular village is known by two, three or four names so it became extremely difficult to use the villages as frames for any statistical work. As there was insufficient time and resources for mapping out the whole country uniquely into identifiable enumeration areas, it was therefore decided to use the polling district boundaries of 1968 to demarcate the enumeration areas which had a mean population of 3 000 persons.

On the data collection front, the country was divided into urban and rural areas. For the urban areas all questions, covering a variety of topics, were canvassed whereas in the rural areas an abridged version omitting the economic questions was used. However, a 10 percent random sample of polling districts was selected where the full questionnaire was canvassed. Estimates of economic characteristics for the rural areas were based on this sample.

6) 1974 Sample Census of Population

The 1974 Sample Census of Population was held in the intercensal period in order to obtain information on many population characteristics which had been changing rather rapidly. These include population size itself, geographical distribution, particularly urban/rural, educational attainment, occupational distribution, etc.

For sampling purposes, the country was divided into three area types:

- large urban areas, having estimated population sizes of 30 000 or over,
- small urban areas and townships (including all small districts - bomas), having estimated population sizes of less than 30 000,
- rural areas, consisting of the remaining areas of the country.

In the case of large urban areas, data were required for each individual urban area. It was decided that a suitable sample size for each large urban area was 10 000 persons (adjusted for finite population where necessary), and on this basis an overall sampling fraction for each town was derived and applied to each enumeration area within that town. The enumerator first numbered sequentially and listed all houses in his enumeration area, recording at the same time the number of people who slept in each house on the night preceding his visit. He was then given a list of house numbers which had been drawn to form a simple random sample of the houses in that enumeration area, and then returned to the houses identified by house numbers on the list and conducted a full enumeration of all persons who spent the night preceding his visit in the selected houses.

In the case of small urban areas and townships, data were required for each individual township. These were too small for sampling to be worthwhile and so these townships were enumerated completely.

For the rural areas, it was decided to use the basic areas (polling districts) as used during the 1969 census. These basic areas (B.A.'s) are rather too large (on average above 3 000 to 4 000 people) and have very large variability in size of population (ranging from a few hundred to eight or nine thousand). Because of this, it was decided to use probability proportional to size sampling, using the population figures obtained in the 1969 census as the measure of size. A sample size of 10 B.A.'s was required for sampling errors to be reasonably small. However at district level, a sample of this magnitude would have meant very high sampling fractions, so high that complete coverage would have been called for. It was thus decided to obtain reliable estimates at provincial level particularly in view of the fact that the characteristics of provincial rural populations do not vary substantially. On the supposition that a province containing a larger number of districts will exhibit greater variability of population characteristics, and that variations within districts will be less than variability between districts, it was decided to stratify by districts (minor strata) and take a sample of 2 B.A.'s for each district, this gave a sample of at least 10 B.A.'s from each province. The overall sampling fraction worked out to be 14%, which was considered satisfactory.

The Sample Census results have shown that the annual rate of growth for the period 1969-1974 was 3.0%. This implies an increase in the rate of growth from 2.5% (2.7% Africans only) in the 1963-1969 period to 3.0% in the 1969-1974 era. Further, a noticeable slowing down in growth rates of urban areas from 8.9% in 1963-1969 to 6.8% in 1969-1974 was indicated.

IV. OTHER SOURCES OF DATA FOR EVALUATING DEMOGRAPHIC CHARACTERISTICS

1) Employment

Censuses of employees for all races other than employees of African employers in rural areas were held in 1946, 1951, 1956 and 1961. These, together with maize meal rationing figures for 1950 in urban areas, have been used in evaluating the quality of demographic surveys (1950 and 1960), and census (1963) data.

2) Household Budget Surveys

Household Budgets for Africans were held periodically from the forties during the colonial period, the last being undertaken in 1960. The first in the post-independence era were undertaken in 1966-1968 in the urban areas of Zambia. Those of non-Africans were held regularly from 1940. In 1970 an expenditure survey was carried out for the group in Lusaka. The first integrated household budget surveys embracing all racial groups, urban and rural areas, were held in 1974/75 and the last in 1975/76. Household budget surveys have been used extensively in evaluating qualitative demographic information on the African household size, composition and structure particularly for the urban areas of Zambia.

3) Agricultural Sample Surveys and Censuses

Censuses on Commercial Agriculture have been conducted annually since the Second World War. Data on employment have been used extensively in evaluating the agricultural population found in various demographic surveys and censuses.

Various sample surveys on agriculture have been held on traditional African agriculture since 1965. Initially (1965-1969) most of the surveys were intended to collect information useful in evolving methodology for data collection. The first ever census of agriculture on a sample basis was carried out in the 1970-71 agricultural year. In subsequent years, annual sample surveys were carried out. In addition, special surveys on area measurements and crop harvesting to find out objective size and yield rates of traditional agriculture have been undertaken. The other surveys have been on crop forecasting of principal food and commercial crops. As in commercial agriculture, the data from the surveys are being increasingly used in improving the quality and availability of rural population data.

V. DEMOGRAPHIC SURVEYS AND POPULATION CENSUSES SINCE 1911 - AN APPRAISAL

1) Reference Population

As can be inferred from the brief discussion in the earlier paragraphs, one observes that early population surveys and censuses were organised both on de facto and de jure basis. However, as complexity of population survey/census operations increased, only the de facto population was enumerated. Further, one sees that all earlier censuses (1911-1961) were conducted for the non-African settlers (mainly European) whereas population estimates for the African population were based on provincial administration records which were tied to the taxation, "situpa" system, of the male adult African. As urbanisation increased, particularly after the Second World War, it became necessary to carry out properly organised demographic studies of the African population. The 1950 demographic survey of Africans revealed a larger population than the provincial administration estimates (10% more). The reasons for taking complete censuses of the non-Africans were two-fold: the first being that almost all the non-African household heads were literate and could be covered cheaply through mailing. The second is that, though few compared to the African population, they exerted influence and dominance far greater than their numbers indicate. The non-indigenous African population initially was concentrated in the urban areas as well as in the commercial farming lands, obviously attracted by paid employment opportunities. These aliens accounted for about one sixth of the total urban population in 1950; this declined to a share of about one tenth by 1969. However, the share and size of alien Africans in Zambia has been on the increase, from a share of 3.5% in 1950 to 7.2% of the population in 1969.

2) Migration and Urbanisation in Zambia

The critical factor in the migratory patterns and urbanisation in Zambia had been the deliberate effort by successive administrations during the first half of this century to force, on one hand, the indigenous African population to move into the settler farms and towns through taxation, and encouragement of white settlers into the country on the other. This is borne out by the large numbers of Africans estimated living outside their province (rural) of birth. In 1950 the national level works out to be 26% of inhabitants, and the detailed distribution is shown in Table 105.

At the same time there was a comparable 3.5% non-indigenous African population that had come into the country. This mobility accelerated in the post independence era of the sixties, resulting in annual urban rates of increase of around 8.9%, but declining to about 6.8% during the 1969-74 period. The urban-rural migration stems principally from increased job opportunities due to the post inde-

pendence boom. However, the movement into the urban areas in the seventies is not so much the result of the historical movement (1) but is now mainly due to low returns to an increasingly educated rural youth (2). General mobility has become so manifest that according to the 1969 Population Census as much as 22% of the population were living in a different district from the one they were in a year before.

Table 105

ZAMBIA - PROPORTION BY PROVINCE OF AFRICANS LIVING IN OTHER PROVINCES, URBAN AREAS OR ABROAD

Province (rural areas)	Urban Areas	Farmlands and elsewhere	Outside Zambia	% Africans living in other provinces or in urban areas or outside the country
Central			} } } } } }	37.5
Copperbelt				23.6
North-Western & Luapula				25.5
Eastern	18.4	4.1		29.8
Northern				30.3
Southern				22.0
Western				
TOTAL	18.4	4.1	4.5	26.0

Looking at the migratory pattern of non-indigenous Africans one finds that around 1950, the total alien share in urban areas and European farmlands was of the order of 15-16%. This dropped to 11% in 1963 and declined further in the 1969 and 1974 censuses, although the total non-indigenous African population in rural areas has been going up from almost zero percent in 1950 to 5.4% in 1963. This implies that the alien African migrants were not coming into the country principally because of urban employment opportunities. Of course, this pattern of migration has now been very much influenced by the geo-political position of the country in the Southern African region.

(1) Poll tax was abolished in 1963 by the African nationalist dominated colonial administration.

(2) Primary school enrolment as a percentage of the nominal primary school age-group (7-14) stood at 86.3% in 1976 for Zambia.

The migratory pattern for non-Africans has been fairly straightforward, starting with almost no such population at the turn of the century to reach 84 000 by the early sixties. However, with changes in government at independence and after, there has been a marked decline, particularly in the European population. The Asian community has on the other hand been increasing throughout to reach an estimated 19 000 in 1978.

VI. THE ZAMBIAN DEMOGRAPHIC CENSUSES AND SURVEYS - AN OVERVIEW

The history of census taking for Zambia is fairly short, apart from the ones on the small but fairly dominant non-African population. The first large sample survey of Africans took place in 1950. This survey depended on villages for its primary sampling units in the rural areas over which a systematic sample of one in ten was drawn. The urban sample on the other hand was drawn by taking a systematic sample of one in ten of dwellings. However earlier population estimates were based on the taxation system (the "situpa") whereby hut/poll tax payers were recorded and such records domiciled to their native districts. Dependents were also noted at the same time. However, because the tax system was hated, incomplete population accounting was the result.

Several socio-economic and demographic surveys were carried out in urban areas between 1950 and 1963. These gave valuable information on patterns of urbanisation, employment structure and on socio-economic characteristics of the urban African. However, it was not until 1963 when the first complete African census was conducted. As by this time the hut/poll tax system was no longer in existence, there were no up-to-date village frames and the census had to depend on the chiefs' boundaries for their primary units, which varied in size from as little as 2 000 to over 20 000 persons in some cases. However, villages and chiefs' boundaries suffered from several drawbacks as good frames. There are no discernible fixed boundaries for them. Furthermore, they could expand, contract, overlap, disintegrate, have two or more names and so forth. These frame problems for the rural areas led to the use of polling district boundaries of 1968 in the 1969 census. These were well defined but were much too big with an average population of about 3 000.

The 1974 sample census also used these polling district boundaries. However, these are much too large for proper sampling purposes and have enabled the Central Statistical Office only to provide province-wise estimates of results. Because of this, particularly in view of the present government's desire to devolve the decision making process, district level estimates cannot be given. It is with this in mind that it has been decided for the 1980 round of Population, Housing and Agricultural censuses to undertake first a census mapping project. This aims at demarcating the whole country into standard enumeration areas which will have uniquely identifiable boundaries with an average population of 400-500 persons. Once this project is complete it will be easier for the Central Statistical Office to undertake various demographic surveys which will have both national and local import.

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is an informal structure founded to establish liaison and coordination between French specialists interested in African population questions.

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