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LEVELS, PATTERNS, AND IMPLICATIONS OF FERTILITY IN AFRICA

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## LEVELS, PATTERNS, AND IMPLICATIONS OF FERTILITY IN AFRICA

Introduction

1. The problem of data collection in African demography is very well known, and the United Nations as well as other agencies and individuals have tried to solve some of them through technical meetings, documentation and direct assistance to countries.<sup>1/</sup>
2. The crucial issue is that very few African countries have developed reliable systems of vital registration and, in consequence, most of them depend on indirect methods of analysis and on retrospective demographic sample surveys for obtaining vital rates. Neither of these approaches is error-proof. The accuracy of estimates made by indirect techniques depends both on the quality of the data available for making the estimates (for example, the quality of the age data affects very markedly "reverse-survival" estimates) and on the robustness of assumptions which might not be true at all times. The same limitation applies to some of the recently developed methods of life table techniques by Brass, Coale and others.<sup>2/</sup> Survey and census data collected on a retrospective basis are generally deficient particularly with respect to the recording of ages, fertility, and of mortality among children ever born. Various analytical methods have been developed to adjust the measures derived from such retrospective data. However, it is important to note again that the reasonableness of such adjustments would normally depend on external considerations and the nature of assumptions (especially of mortality levels) employed.
3. With the above limitations in mind, this paper will present and compare fertility rates from data considered to be fairly accurate for different parts of Africa. Of all the areas included, Algeria, Tunisia and the small off-shore islands are the only places where vital registration systems provided the basis of the national rates presented. Also to be analysed in this paper are the implications of the current levels of fertility for development together with the extent of each African country's awareness of the problems posed by high fertility in their development programmes

Fertility Levels

4. As can be seen from Table 1 in the Appendix, crude birth rate provides the commonest as well as one of the basic indications of the level of fertility in Africa, and four different estimates of this rate have been given. Although differences in the absolute values of the different

<sup>1/</sup> Nora P. Powell, "United Nations Programmes and Recommendations on Problems Involved in Data Collection in the Demographic Field," I.U.S.S.P. Conference, London, 1969.

<sup>2/</sup> Brass et al., The Demography of Tropical Africa, Princeton University Press, Princeton, 1968; United Nations, Methods of Estimating Basic Demographic Measures from Incomplete Data, Population Studies No. 42, New York, 1967.

estimates exist, they do not differ in the type of message relayed about the relative levels of fertility in and between countries and regions. Considering the unweighted average of all estimates, crude birth rate in North Africa ranges from 39 to 50 births per thousand with Libya possibly showing the lowest and Sudan the highest. Central Africa shows a range of 37 to 50 with Western Cameroon, as against Eastern Cameroon recording the lowest but one, having the highest rate of 50 births per thousand. Gabon consistently shows the lowest rate of all Central African countries in all the four estimates. Mainland East Africa (without Mauritius) shows less variability with a range of 43.0 to 52.0. The countries in the area with significantly very high rates include Kenya (52.0), southern Rhodesia (51.3), Rwanda (51.3), and Zambia (50.5). Mauritius has the lowest rate (31 per 1000 in 1968) in East Africa.

5. Many countries of high fertility are found in West Africa, and with the exception of Sierra Leone, most countries in the area have a crude birth rate well above 40 births per thousand. Guinea ranks as the highest with a crude birth rate of 62 per 1000 given by two estimates. Other markedly high fertility countries include Mali, Ivory Coast, Ghana, Togo and Nigeria. While some West African areas show very high fertility, most off-shore island countries record the lowest crude birth rates in Africa. The case of Mauritius (31) has already been mentioned, and there are some others with relatively low registered crude birth rates. At the same time, Sao Tome and Principe (50.5), and Cape Verde Islands (42.9) on the West African coast, have reasonably high rates which compare favourably well with some of those on the West African mainland.

6. The regional variations outlined above are also basically supported by available estimates of other fertility rates shown also in Table 1A. With minor variations, the three sets of total fertility rates clearly emphasize the significantly high level of fertility which, on average, is well above six in the continent. The average level approaches seven in places like Mali (6.8), Ivory Coast (6.7), Dahomey (6.7), Niger (6.8), Ghana (6.7), Zambia (6.7), Kenya (6.8); it is either seven or more in countries such as Togo (7.2), Rwanda (7.0), and southern Rhodesia (7.1). Eastern Cameroon, as also shown by her crude birth rate, had in conjunction with Gabon (which also had a low crude birth rate) a relatively low estimate of total fertility well below five. On a broad regional basis, many more countries in East and West Africa, than in Central, had reasonably high levels of total fertility in the region of six or more. This pattern of difference is also reflected in the estimates of general fertility rates which clearly show most of the Central and Southern African countries as having rates below 200, while a significant number of countries in North, West and East Africa reached levels of 200 or more. As for the gross reproduction rates, the regional variations remain almost the same. The prevailing rate seems to be generally about three or very close to it in many countries listed in Table 1A. As already shown for other measures, the regional variations in the level of the gross reproduction rate clearly establish that the highest fertility rates exist in West Africa, while Central and Southern Africa have on average the lowest.

### Age Patterns of Fertility

7. A better appreciation of the high level of fertility in Africa can be gained by studying the age patterns of child bearing in various areas of the continent. In the present state of data collection, such a study suffers from the already indicated limitations arising from response biases in reporting age and other vital events. However, as already indicated elsewhere, "all such errors and biases (other than those relating specifically to age reporting) may not have marked effect in studies of relative as opposed to absolute magnitudes". <sup>1/</sup>

8. The data on the age-specific birth rates for this analysis have been assembled for 32 countries as can be seen in Table 2 in the Annex. By mere inspection and by examining the graphs of age specific birth rates for selected countries in figures 1a and 1b, we confirm our earlier observation about the high level of fertility in Africa. This is apparent from comparing the age-specific fertility curve for the white populations of South Africa and South West Africa with those for a selected number of other African countries.

9. One obvious fact, which also aids our understanding of the existence of high fertility among Africans, is that the peak of fertility curves occurs in early ages among many populations in Africa. This attainment of an early peak is linked with the occurrence of early marriages and the virtual lack of deliberate family planning, which means that child bearing begins early and goes on more frequently and longer than is the case in the low fertility countries. Thus, in terms of early marriage, it can also be seen from Table 2 in the Annex that high fertility occurred in the relatively young age group, 15-19 years. Among the North African countries, Sudan with the rate of 179 for this age group followed by Algeria (127) topped the list when compared to countries such as U.A.R. (45), Morocco (97) and Tunisia (36). The rates are consistently high in West Africa where the lowest rate was 136 for Ghana and where as many as three out of the nine countries listed recorded rates around 200 per 1000. Topping the list were Guinea and Mali. In South Africa and South West Africa, the division between whites and non-whites is clear, with the latter generally recording significantly higher fertility at early ages, 15-24 years. In fact, the white/non-white differences not only show that white women start child bearing later than their non-white counterparts but also that they bear fewer children at older ages. For example, at ages 35-39 in South Africa, the fertility of white women was 64 as against 178 for the coloured population. In South West Africa, the rates were respectively 92 and 208.

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<sup>1/</sup> Som, R.K. "Age Patterns of Fertility in African countries", International Symposium on the Problems of Human Reproduction, Varna, 25-30 September, 1968, p. 1.

### Types of Age-Specific Fertility Curves

10. On previous occasions, the United Nations as well as the Demographic Section of the Economic Commission for Africa<sup>1/</sup> mapped out population types based on the criteria of fertility level as measured by the gross reproduction rate, and on the peak ages of birth rates. Employing both criteria with the aid of the data on age-specific birth rates in Table 2 in the annex, ten types of age specific fertility curves have been mapped out in Table 3 for the given African countries. No doubt, the classification necessarily involves making some arbitrary judgements which do not destroy the heuristic value of the exercise as evidenced by the description which follows.

11. The first type of fertility curve on the list implies the existence of low birth rates, and is found only among South Africa's white as well as Asiatic populations and also the white population in South West Africa (Namibia). For this group, the level of the gross reproduction rate (1.7) is, as in most European countries, below 2. Their peak age of fertility, when maximum fertility occurs, is 20-29 years and as shown by the percentage distribution of their age specific fertility rates (Table 4) their child bearing tended by comparison with the distribution for high fertility types to be concentrated in a narrower range of ages, being in this case 20-34 years. Type 2 of the fertility curves has a low medium range of fertility with gross reproduction rate slightly exceeding two (2.2 to be exact) and occurs in four (Gabon, Mauritania, Cameroon and Comoro Islands) countries already shown in this paper to have a relatively lower fertility than most other African groups. The age of maximum fertility is, as for the white population with low fertility, broadly based and lies in the range 20-29 years. The same peak age is true of type 3, the high medium range with gross reproduction rate well above two and equal to 2.5. Senegal, Chad, Congo Kinshasa, Uganda and Congo Brazzaville come under this group. But the high and low medium ranges show a more dispersed concentration of child bearing than that shown for the low fertility range. More child bearing has occurred at earlier and later ages among the former than the latter.

12. Next in the chain of types by fertility levels are the high fertility groups (types 4, 5, 6 and 7) with a gross reproduction rate in the range of 2.7 to 3.0 and also a variety of ages of maximum fertility. Type 4, including only the small island of Seychelles (GRR = 2.7), has a relatively early and very broad peak at ages 20-34 years. Type 5 including only U.A.R (GRR = 2.8) has a fairly late and broad peak ranging from 25 to 34 years. Rhodesia (GRR = 2.8), the only country in type 6, portrays a very skewed distribution with a peak at the relatively early ages of 20-24. The last of the high fertility group, type 7, with a GRR of 3.0 (the highest) for

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<sup>1/</sup> United Nations, Population Bulletin of the United Nations, No. 7-1963 (With special reference to conditions and trends of fertility in the world), U.N. Publications, Sales No. 64, XIII. 2, New York, pp. 106-109. Som. R.K. Ibid, p. 1-2.

Fig. 1a AGE SPECIFIC BIRTH RATE CURVES FOR SELECTED POPULATION GROUPS IN AFRICA

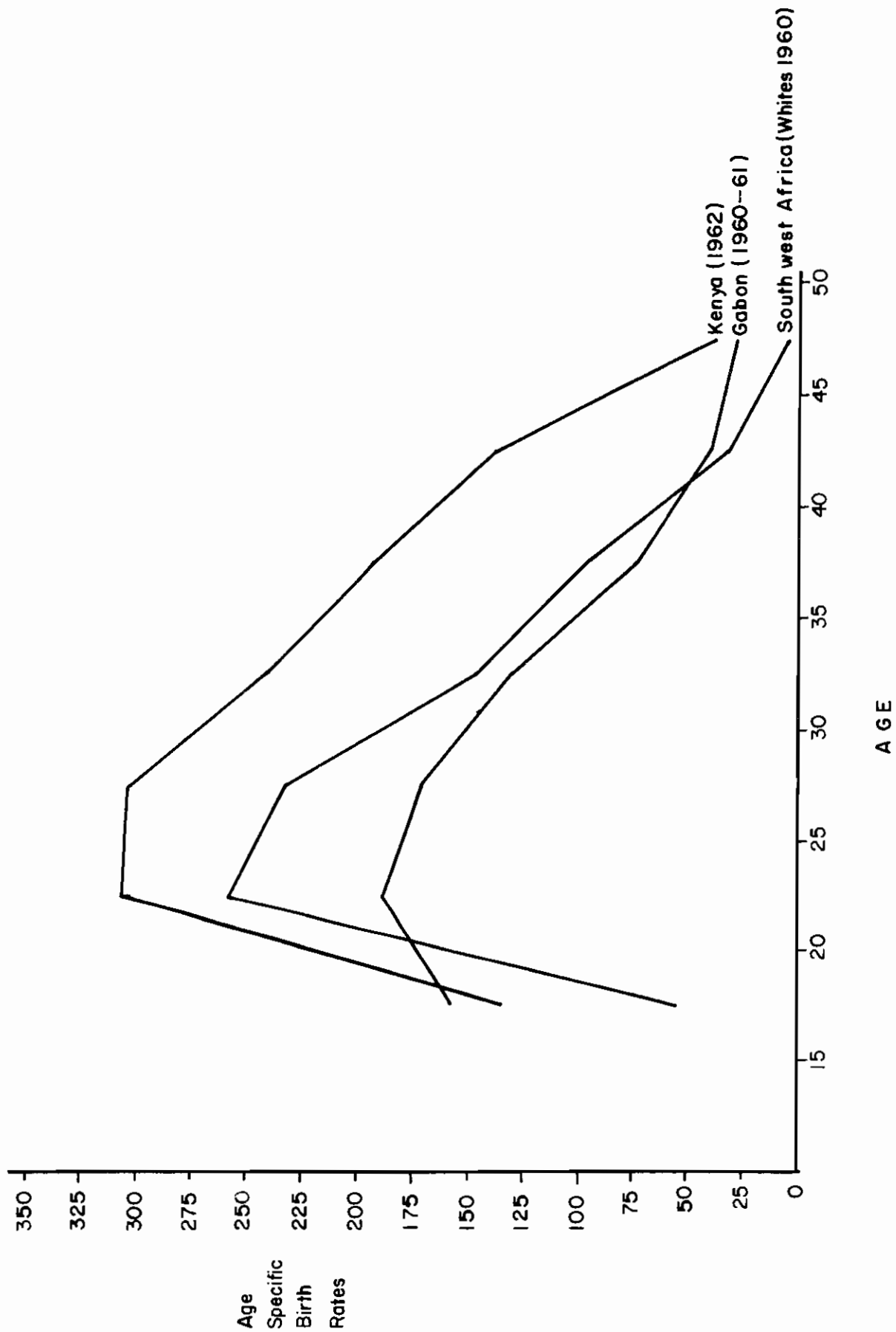


Fig. 1b. AGE SPECIFIC BIRTH RATE CURVES FOR SELECTED POPULATION GROUPS IN AFRICA

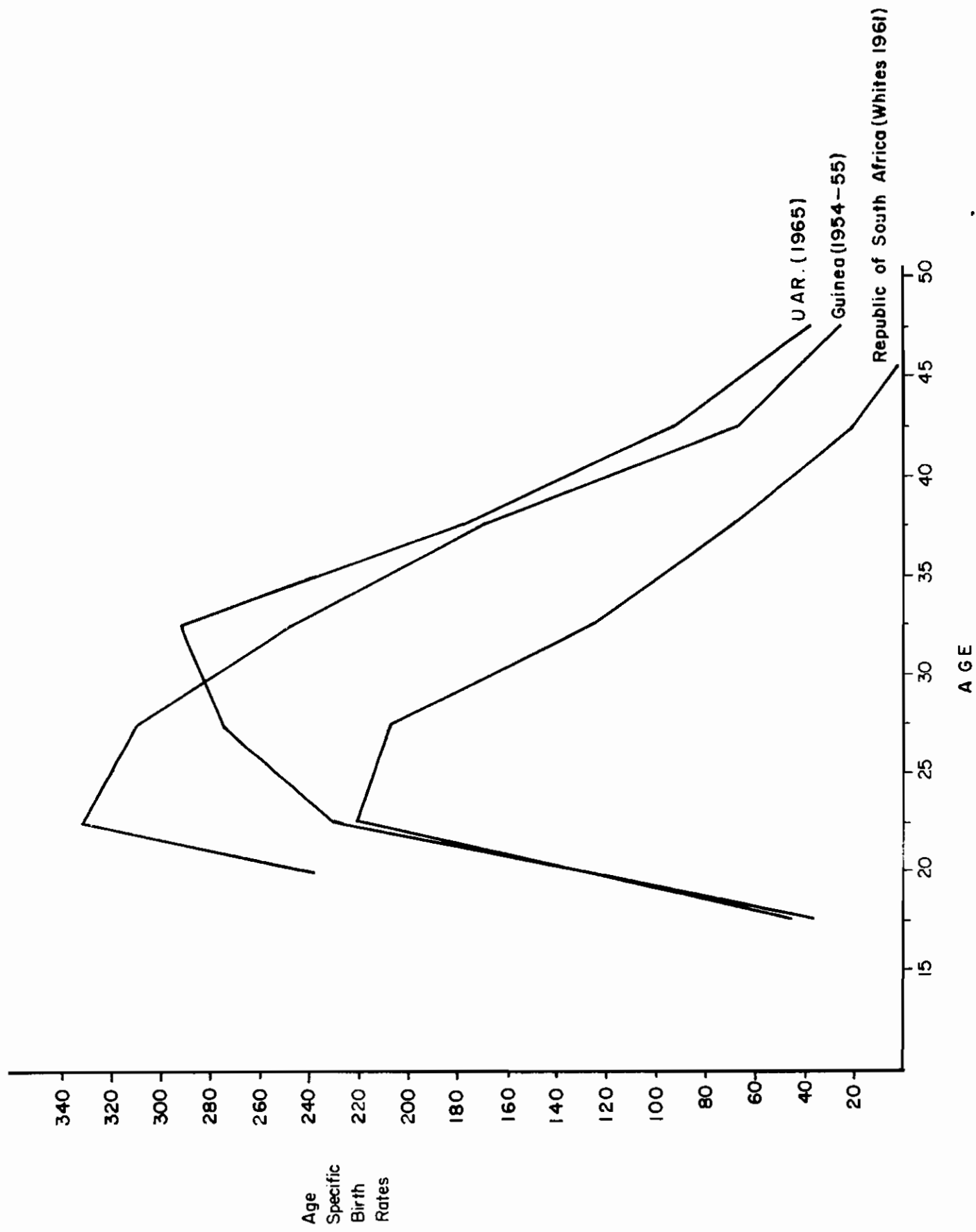
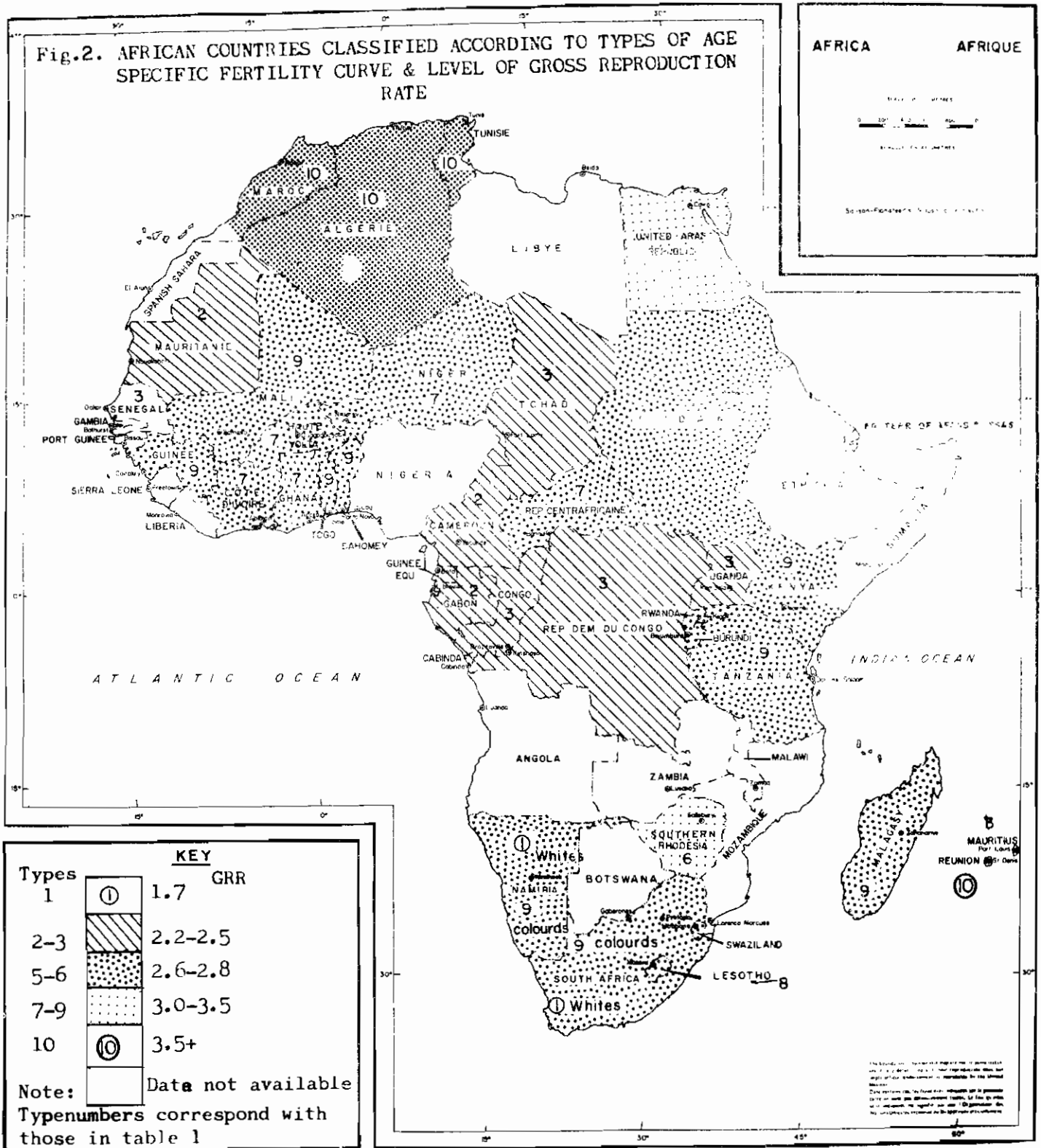


Fig.2. AFRICAN COUNTRIES CLASSIFIED ACCORDING TO TYPES OF AGE SPECIFIC FERTILITY CURVE & LEVEL OF GROSS REPRODUCTION RATE





Ghana, Central African Republic, Niger, Ivory Coast and Upper Volta exhibits a broad and a relatively early peak of the type (20-29) shown for the low and medium range fertility types.

13. The very high fertility group in the study with a gross reproduction rate of over 3 falls into three main types (8, 9 and 10). Sudan and Swaziland, members of type 8, have a GRR of 3.3 and a very broad peak at ages 20-34 years. Showing also a very broad peak (20-34) but a higher GRR of 3.5 are countries, including Morocco, Algeria, Tunisia and Reunion, in type 10. For type 9, involving nine population groups, the GRR was also 3.5 but the peak ages of the birth rate was relatively early and broad at 20-29 years.

14. On a rather broad descriptive level, figure 2 summarises the prevailing pattern based on levels and types of curves. Apart from the location of the white population in South West Africa and South Africa, four main area-types of fertility appear to be clearly designated for two other population groups in the study. The first is the medium fertility area-type which is common to Central Africa and stretches from the Republic of Chad through Camerouns, Gabon, Congo Brazzaville, Congo Kinshasa to Uganda. Senegal and Mauritania, on the North-west Coast, are also members of this group. Second, comes a fairly extensive area-type of high fertility found mostly in East and West Africa. On the West Coast, Mali, Niger, Upper Volta, Ghana, Guinea, Togo, and Dahomey belong to the group, while in the East, the area stretches from Sudan through Kenya, Tanzania, to Malagasy. Also included are non-white groups in South Africa and South West Africa. Between the high and medium types, there is the area represented by U.A.R. and Southern Rhodesia with GRR of 2.6 to 2.8. The next and final area-type of very high fertility range occurs in North Africa with GRR over 3. The three adjacent North African countries (Morocco, Algeria and Tunisia) are those concerned.

15. From the above description, it seems obvious that no clear-cut patterns of relationship can be established between the relative level and the peak ages of fertility. Thus it can be seen that the low fertility white population has a broad peak of 20-29 years which is also applicable to populations with higher fertility in types 2, 3, 7 and 9. In fact, if the low fertility countries covered in the study were many, it might have been possible to find many more of them with no difference from the high fertility ones in the distribution by peak ages of fertility as was the case in the already mentioned U.N. study. All the same, the low fertility countries differ from the medium and high fertility ones in the degree of concentration of child bearing. As Table 4 clearly shows, child bearing was concentrated more in the age group 20-39 years for women from the low fertility areas than for those from the medium and high fertility countries. Thus, the latter group of countries, while showing some imprecise pattern of variability in the concentration of child bearing according to age, proved to have a much more dispersed distribution of births. They have more births at earlier and later ages than the women in the low fertility group, and this is supported by their generally higher levels of the standard deviations of their mean age of child bearing.

16. Briefly, by using estimates of the parameters of the distribution of births according to age, it is possible, without necessary reference to levels, to define six types of curves for the countries dealt with in this study. The first one is the LOW FERTILITY/BROAD PEAK CURVE for Whites and Asians. This type, as already shown, has a less wide-spread distribution, not very skewed, and markedly more peaked than others ( $\beta_2 = 2.84$ ). The second type of curve is the MEDIUM/VERY HIGH FERTILITY WITH BROAD PEAK represented by types 2, 3, 7 and 9 of the original classification. These have broadly similar levels of standard deviation (7.8-7.9) from the mean age of child bearing in addition to skewness ( $\beta_1$ ) of distribution around 0.2, and of peakness ( $\beta_2$ ) between 2.4 and 2.5. Only one country, Seychelles, has the third type of curve, which is characterized by HIGH FLATILITY and VERY BROAD PEAK (type 4 of the original listing). Though the distribution of births is less concentrated, the skewness ( $\beta_1$ ) of the distribution around the mean is the same (0.11) as for the low-fertility-broad-peak type. Two markedly different curves are the "HIGH FERTILITY BROAD-LATE-PEAK" and the "HIGH FERTILITY EARLY PEAK" types. U.A.R. is the only country with the first type and has the highest mean age of child bearing (30.9 years). Rhodesia also is the only place with the second type, and records the lowest mean age of child bearing. The early peak is attained at ages 20-24 and, in consequence, the measure of skewness ( $\beta_1 = 0.5$ ) is the highest of all. The last type of curve, the VERY HIGH FERTILITY/VERY BROAD PEAK INCLUDES types 8 and 10 of the original types. The distribution here shows standard deviations (7.8 - 8.6) higher than most others.

#### Implications of High Fertility in Africa

17. The critical highlight of the demographic situation in Africa from the point of view of economic development is the rapid rate of population growth which, in the light of prevailing levels of fertility and mortality, is second only to that in Latin America. Even so, the possibility of the present position altering in the next decade or two, with Africa surpassing all other areas, remains very high on the logical grounds that fertility, according to recent United Nations projections, will remain high or constant while mortality continues to fall. Already we have on record countries with annual rates of growth very close to or above the three per cent per annum mark, while some recent censuses have returned much higher populations than had been expected.<sup>1/</sup> The likelihood of an accelerated rate of population growth is further strengthened by the fact that improved economic and health facilities could not only depress further the level of mortality but could lead to some slight increase in fertility, at least in the short run.

18. For development purposes, the readily quantifiable consequence of rapid growth rates in Africa is reflected in the high proportion of children and

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<sup>1/</sup> United Nations Economic Commission for Africa, Demographic Handbook for Africa, March 1968, Table 22, pp. 97-99.

the small proportion, in consequence, of adults in the economically most productive ages in the population. About 43 per cent of the population in Africa are under 15 years. This is in contrast to a maximum between 25 and 30 per cent in highly industrialized countries of Europe and America. The occurrence of such youthful age structure in Africa invariably imposes on the economically active population a heavy childhood dependency burden in particular, and precipitates a number of consequent economic problems.

19. Thus, in the circumstances, a high rate of population increase, investment-wise, could more than offset the contribution to economic prosperity which all other factors of production make, assuming they are in sufficient supply. While land is relatively plentiful, capital for industrialization is very scarce, and what is worrying is the fact that the present high rate of population growth appears, at least in the long run for most African countries, to be more rapid than the rate of expansion of opportunities for productive employment. The prevailing heavy burden of childhood dependency also imposes a constant pressure, at both personal and national levels, to divert investment funds to less immediately productive uses such as education and the provision of other social amenities. In fact, what happens in most cases of rapid population growth is that national wealth is spent in maintaining and servicing rather than in improving education and standard of living. Apart from the increased burden borne by workers in this respect, the present high level of fertility, in the long run, will make significant additions to the size of the labour force as children graduate through life into older age groups. This would necessarily involve creating additional wage and self-employment opportunities to absorb the new entrants.

#### National Awareness of the Implications of High Fertility

20. Recognition of the population problems confronting African countries in their development strategies is now very widespread. This is evident from the fact that almost all development plans of the African countries contain references, explicitly or otherwise, to the association between the prevailing demographic situation and the rapid increase in urbanization, the number of dependant children to feed and educate, and the number of them to be employed at later ages. What is perhaps not sufficiently articulated is the fact that the root cause of all these problems is the existence of high fertility accompanied by declining mortality, both of which interact to produce a rapidly expanding population. In the words of the Executive Secretary of the ECA, Mr. Robert K.A. Gardiner, "Most African development plans underline the importance of social, economic and administrative reforms. But few seem to be concerned about the high rates of growth of African population, and fewer still with economic integration as an instrument of accelerated growth."

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1/ United Nations Economic Commission for Africa, "Demographic Content of African Development Plans", ECA Seminar on the Application of Demographic Data and Analysis to Development Planning, Addis Ababa, 2-9 June 1969, p. 19.

Excerpts already compiled from the various plans drawn up in recent times by African governments clearly support the present contention. <sup>1/</sup>

21. On the issue of absolute population size, countries such as Somalia and Ethiopia want more people because of low population density and the need for an enlarged labour force and domestic market. Conversely, some others have shown a desire for smaller populations. Among those, as shown by their plans, are Kenya, Mauritius, Arab Republic of Egypt, Tunisia, Morocco, Ghana, Botswana and Nigeria.

22. The consequences of internal re-distribution of population, especially between rural and urban areas, received frequent attention in the plans of many countries. The failure of the provision of amenities and employment to catch up with the rapid rate of urban growth has also given cause for concern to the planners of Nigeria, Zambia, Mauritania, Central African Republic, Ivory Coast, Democratic Republic of the Congo and many others. As a result of the remarkably high proportion of children in the population, most African development plans have given great attention (especially through spending large sums of money) to the provision of educational facilities. But not all realise, as the 1966-70 plan of Mauritius put it, that though "Education is crucial to the development effort ... much of the expenditure on education under this plan must go simply to keeping step with the growing population". Manpower and unemployment problems are also tied-up with the demographic situation in Africa, and the need to provide additional employment opportunities for the growing labour force has been emphasized by the governments of Ghana, Mauritius, Zambia, and virtually all governments in Africa except those, like Ethiopia, which believe that a high rate of population growth is conducive to generating the additional labour force needed to meet the demands of the economy.

23. As already indicated, the big lacuna in the effort to grapple with Africa's current development problem lies in the failure to tackle the proximate source of all the problems. While in most development plans, large sums of money are allocated to providing health facilities, not much is done or said, except in a few plans, on the broader issue of fertility and family planning. To date, eight African countries, ARE, Botswana, Morocco, Tunisia, Kenya, Mauritius, Ghana and Nigeria have official population policies which aim at reducing the rate of population growth by curtailing fertility through family planning. Other countries including Gambia, Dahomey, Ethiopia, Sierra Leone, Zambia and Southern Rhodesia do not oppose family planning but have no official policy on the matter.

<sup>1/</sup> United Nations Economic Commission for Africa, Ibid.; R.K. Som "Extracts from some African Development Plans", ECA Work in Progress Paper, 1970. The Population Council, "Governmental Policy Statements on Population: An Inventory", Reports on Population/Family Planning, February 1970; pp. 11-51. Dorothy Nortan, "Population and Family Planning Programmes: A Factbook", Reports on Population and Family Planning, issued by the Population Council, December 1969.

24. The adoption of a population policy in the above mentioned countries is perhaps a healthy sign that other countries might reconsider their attitudes. Not long ago, many people would have considered family planning in any African country taboo on religious, cultural and economic grounds. But we now have ample evidence that opposition to family planning among African women is not as high as people think. Quite a significant proportion of women support family planning and many expressed a desire to learn something about the available methods. <sup>1/</sup> Male attitudes are less flexible but also changeable. To this end, what is perhaps most needed everywhere is a concerted scientific approach to the problem of fostering family planning. In the first place, governments, having made up their minds about having a population policy, should execute programmes of motivation and education, set up machinery for finding out people's acceptance of the various methods of family planning, and then provide adequate facilities for obtaining cheap, reliable and acceptable methods. Perhaps the appropriate note on which to end this presentation is that by the United Nations Committee for Development Planning, which in its proposal for the second United Nations Development Decade stated:

"The Committee considers that countries should indicate the objectives of their demographic policy and the General Declaration should call on each developing country that suffers from a problem of population growth to introduce effective measures, including, for example, by the end of the decade, effective services for family planning truly available to at least half the population ... Other measures such as improvement in the quality and quantity of general education and of health services and job opportunities for women are all likely to have considerable effects on reproductive patterns ... If appropriate steps are taken, significant reductions in the birth rates, and in the rates of over all increase of population, are possible and ... targets established for this purpose in the context of national planning are a valuable aid to policy making." <sup>2/</sup>

25. It is significant that the First Session of the Conference of African Demographers, which considered matters arising from the African Population Conference (9 - 18 December, 1971), re-echoed the above views of the United Nations Committee for Development Planning during its recent deliberation in Accra, 20-22 December 1971. Clearly, the Conference endorsed "the conviction that economic and social development is an essential element and pre-requisite to an effective population policy and urges all member

<sup>1/</sup> Apart from other studies in West Africa by J.C. Caldwell and P.O. Ohadike, see ECA Views on Family Planning expressed by participants in the Seminar on the Organization and Administration of Maternal and Child Health Services by WHO, POP/INF/40, p. 2.

<sup>2/</sup> United Nations, Towards Accelerated Development. Proposals for the Second United Nations Development Decade, Report of the Committee for Development Planning, UN Publication Sale No.: E. 70.11.A.2, pp. 7-8.

States to give full attention to their demographic objectives and measures during the biennial review and appraisal of the implementation of the Second United Nations Development Decade; ... and to co-operate in achieving a substantial reduction of the rate of population growth in these countries which consider their present rates of growth as too high and in exploring the possibility of setting targets for such reduction in these countries. The Conference recommended also that adequate attention ... be given to the problems of sub-fecundity and sterility prevailing in some parts of Africa ..." 1/

26. In addition, recalling the various resolutions of the General Assembly and of the Economic and Social Council, which inter alia recognize the rights of parents to determine freely and responsibly the number and spacing of their children and the knowledge and means to be made available to those who desire these, the Conference recommended that maternal and child health services should include family planning services for those who desire these, and that where family planning programmes are in operation, maternal and child health services should form a part of such family planning programmes" 2/

27. Already, by a resolution of the General Assembly, the United Nations can now provide to countries, at the request of their governments, operational assistance in all fields of population. For this purpose, the Fund for Population Activities, created by the Secretary General, is proving to be a very big help. At the regional level, in the words of the Director of the United Nations Population Division, the creation of the Population Programme Centre is evidence of the response of the Economic Commission for Africa to the increased emphasis on regional and country needs, and also an indication that the African population programme forms an integral part of the world-wide population activities of the United Nations. The Centre is now considered to be the focal point for United Nations assistance in population matters to African countries. This is done by creating awareness of the population situation in Africa, helping governments to set up offices for handling population problems, training personnel for such offices, and assisting in the formulation of national population policies.

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1/ ECA, Report of the First Session of the Conference of African Demographers (Accra, Ghana, 20-22 December 1971), E/CN.14/553, 24 February 1972, p. 22, para. 9.

2/ Ibid., p. 23, para. 11.

Table 1  
Crude birth rates, general fertility rates, and gross reproduction rates

	Year	Official Estimate	Estimate by Coale & Page 1/	Estimate by INSEE 2/	Other 3/	Total Fertility Rate (per 1000)		General Fertility Rate	Cross Reproduction Rates
						Estimate by Coale & Page	Estimate by INSEE		
100 AFRICA .....									
198 DEVELOPING AFRICA .....									
155 SOUTH AFRICA .....									
108 NORTH AFRICA .....									
101 Morocco .....	1962	46	49	45	49.6*	6.3	6.3	216	3.4
102 Algeria .....	1963	44 r	45	43	49.5*			213	3.40
104 Tunisia .....	1968	40 r	50	61	46.4*			191	3.50
105 Libya .....	1964	37-40 x	48	55	46.4*			186	3.1 x
106 U.A.R (Egypt) .....	1967	39 r	50	54	44.5*			182 y	3.0 x
107 Sudan .....	1956	52	49	52	49.0*			202-242 y	2.8
									3.0-3.5
									3.40
132 WEST AFRICA .....									
111 Mauritania .....	1964/65	45	40	45				173	2.1 y
112 Senegal .....	1960/61	43	50	43				174	2.6
113 Mali .....	1960/61	55	52	61				240	3.8
114 Ivory Coast .....	1961	56	48	55				220	3.2
115 Upper Volta .....	1960/61	53	50	53				220	2.9
116 Dahomey .....	1961	54	51	54				197	2.9
117 Niger .....	1959/60	52	40	52				226	3.3
121 Gambia .....	1967	46 r	40	62				200	3.1
123 Guinea .....	1955	62	48	62				128	2.5
125 Sierra Leone .....	1963	39	39	40				201	3.5
126 Liberia .....	1962	44	40	40				203-224 y	3.3 y
128 Ghana .....	1960	47-52	54	55				228	3.5
130 Togo .....	1961	51	54.8/	55				227	2.7
131 Nigeria .....	1965/66	50	54.7/	56					
146 CENTRAL AFRICA .....									
133 Cameroun (Eastern) .....	1967	37						132	2.2
134 Cameroun (Western) .....	1964/65	50						178	3.1
136 Chad .....	1963/64	45		49				165	2.4
137 Central Afr. Rep. ....	1959/60	48		48				157	2.5
138 Gabon .....	1960/61	35		35				116	2.1
139 Congo (Brazza.) .....	1960/61	41		47				145	2.8
145 Congo (Dem. Rep.) .....	1955/58	43		43				190.5	2.4
196 EAST AFRICA .....									
151 Rwanda .....	1957	52		52				220	2.1
152 Burundi .....	1965	46		46				178	2.6 x
163 Rhodesia Southern .....	1962	48		53				207	2.9
162 Zambia .....	1963	51		50				181	3.5
164 Malawi .....								209	3.3
169 Madagascar .....	1966	46		46				125	2.9
172 Mauritius .....	1968	31 r							
180 Tanzania (Zan) 175 .....	1967	47		46					
" (Tang) 180 .....									
183 Uganda .....	1959	42		44				187	2.6
185 Kenya .....	1962	50		48					
187 Somalia (North) .....									
Somalia (South) .....									
195 Ethiopia .....	1963	48		48					

Table 1 cont'd

	Year	Official estimate	Estimate by Coale & Page 1/	Estimate by INSEE 2/	Other 3/	Total Fertility Rate		General Fertility Rate	Gross Reproduction Rate
						Estimate by Coale & Brass et al Page	Estimate by INSEE		
OTHER AFRICA .....									
170 Comoro Islands.....	1964	20.6 r							
173 Seychelles .....	1967	37.5 r					151		3.2
171 Reunion .....	1968	37.3 r							
190 Fr. Afars & Issas .....	1968	27.6							
153 Angola .....	1945-50	49 x	47		45	6.2			3.0
155 South Africa 1C/ .....	1950-55	46 x	41			5.6	198		
156 South West Africa.....			44			5.7			
157 Botswana (Bech.) .....	1956	41	48			6.5			2.7 x
158 Lesótho (Basu.).....		40	42			5.3			2.4 x
159 Swaziland .....		36.4							
167 Mozambique .....	1945-50	47 x	45		42	6.1		166	2.6
143 Sao Tome & Prin .....		53						145	
141 Spanish Equat. Reg.....									
120 Cape Verde Is.....	1967	42.9							
122 Portuguese Guinea.	1950		39		37	5.1			4.8
109 Spanish North Afr.									
199 Africa unspecified									

r - Estimate from registration data.

x - United Nations Estimates.

y - Economic Commission for Africa estimate.

Official Estimates - taken from the United Nations Demographic Yearbooks, Population and Vital Statistics Report, Economic Commission for Africa, Demographic Handbook for Africa and National Publications

1/ Hilary J. Page and Ansley Coale, Estimates of Fertility and Child Mortality in Africa South of the Sahara, Seminar on Population Growth and Economic Development Nairobi, 14-22 December 1969.

2/ Institut National de la Statistique et des Etudes Economiques, Annuaire Noire, Madagascar I, Comores Demographique Comparee Tome, I, Paris, 1967.

3/ Mainly from W. Brass et al, Demography of Tropical Africa.

4/ On the basis of repeated visits; G. Sabagh and C. Scott, A comparison of different survey techniques for obtaining vital data in a developing country (in press).

5/ For Agricultural Sector

6/ Obtained on recall analysis: R. Nadot, Afrique Noire, Madagascar, Comores, demographie comparee, 3 Recondite (INSEE: 1966) and R.K. Som, Recall Lapse in Demographic Enquiries (Asia Publishing House: 1970) The unadjusted rate was 50. Estimate by SKK. Gaisie, Dynamics of Population Growth in Ghana, Ghana Population Studies No. 1.

7/ Federal Office of Statistics, Lagos, Rural Demographic Sample Survey 1965-1966.

8/ Estimates from the 1952-53 Census data.

9/ Obtained on recall analysis, Nadot, op.cit. The unadjusted rate was 45.

10/ For Bantu population

\* Estimates by the Cairo Demographic Centre