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**STATUS OF DEMOGRAPHIC DATA  
RELATING TO SCHOOL AGE  
POPULATIONS IN SELECTED  
DEVELOPING COUNTRIES**

prepared by the  
*Population Reference  
Bureau, Inc.*  
for the  
*Social Sector Policy  
Analysis Project*  
of the  
Agency for International Development  
operated by the  
Academy for Educational Development

**Status of Demographic Data  
Relating to School Age Populations  
In Selected Developing Countries**

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## INTRODUCTION

This report presents an inventory of school-age populations as found in the most commonly used sources. Its purpose is to describe the range of error in past estimates, to compare them to current data, and to evaluate a potential range in the size of the 5-9 and 10-14 age groups in 12 large developing countries.

In this report, the following questions are addressed:

- o What was the projected size of the school-age population in 1990 in projections performed in the early 1980s? How far off were those projections?
- o To what degree have the many censuses conducted around 1990 changed the above outlook?
- o How have recent fertility trends affected the numbers of children in school ages? Were changes in fertility anticipated?
- o Given the above, what is the prospect for school-age population sizes in 2000?

As will be seen in the individual country reports, the large number of censuses taken in the 1990 "round" have changed the size of estimates. For most countries, however, only total counts are available at this writing. The processing of age-sex detail is a slow procedure. For India and Bangladesh, the expected date of availability is sometime in 1993. But these censuses afford a once in a decade opportunity to reevaluate each country's demographic situation.

The main sources utilized are as follows. First, the United Nations Population Division's Assessment provides a standard source which is the most widely used. The Assessment is published every two years. The 1992 series is nearly complete and is

expected to be released in mid-Summer 1992. In Table 1 in the Report, the UN's 1980 and 1990 projections are shown for comparative purposes. This allows an examination of just what the expectations were in 1980 and how they had changed by 1990. The UN produces three main series, High, Medium, and Low. The Medium series is shown since it is the most frequently used.

Similarly, the World Bank's projections are shown in Table 1 for comparison. The most recent edition to publish age distributions is the 1989-1990 series. These projections are generally close to the UN's, but in a few cases the Bank's underlying assumptions regarding future trends in fertility differ significantly from the UN, yielding different population sizes.

A third set, from the International Data Base of the Center for International Research (CIR) of the U.S. Bureau of the Census are shown. These data are from the 1992 files of this continuously updated database. CIR population estimates often tend to run higher than the other sources since the CIR tends to make greater adjustments for undercounts.

It is important to keep in mind that published estimates, when they appear in print, may be outdated. Large studies, such as the UN's Assessment are quite time consuming, from the evaluation of new data to the actual printing of the volume. Thus, work on the 1990 Assessment began in 1989 and was completed in early 1990. It is obvious that no data that became available after that point could have been included.

In this inventory, it is evident that projections of school-age populations are in need of revision, particularly in the light of new censuses.

The format of the country reports is as follows. The Executive Summary gives our

current recommendation on which estimate to use for the 1990 school-age population.

Secondly, the "Extreme Range of Past and Current Estimates" shows what had been projected for 1990 about ten years ago compared to a likely upper bound today. This is meant only as an indication of the approximate size of the range. The differences between the two figures results from not one, but a variety of factors which differ from country to country: census counts, fertility trends, and different estimating techniques and assumptions.

Thirdly, a likely range for 2000 is shown. Although useful, such a range can only be taken as a preliminary evaluation. In nearly all cases, new projections need to be run to analyze the effects of a variety of factors on the 2000 population size.

Finally, a more extensive discussion of the data is provided for each country, with reference to Tables 1 and 2 (on age - sex distribution and fertility, respectively) and Figures 1 and 2 (charts showing school-age population) and Figure 3 (a population pyramid).

Estimates and Projection Ranges for School-Age Populations  
(Selected LDCs)

	Estimates Range for 1990 (1000s)			Projection Range for 2000 (1000s)			
	Low	High	Percent Difference	Low	High	Percent Difference	
Bangladesh	29,000	31,710	9.3	34,151	37,902	11.0	
Brazil	34,014	39,317	15.6	36,481	37,558	3.0	
Egypt	12,845	14,169	10.3	14,773	16,017	8.4	
Ethiopia	11,026	14,118	28.0	18,411	19,111	3.8	
India	190,201	206,478	8.6	202,124	232,216	14.9	
Indonesia	38,250	45,263	18.3	41,734	45,168	8.2	
Mexico	20,951	23,905	14.1	19,591	23,143	18.1	
Nigeria	27,550	33,347	21.0	---	34,945	---	n.a.
Philippines	14,797	16,109	8.9	16,600	18,364	10.6	
Thailand	12,062	13,228	9.7	9,710	11,080	14.1	
Turkey	11,541	13,639	18.2	12,386	14,843	19.8	
Uganda	4,975	5,404	8.6	---	6,961	---	n.a.
Average(weighted):			12.1			12.2	
Average(unweighted):			14.2			11.2	

## **BANGLADESH**

### **EXECUTIVE SUMMARY**

Recommendation:

**For 1990, the use of the UN 1990 projection is recommended until age data from the 1991 Census are made available.**

Extreme Range of Current Estimate for 1990 School-Age Population, Ages 5-14:

**29,000,000 (based on off. data) -- 31,710,000 (UN 1990 "medium")**

**Percent Difference of Range: 9.3**

Extreme Range of 2000 Projection:

**34,151,000 (CIR 1992) -- 37,902,000 (UN 1990 "medium")**

**Percent Difference of Range: 11.0**

Probable Trend in the School-Age Population to 2000:

**Despite a recent drop in fertility, a decrease in the school-age population is unlikely by 2000. These age cohorts have begun the process of stabilizing in size, however. The 1991 Census data, when released will be invaluable.**

## 1. Age-Sex Distribution.

During the 1980s, Bangladesh experienced a landmark drop in fertility that had long been anticipated, given the government's population policy and family planning program. The birth rate had remained stubbornly high until surveys conducted in 1989 pointed to a surprising reduction in the TFR. The precise level of the TFR, however, remains in considerable doubt, given the quality of survey responses on the number and timing of births.

Age detail from Bangladesh's 1991 Census will not be available until 1993. The census itself was quite low, a count of 105 million, much less than the previously estimated range of 115-118 million by the UN and others. Even adding the estimated undercount of 3.1 percent, as reported by the UN Statistical Office only raises the total to about 108 million.

With the exception of the CIR, the projections shown in Table 1 were performed before knowledge of the 1989 fertility survey was gained. As can be seen in Table 2, the CIR's TFR for 1985-1990 is considerably lower than the UN or the World Bank. It can easily be seen in Figures 1 and 2 that projections from the UN, World Bank and the CIR have been surprisingly uniform throughout the 1980s. Each group had assumed some decline in the TFR, although the size of the drop may have been underestimated. It can also be noted that the CIR's school age populations are virtually equal to the other projections despite using a lower TFR. This results from a higher level of undercount by CIR, a compensating effect.

The population pyramid in Figure 3 only adds more confusion to the issue. This

age distribution, reported to the UN Statistical Office, obviously suggests a greatly reduced 0-4 cohort. The data are estimates, not from a census. The small size of the youngest group seems implausible at first, but is not completely outside the range of possibility given the recent trend in the TFR. Still, the youngest age cohorts are typically both undercounted in LDC censuses and subsequent estimates. In Bangladesh, age data in censuses are very poor.

These factors present something of a quandary in selecting a range of estimates. Despite the detailed work done by the CIR on analyzing and estimating undercounts, it may be that their estimates of total population size are too high. For that reason, we recommend that the "high end" estimate for Bangladesh's 5-14 population be the UN 1990 projection, 31,710,000. This series used the highest possibility for the 1985-1990 TFR, 5.5 (see discussion below). Additionally, it is unlikely that the 1991 Census count will be adjusted much beyond 3 percent, if at all, and the UN series is closer to the Census. For the low end of the range, the official data reported to the UN Statistical Office and used to create the population pyramid are recommended. This will yield about 29 million 5-14 in 1990, after making a rough adjustment to the 1998 data used in the pyramid.

## 2. Fertility Trends.

The 1989 Bangladesh Fertility Survey (BFS) did not provide a precise estimate of the TFR. It did, however, confirm that fertility began to fall in the late 1980s. The survey cites a possible range for the TFR of from 4.6 to 5.4, an unusually large gap. The survey discusses various methods of estimating the TFR, such as comparisons and adjustments

to vital statistics trends (collected only in a sample in Bangladesh) and estimation from the level of contraception, marriage patterns, and postpartum amenorrhoea. A middle-range estimate of 4.9 for the TFR is proposed in the survey, but this cannot be taken as a final number by any means.

Given the uncertainty described above, the UN medium series has been selected as the high end estimate for 1990, as noted. Its TFR assumption coincides closely with the 5.4 TFR given as an upper limit in the BFS.

The fertility level in Bangladesh will remain uncertain at least until the census age information is made available. Even then, underreporting of very young children will doubtlessly be a problem.

### 3. Range of Projections in 2000.

For 2000, the UN's medium projection projects a TFR of 4.5. That TFR is plausible if the TFR at present is actually at the high end of the BFS estimate. At present, that UN projection seems somewhat pessimistic, but it does serve as a reasonable upper limit on the 5-14 population in 2000. For a lower limit, we have selected the CIR's projection which assumes a TFR of 4.0 in 2000. Given the protracted history of fertility decline in Bangladesh, this appears as a good lower value. It is clear that new projections must be run for Bangladesh when the 1991 Census data can be obtained.

**BANGLADESH**

**Table 1.**

**Population by Age and Sex, Various Sources (in thousands)**

<u>Age Groups</u>	<u>United Nations 1980 Assessment</u>		<u>United Nations 1990 Assessment</u>		<u>World Bank '79</u>		<u>World Bank '89-'90</u>		<u>U.S. Census Bureau (1992 Series)</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
<b>1985</b>										
ALL AGES	52,281	49,084	52,137	49,010	52,296	49,034	51,639	48,954		
5 - 9	7,751	7,268	7,913	7,370	7,786	7,221	7,837	7,362		
10 - 14	6,548	6,146	6,694	6,425	6,470	6,118	6,630	6,418		
<b>1990</b>										
ALL AGES	59,917	56,247	59,560	56,033	59,267	55,752	58,763	55,639	59,111	54,913
5 - 9	8,789	8,237	8,613	8,046	8,565	8,041	8,703	8,149	8,579	8,132
10 - 14	7,633	7,126	7,801	7,250	7,665	7,087	7,731	7,229	7,724	7,192
<b>1995</b>										
ALL AGES	68,079	63,884	68,095	64,124	66,559	62,970	66,396	62,847		
5 - 9	9,757	9,143	9,230	8,669	9,088	8,648	9,307	8,606		
10 - 14	8,673	8,098	8,506	7,933	8,438	7,909	8,597	8,021		
<b>2000</b>										
ALL AGES	76,563	71,797	77,523	73,066	74,053	70,597	74,565	70,603	74,120	69,428
5 - 9	10,420	9,771	10,415	9,794	9,653	9,312	9,996	9,344	9,167	8,798
10 - 14	9,646	9,011	9,129	8,564	8,958	8,522	9,205	8,491	8,271	7,915

**MOST RECENT CENSUSES**

<u>Age Groups</u>	<u>Census of 1974</u>		<u>Census of 1981</u>		<u>Census of 1991</u>
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
ALL AGES	37,072	34,407	46,600	43,857	104,766
5 - 9	6,599	6,469	6,728	6,804	
10 - 14	5,005	4,198	6,897	6,320	

## BANGLADESH

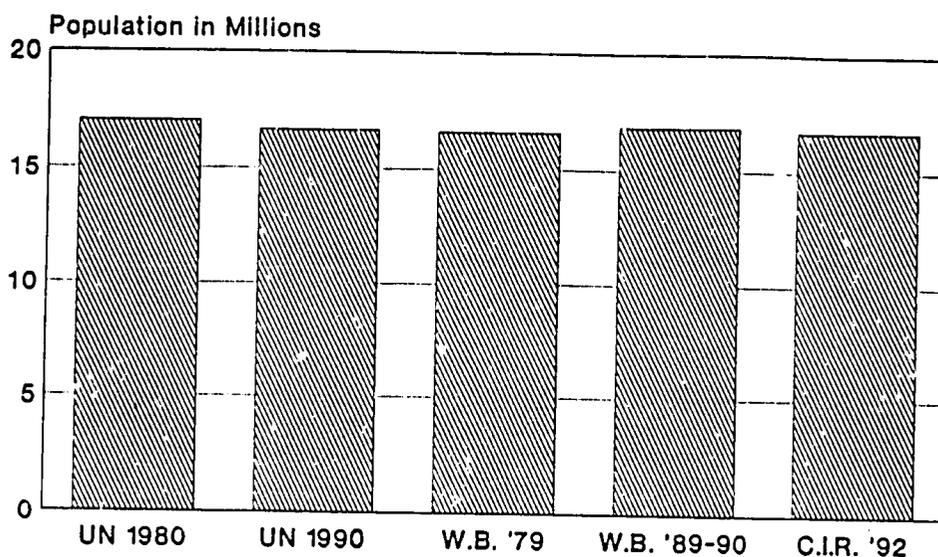
**Table 2. Total Fertility Rate: Estimates and Projections**

<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	6.8	6.7	6.3	5.7	5.1
United Nations (1990)	7.0	6.7	6.2	5.5	5.1
World Bank (1979)		6.5	5.9	5.3	4.8
World Bank (1989-90)		6.3	6.0	5.2	4.6
Center for International Research (1992)			6.5	5.1	4.6

### Total Fertility Rates: Survey Results

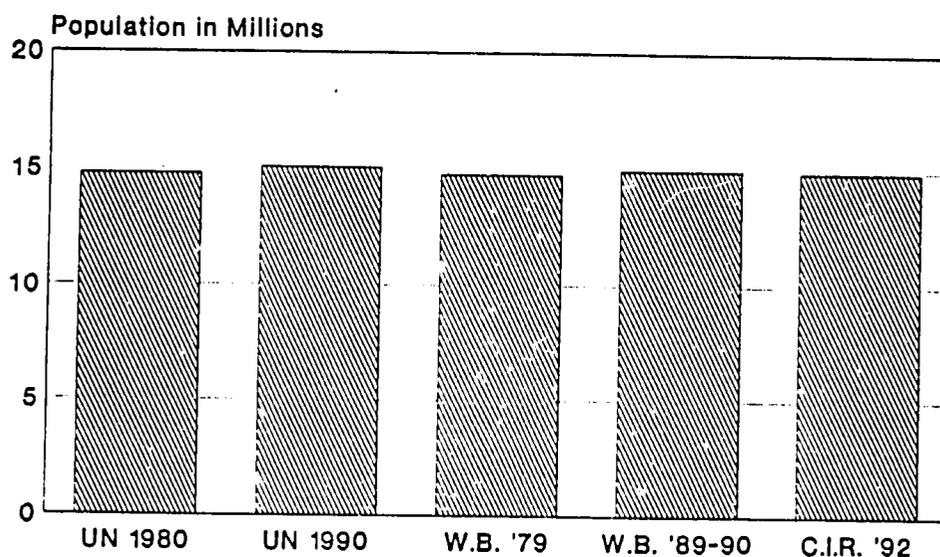
<u>Source</u>	<u>Reference Year of Survey Estimate:</u>		
	<u>1972/76</u>	<u>1983</u>	<u>1989</u>
World Fertility Survey (1976)	6.1		
Contraceptive Prevalance Survey (1983)		6.0	
Bangladesh Fertility Survey (1989)			4.9

Figure 1: Population Ages 5-9  
BANGLADESH, 1990  
Various Sources



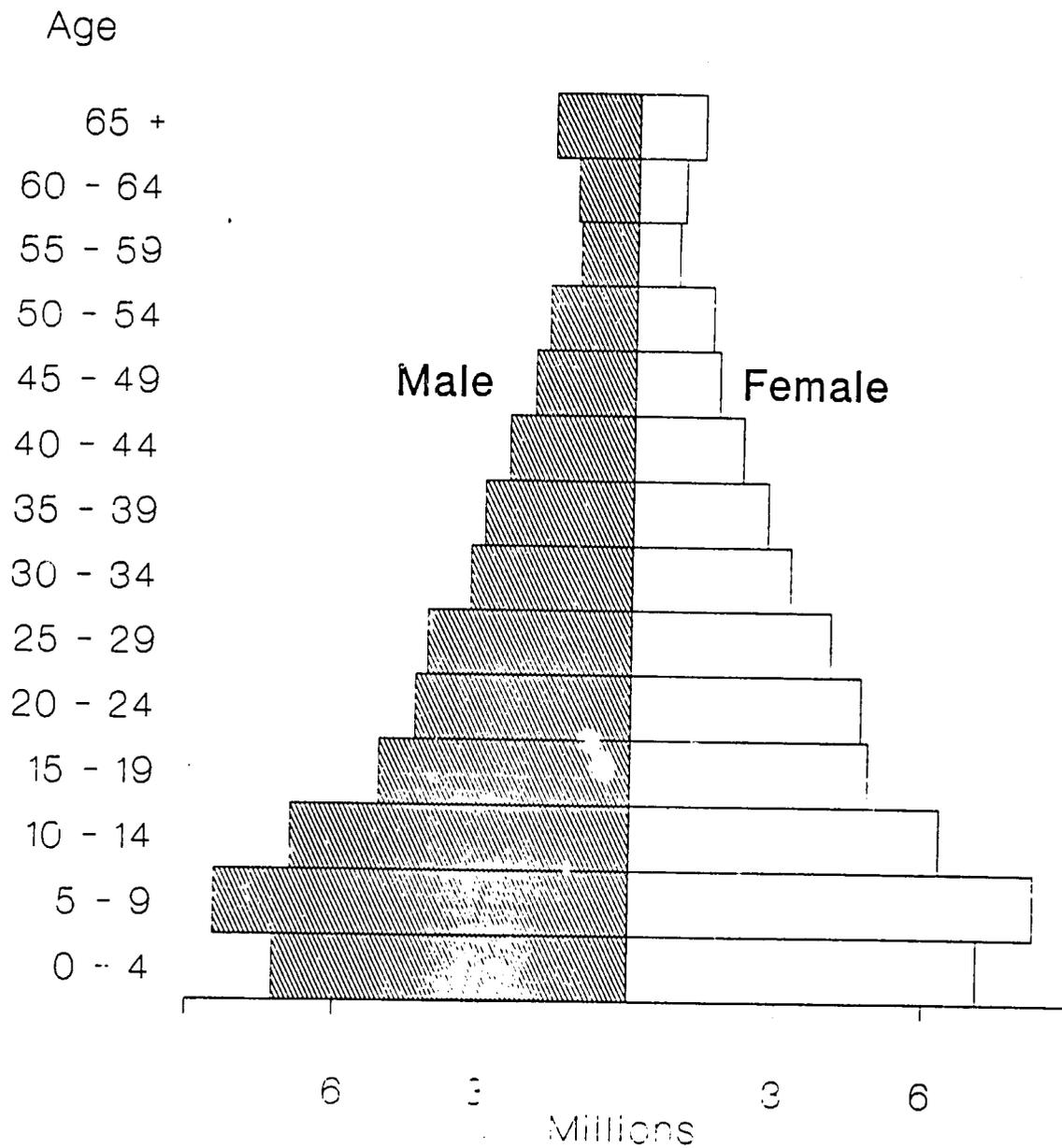
W.B.: World Bank  
C.I.R.: U.S. Census Bureau

Figure 2: Population Ages 10-14  
BANGLADESH, 1990  
Various Sources



W.B.: World Bank  
C.I.R.: U.S. Census Bureau

# Figure 3: Bangladesh Population by Age and Sex 1988



Source: Official Government Estimate  
from UN Demographic Yearbook 1989

## **BRAZIL**

### **EXECUTIVE SUMMARY**

Recommendation:

**The World Bank 1989-90 series should be used as a benchmark figure.**

Extreme Range of Current and Past Estimates for 1990 School-Age Population, 5-14:

**34,014,000 (UN 1990 "medium") - 39,317,000 (WB 1979)**

**15.6 percent**

Extreme Range of 2000 Projection:

**36,481,000 (Census Bureau 1992) - 37,558,000 (UN 1990 "medium")**

**3.0 percent**

Probable Trend in the School-Age Population to 2000:

**School entry ages (age 5) will likely decrease by the end of the 1990s.**

## 1. Age-Sex Distribution.

Brazil is another case where fertility has come down much more rapidly than had been expected in the early 1980s. Earlier projections give significantly higher school-age populations than do later ones. The World Bank 1979 series had given the highest school-age population for 1990, coming in around 10 to 15 percent higher than later projections by the World Bank, United Nations or Census Bureau (see Figure 1). All the later projections of 1990 school-age population vary by no more than five percent (or 1.5 million children), indicating a high level of agreement over Brazil's current age-sex distribution. Despite the decline in the birth rate, however, it can be clearly seen in Figure 3 that the base of Brazil's population pyramid continues to expand. This is simply due to the fact that fertility has only recently arrived at today's modest level of about 3.1 children per woman.

The 1991 Census of Brazil reported a population about five million less than expected, a count of 148 million, including a 2 percent adjustment for undercount. No age detail are yet available. As a result, it is recommended that the World Bank's projection be used in the interim for 1990 estimates since it is the lowest of the standard series.

## 2. Fertility Trends

Brazil's fertility has dropped to surprisingly low levels despite the lack of an official government policy. Much of Brazil's family planning effort is concentrated in the private sector. By the mid 1980s, the TFR had dropped to about 3.4. Projections assume that

the decline continues to about 3.0-3.2 in the early 1990s, but this is simply an extrapolation of a past trend.

When age data are available from the 1991 Census, there will be an opportunity to evaluate the likelihood of a continued fertility decline, keeping in mind the limitations of the data and the possibility of underreporting of infants. It should also be noted that fertility in Brazil was only modestly high in the early 1970s, a TFR of about five children per woman, rather than the six or seven of many other LDCs. Thus, changes in Brazil's school age population have been and will be more gradual since the fertility decline was from a lower level.

### 3. Projections for 2000

Despite the prospects for further fertility decline, Brazil will not experience declines in school enrollments before the end of this century. The UN projections show about 38 children ages 5-14 in 2000, about 4 million more than at present. The projections assume a TFR of 2.8 in 2000. This projection may prove to be too conservative, although it is not much higher than the lowest projection, 36.5 million from the CIR. In short, school age populations in Brazil may decline, but it will take a sharper drop in fertility than is currently projected.

The full results of the 1990 Census are not available as yet. Preliminary analyses suggest that there may have been an undercount.

**BRAZIL**

**Table 1.**

**Population by Age and Sex, Various Sources (in thousands)**

<u>Age Groups</u>	<u>United Nations 1980 Assessment</u>		<u>United Nations 1990 Assessment</u>		<u>World Bank '79</u>		<u>World Bank '89-'90</u>		<u>U.S. Census Bureau (1992 Series)</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
1985										
ALL AGES	69,045	68,188	67,677	67,887	71,680	71,584	67,670	67,894		
5 - 9	8,599	8,432	8,214	8,154	9,519	9,181	8,213	8,155		
10 - 14	7,952	7,801	7,474	7,452	8,649	8,492	7,473	7,453		
1990										
ALL AGES	76,985	76,186	74,992	75,376	81,265	80,996	74,891	75,305	76,025	76,480
5 - 9	9,286	9,115	8,910	8,824	10,545	10,150	8,993	8,856	9,414	9,109
10 - 14	8,549	8,397	8,161	8,119	9,475	9,147	8,173	8,124	8,718	8,431
1995										
ALL AGES	85,301	84,598	82,243	82,840	90,819	90,386	81,956	82,552		
5 - 9	10,006	9,829	9,382	9,266	11,391	10,953	9,518	9,206		
10 - 14	9,239	9,084	8,858	8,791	10,506	10,121	8,957	8,830		
2000										
ALL AGES	94,030	93,464	89,323	90,164	100,174	99,591	88,413	89,214	89,589	90,677
5 - 9	10,644	10,462	9,573	9,430	11,545	11,090	9,462	9,137	9,304	9,006
10 - 14	9,962	9,802	9,332	9,234	11,356	10,929	9,486	9,186	9,229	8,942

**MOST RECENT CENSUSES**

<u>Age Groups</u>	<u>Census of 1970</u>		<u>Census of 1980</u>		<u>Census of 1991</u>
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
ALL AGES	46,331	46,808	59,146	59,925	146,155
5 - 9	6,800	6,660	7,230	7,042	
10 - 14	5,934	5,925	6,807	6,743	

**BRAZIL**

**Table 2. Total Fertility Rate: Estimates and Projections**

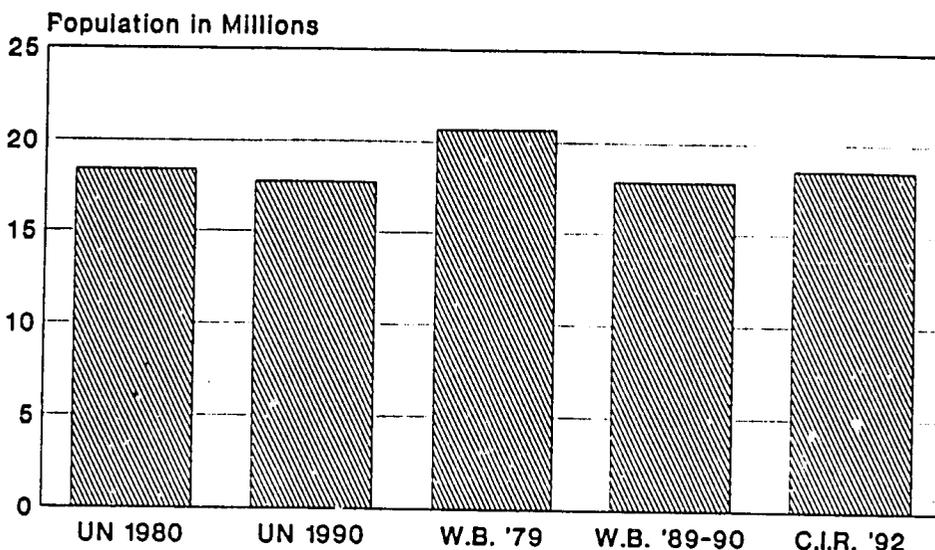
<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	5.1	4.5	4.0	3.7	3.4
United Nations (1990)	4.7	4.2	3.8	3.5	3.2
World Bank (1979)		4.9	4.6	4.2	4.0
World Bank (1989-90)		4.2	3.8	3.5	3.0
Center for International Research (1992)				3.4	3.0

**Total Fertility Rates: Survey Results**

<u>Reference Year of Survey Estimate:</u>	
<u>Source</u>	<u>1984/86</u>
Demographic and Health Survey (1986)	3.4

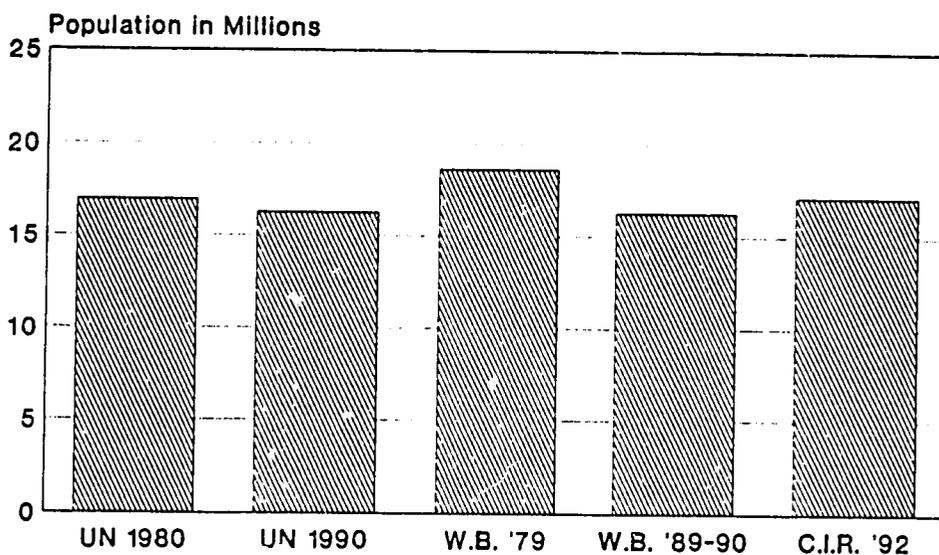
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Figure 1: Population Ages 5-9  
 BRAZIL, 1990  
 Various Sources



W.B.: World Bank  
 C.I.R.: U.S. Census Bureau

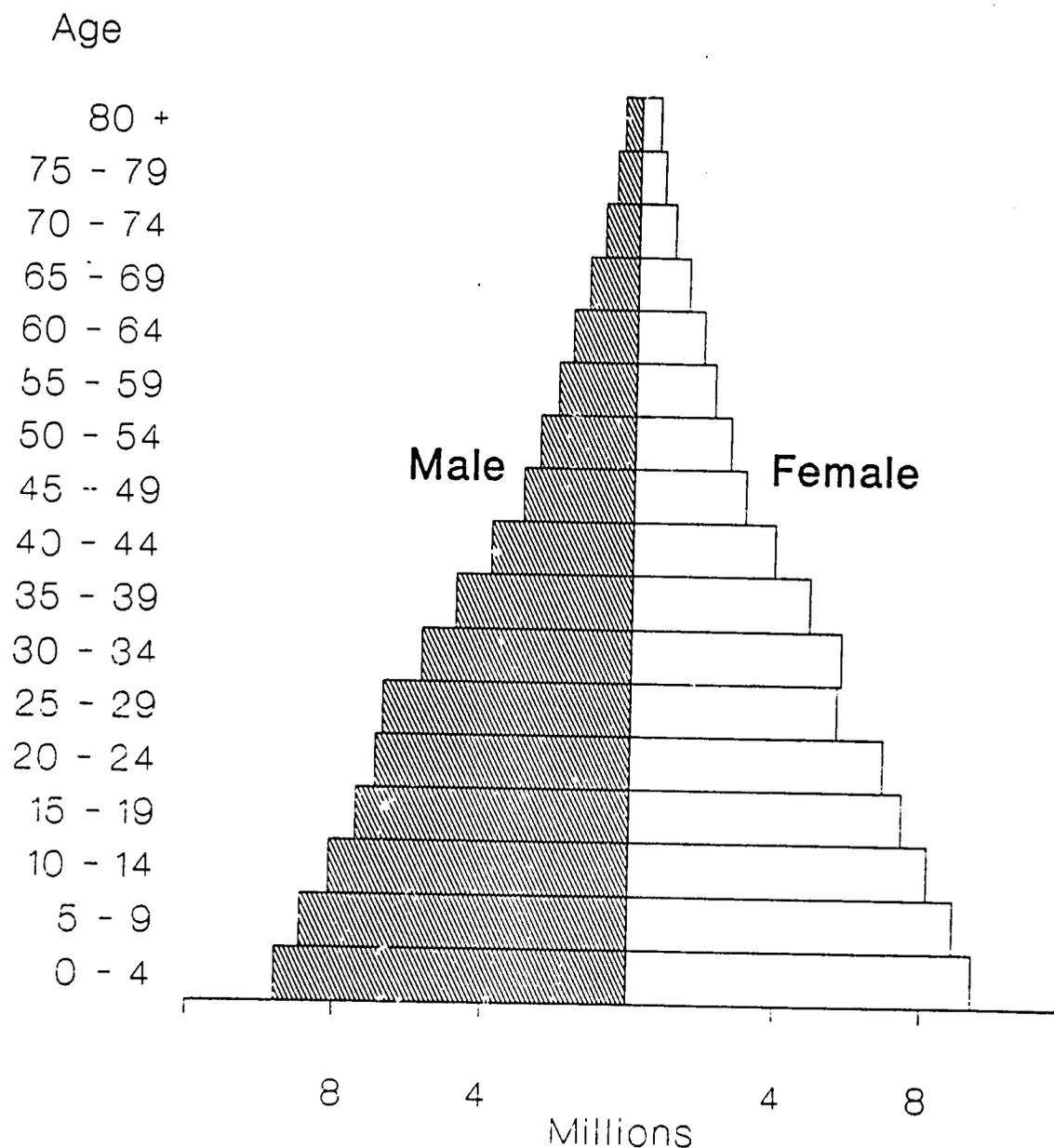
Figure 2: Population Ages 10-14  
 BRAZIL, 1990  
 Various Sources



W.B.: World Bank  
 C.I.R.: U.S. Census Bureau

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# Figure 3: Brazil Population by Age and Sex 1990



Source: Official Government Estimate  
from UN Demographic Yearbook 1990

## **EGYPT**

### **EXECUTIVE SUMMARY**

#### **Recommendation:**

**For Egypt, a range of estimates from 13 (UN) to 14 (CIR) million must be used for the school-age population, given the uncertainty of fertility estimates from the 1987 DHS. This is particularly true since the last census was in 1986.**

**Extreme Range of Past and Current Estimate for 1990 School-Age Population, Ages 5-14:**

**12,845,000 (UN 1980 "medium") -- 14,169,000 (CIR 1992)**

**Percent Difference of Range: 10.3**

**Extreme Range of 2000 Projection:**

**14,773,000 (UN 1990 "medium") -- 16,017,000 (CIR 1992)**

**Percent Difference of Range: 8.4**

**Probable Trend in the School-Age Population to 2000:**

**The school-age population of Egypt will continue to grow during the 1990s, although at a slower rate than in the past. It is unlikely that it will be much less than 15 million by 2000.**

## 1. Age-Sex Distribution.

Egypt's age-sex distribution is typical of that of a LDC with comparatively high fertility. Each age cohort is larger than that which preceded it (see Figure 3). Despite a decreasing birth rate and an active government policy to reduce the growth rate, Egypt's population pyramid remains broad-based, signalling a continuing rise in the size of the school-age population until 2000.

The last census was held in 1986. For the most part, population estimates are fairly close among the major organizations, although the CIR and the World Bank show 1990 estimates about one million higher than the UN. In general, population estimates for Egypt rose during the 1980s, primarily because birth rate declines were not as rapid as projected. School-age population estimates for 1990 were higher in both the World Bank and UN estimates in the late 1980s than earlier (see Table 1).

For 1990, estimates of the 5-14 year-old population ranged from a low of 11,421 in the World Bank's 1979 series to 14,169 in the latest (1992) series from CIR. All estimates were raised, however, after Egypt's 1986 Census. Today, the range of estimates has narrowed considerably, from 13.0 million (UN 1990) to 14.2 (CIR).

Selecting a range of error for both past and current estimates of Egypt's 5-14 population is made more complex by the fact that the country's birth rate remained higher than expected. Estimates prepared in the early 1980s were clearly too low. As such, Egypt is a good example of how projections should be subject to constant restudy.

For 1990, the range of estimates for the 5-14 age group can be stated with reasonable certainty to be no more than from 13 to 14 million.

## 2. Fertility Trends.

In Egypt, fertility declines have proven to be more protracted than was thought in the 1970s. Although the government's population policies met with early success, progress slowed during the 1980s. Much of this slowdown is thought to be a result of difficulties in providing family planning services to rural areas. Whatever the cause, projections of Egypt's population were revised upwards during the 1980s.

A TFR of about 4.5 for the 1985-1990 period is now used by most projections. This represents an increase from 4.2 from the UN's 1980 projections and from 3.8 in the World Bank's 1979 series. Currently, the CIR uses an even higher estimate for that period (see Table 2). Given the slow decline in Egypt's TFR, from 5.3 in 1976-1980 to 4.5 in 1987-1989 (see Table 2), accelerated decrease in the 1990s seems unlikely.

## 3. Range of Projections in 2000.

For 2000, the UN projects a TFR of 3.2. This assumption would seem to be an optimistic one based upon past experience, but a reachable goal if family planning services continue to spread. Both the World Bank and CIR projections are less optimistic. The CIR, for example, shows a TFR of 3.8 for 2000. This is not too different from the UN's high assumption of 3.6 for that date. The UN's low assumption for 2000 is, of course, even more optimistic. It posits a TFR of only 2.7 for 2000. A decrease of this magnitude (from 4.5 currently) in only 10 years would be surprising given past experience. For that

reason, the use of the UN's medium projection is recommended as a low projection for 2000 and the CIR's for the upper limit.

EGYPT

Table 1.

Population by Age and Sex, Various Sources (in thousands)

Age Groups	United Nations 1980 Assessment		United Nations 1990 Assessment		World Bank '79		World Bank '89-'90		U.S. Census Bureau (1992 Series)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1985										
ALL AGES	23,876	23,363	23,629	22,882	22,710	22,272	24,172	23,406		
5 - 9	3,201	3,073	3,101	2,914	2,855	2,739	3,301	3,104		
10 - 14	2,678	2,546	2,606	2,432	2,627	2,512	2,623	2,458		
1990										
ALL AGES	26,655	26,055	26,644	25,782	24,967	24,493	27,286	26,399	27,490	26,320
5 - 9	3,381	3,240	3,614	3,424	2,999	2,876	3,904	3,697	3,759	3,531
10 - 14	3,175	3,049	3,080	2,896	2,829	2,717	3,275	3,081	3,557	3,322
1995										
ALL AGES	29,543	28,865	29,690	28,698	27,178	26,680	30,505	29,475		
5 - 9	3,531	3,380	3,799	3,572	3,026	2,901	3,948	3,798		
10 - 14	3,359	3,220	3,624	3,409	2,976	2,858	3,880	3,677		
2000										
ALL AGES	32,585	31,836	32,660	31,550	29,305	28,785	33,812	32,626	34,194	33,080
5 - 9	3,702	3,543	3,825	3,599	3,048	2,918	4,086	3,921	4,215	4,017
10 - 14	3,511	3,364	3,787	3,562	3,006	2,885	3,928	3,783	3,988	3,797

MOST RECENT CENSUSES

Age Groups	Census of 1976		Census of 1986	
	Male	Female	Male	Female
ALL AGES	18,647	17,979	24,513	23,483
5 - 9	2,422	2,259	3,217	3,046
10 - 14	2,582	2,323	2,917	2,672

## EGYPT

**Table 2. Total Fertility Rate: Estimates and Projections**

<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	5.1	5.2	4.7	4.2	3.9
United Nations (1990)	5.5	5.3	5.1	4.5	4.0
World Bank (1979)		4.8	4.3	3.8	3.3
World Bank (1989-90)		5.3	5.0	4.6	4.2
Center for International Research (1992)				4.8	4.4

### Total Fertility Rates: Survey Results

<u>Source</u>	<u>Reference Year of Survey Estimate:</u>		
	<u>1976/80</u>	<u>1983/84</u>	<u>1987/89</u>
World Fertility Survey (1980)	5.3		
Contraceptive Prevalance Survey (1984)		4.9	
Demographic and Health Survey (1989)			4.5

25

Figure 1: Population Ages 5-9  
EGYPT, 1990  
Various Sources

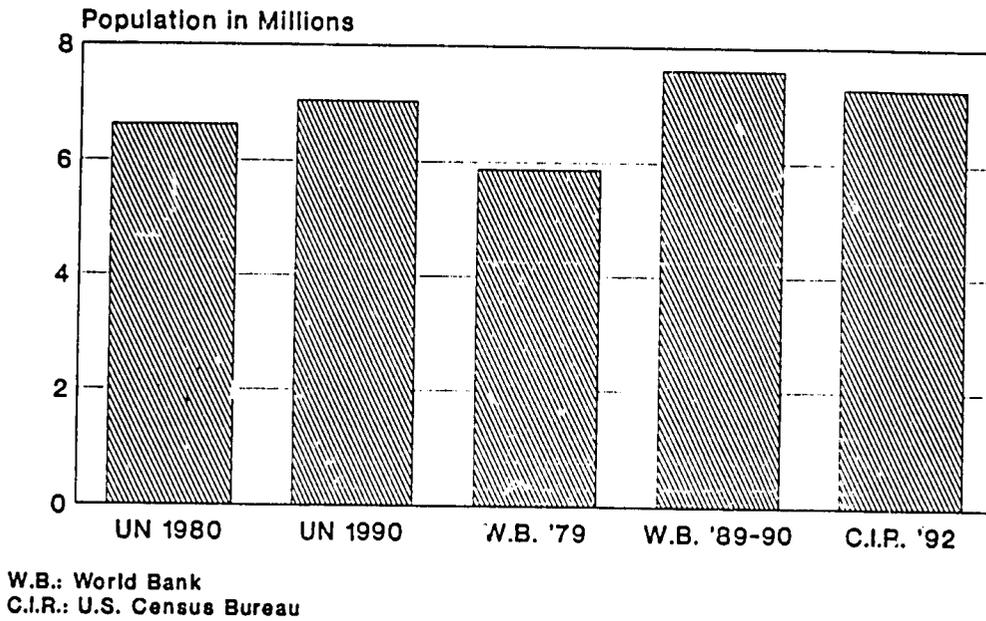
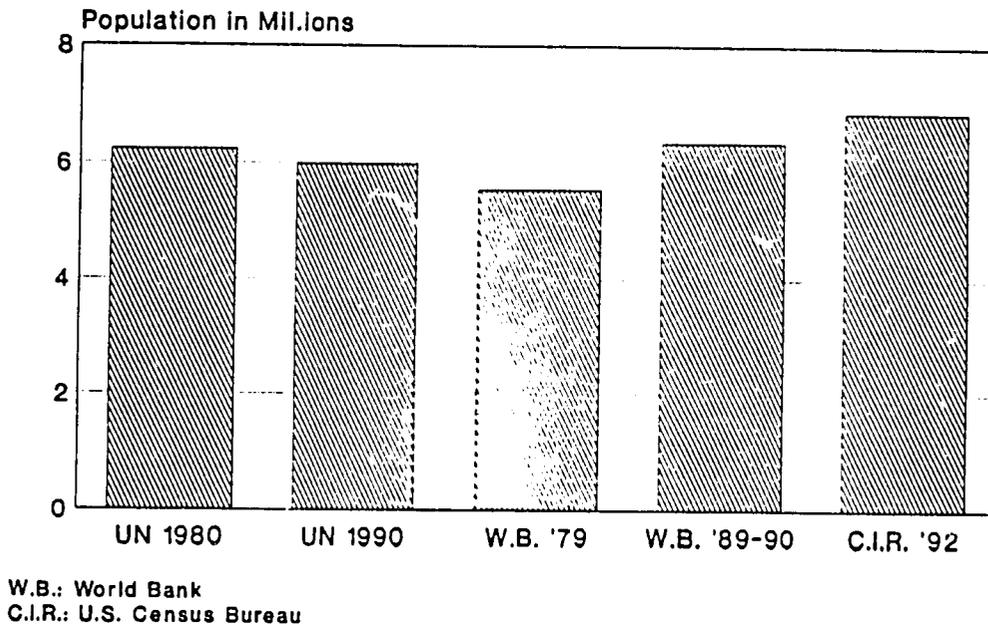
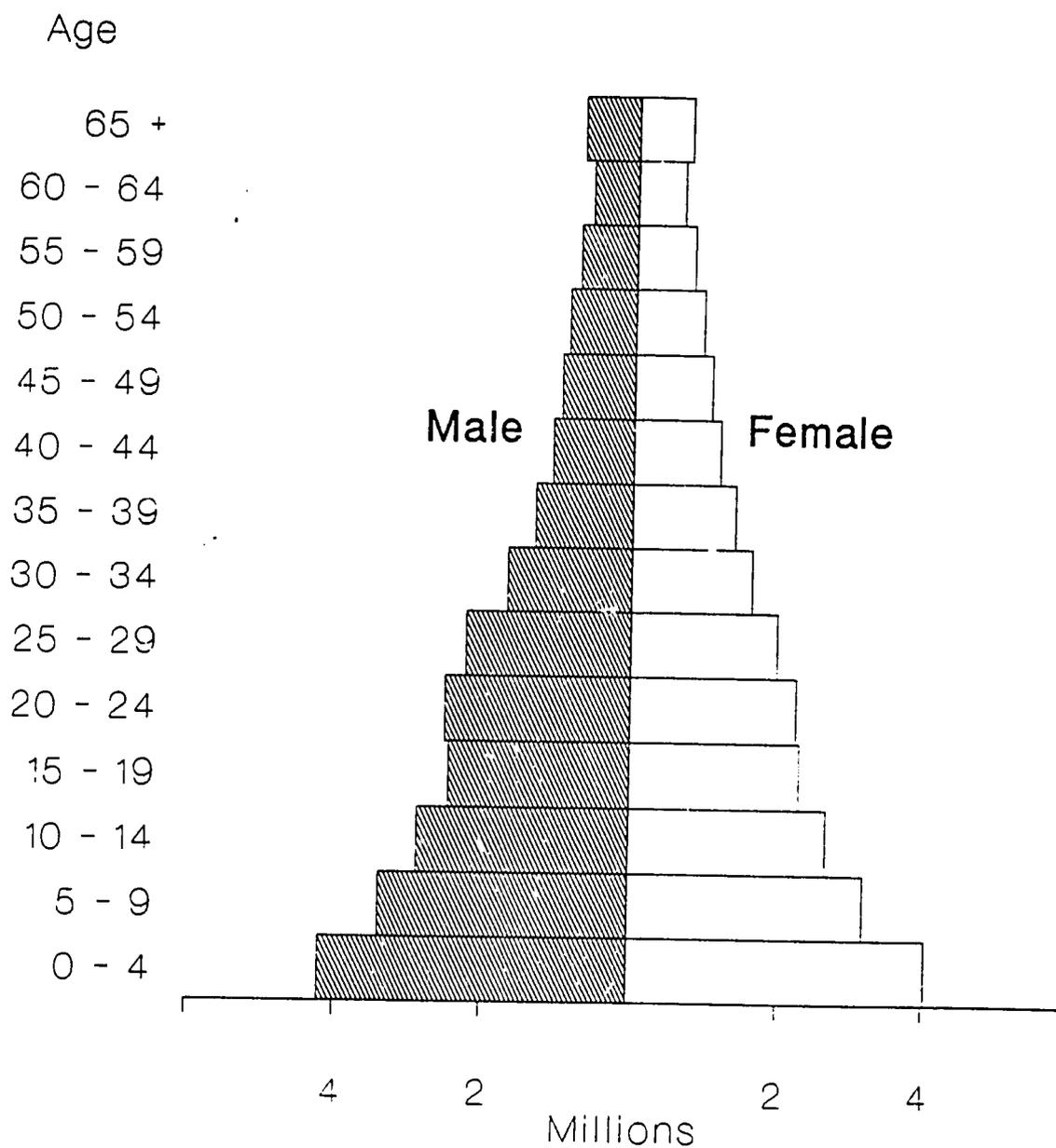


Figure 2: Population Ages 10-14  
EGYPT, 1990  
Various Sources



# Figure 3: Egypt Population by Age and Sex 1988



Source: Official Government Estimate  
from UN Demographic Yearbook 1990

## **ETHIOPIA**

### **EXECUTIVE SUMMARY**

#### **Recommendation:**

**The UN 1990 projection is recommended as a "middle ground" series since it lies between those of the CIR and the World Bank.**

#### **Extreme Range of Past and Current Estimate for 1990 School-Age Population, Ages 5-14:**

**11,026,000 (UN 1980 "medium") -- 14,118,000 (CIR 1992)**

**Percent Difference of Range: 28.0**

#### **Extreme Range of 2000 Projection:**

**18,411,000 (UN 1990 "medium") -- 19,111,000 (CIR 1992)**

**Percent Difference of Range: 3.8**

#### **Probable Trend in the School-Age Population to 2000:**

**Rapid growth in school-age populations is expected; precise size can only be considered a rough estimate due to doubts about 1984 Census accuracy.**

## 1. Age-Sex Distribution.

The overall quality of demographic data in Ethiopia is very poor, among the poorest in the world. Until 1984, Ethiopia was one of the few remaining countries without a national census in its history. The results of the 1984 census were surprisingly high. The count of 42.2 million was about 8 million higher than expected. Despite suspicions that the count was inflated, the census is today used as a benchmark figure for estimates and projections.

The population pyramid of Ethiopia (see Figure 3) is characteristic of a country with very high fertility and essentially no contraceptive use. The extreme broad base of the pyramid and the unusually narrow upper portion are striking. Given the very low quality of data, particularly on age, it is difficult to assess the accuracy with which the pyramid reflects reality. Certainly, Ethiopia's age structure has been affected by refugee movements, but those effects are difficult to assess.

Past projections for Ethiopia were revised upwards radically after the 1984 Census as Figures 1 and 2 clearly show. Currently, the UN and World Bank series are in general agreement and the CIR, as is typical, shows a somewhat higher projection.

In the early 1980s, the country suffered a severe famine which did have a temporary effect on population growth. Despite the catastrophic nature of the famine, population growth was not slowed to the degree one might expect. Countries which have extremely high fertility and very young age distributions will not experience major downturns in population growth rates and it is rare that the population size will actually decline.

Although not major, the effects of the famine are evident in UN projections. In 1980-1985, the UN estimates that the crude birth rate dropped from 48.3 births per 1,000 population in the previous five year period to 44.5. Likewise the crude death rate rose from 21.5 to 23.5 deaths per 1,000. This resulted in about 10 percent fewer births in 1980-1985 than would normally have occurred. Likewise, deaths rose about 10 percent. It should be emphasized that these are only the roughest of estimates. The effect on the overall size of school-age populations was, therefore, quite small.

Selecting a range of estimates for 1990, based on past and current projections is fraught with difficulties, particularly given the uncertain nature of the 1984 Census. If one had relied on the UN's 1980 projections, the school-age population would have been 11,026,000 in 1990. Today, the figure for that date is about 20 percent higher, 13,184,000. An even higher figure is shown by CIR. Any of these figures are only slightly lower than they would have been had the famine not occurred. Overall, we can speculate that the school age population was reduced by about 5 percent since births were down by about 10 percent for one of the two birth cohorts (that of 1980-1985).

## 2. Fertility Trends.

Little data on fertility trends exist for Ethiopia, given the total lack of vital statistics and no survey data. The rather wide range of TFR estimates in Table 2 clearly shows the doubt that exists on Ethiopia's birth rate. Present estimates can only be based upon demographic techniques which use variables such as age structure.

### 3. Range of Projections in 2000.

Given the many unknowns in Ethiopia's demography, the only plausible approach to selecting a range for 2000 would seem to be the use of the extremes of the projections shown in Table 1. The extremes are represented by the World Bank's 1989-1990 projection series and those of the CIR. We select this range since any of the projections shown are well within the range of possibility. The differences result from multiple causes, including different levels of fertility assumptions and different estimates of total population size.

## ETHIOPIA

Table 1.

## Population by Age and Sex, Various Sources (in thousands)

Age Groups	United Nations 1980 Assessment		United Nations 1990 Assessment		World Bank '79		World Bank '89-'90		U.S. Census Bureau (1992 Series)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1985										
ALL AGES	17,728	17,904	21,477	21,606	18,540	18,445	21,263	21,008		
5 - 9	2,559	2,582	3,155	3,085	2,637	2,661	3,209	3,097		
10 - 14	2,159	2,183	2,652	2,591	2,661	2,274	2,713	2,618		
1990										
ALL AGES	20,444	20,816	24,553	24,687	20,781	20,831	24,463	24,321	25,442	25,534
5 - 9	3,005	3,023	3,614	3,562	3,070	3,089	3,218	3,216	3,728	3,711
10 - 14	2,487	2,511	3,037	2,971	2,535	2,559	3,144	3,032	3,372	3,307
1995										
ALL AGES	23,618	24,178	28,500	28,640	23,106	23,286	28,309	28,242		
5 - 9	3,485	3,496	4,259	4,266	3,237	3,250	4,056	4,010		
10 - 14	2,928	2,948	3,498	3,450	2,960	2,980	3,162	3,158		
2000										
ALL AGES	27,024	27,641	33,100	33,264	25,664	25,959	32,955	32,964	34,678	35,088
5 - 9	4,013	4,013	5,067	5,059	3,397	3,401	4,740	4,685	5,156	5,239
10 - 14	3,380	3,394	4,137	4,148	3,131	3,145	3,994	3,948	4,320	4,396

## MOST RECENT CENSUS

Age Groups	Census of 1984	
	Male	Female
ALL AGES	21,019	21,150
5 - 9	3,360	3,360
10 - 14	2,745	2,542

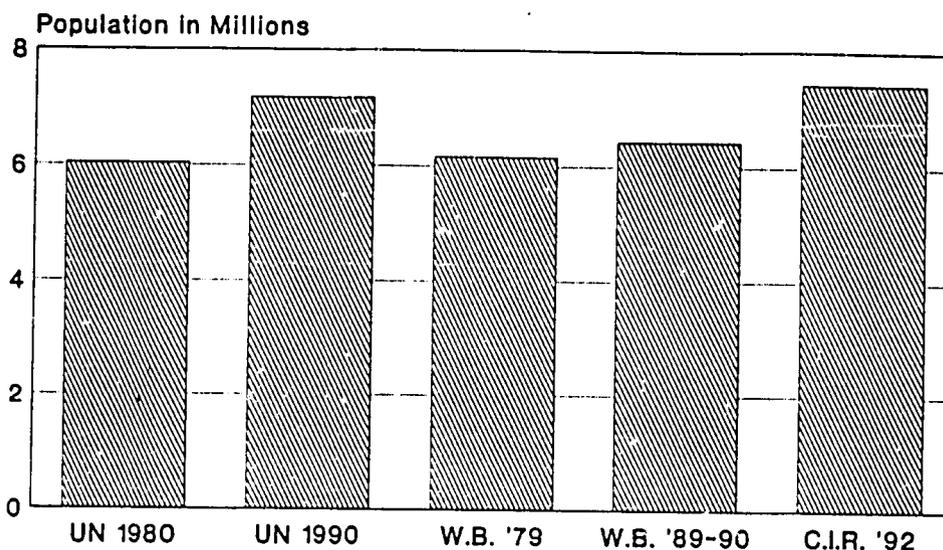
## ETHIOPIA

**Table 2. Total Fertility Rate: Estimates and Projections**

<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	6.7	6.7	6.7	6.5	6.2
United Nations (1990)	6.8	7.0	6.5	6.8	6.8
World Bank (1979)		6.7	6.7	6.0	5.4
World Bank (1989-90)		6.0	7.5	7.5	7.5
Center for International Research (1992)				6.8	6.9

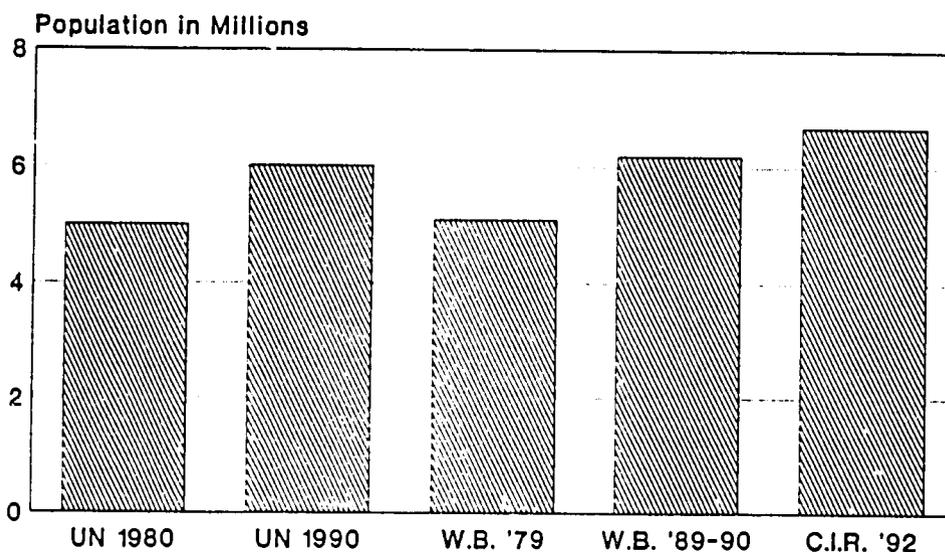
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Figure 1: Population Ages 5-9  
ETHIOPIA, 1990  
Various Sources



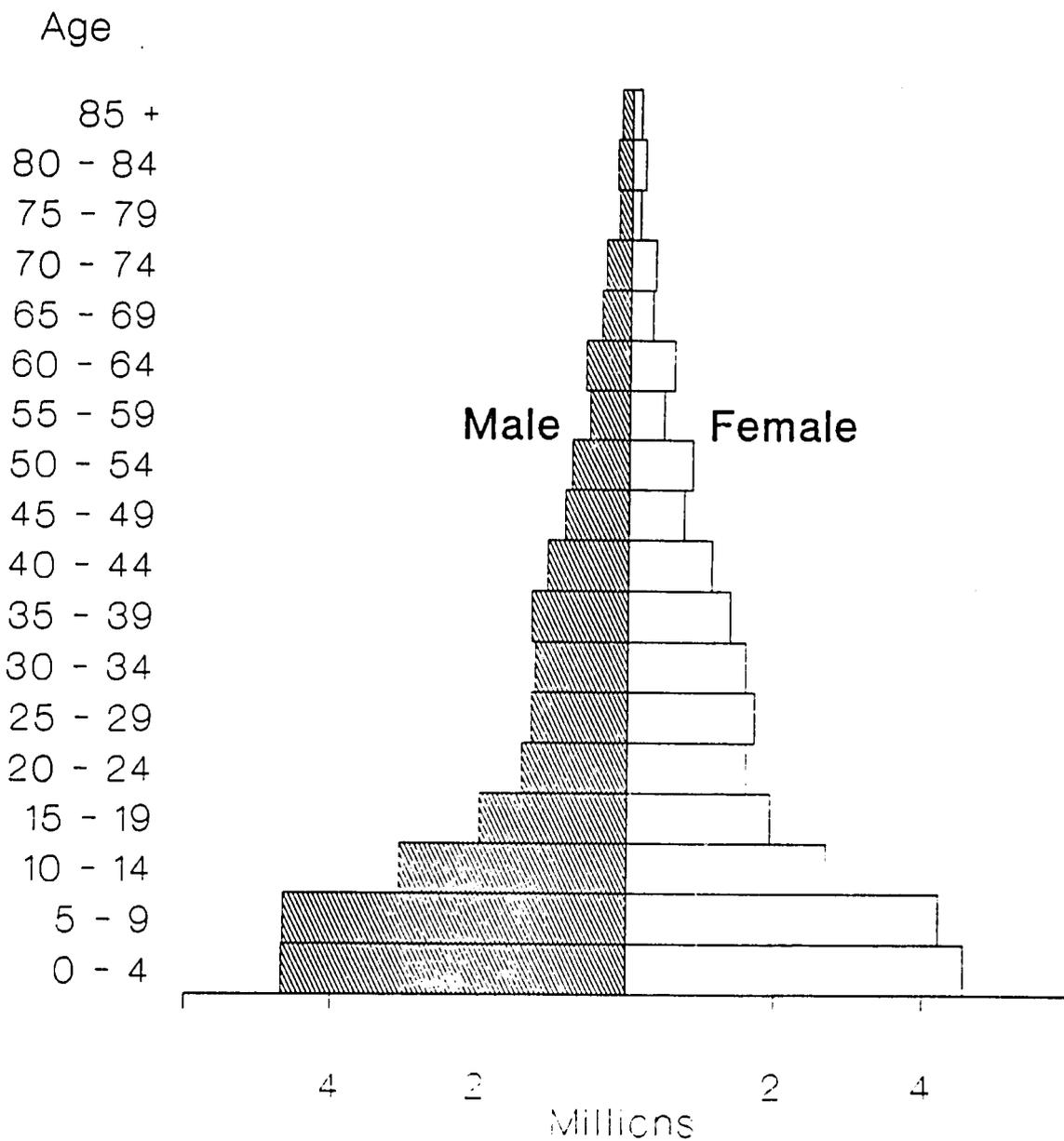
W.B.: World Bank  
C.I.R.: U.S. Census Bureau

Figure 2: Population Ages 10-14  
ETHIOPIA, 1990  
Various Sources



W.B.: World Bank  
C.I.R.: U.S. Census Bureau

# Figure 3: Ethiopia Population by Age and Sex 1989



Source: Official Government Estimate  
from UN Demographic Yearbook 1990

## INDIA

### EXECUTIVE SUMMARY

Recommendation:

**Until the 1991 Census results are published, the Census Bureau's 1992 series should be used as a benchmark figure.**

Extreme Range of Past and Current Estimate for 1990 School-Age Population, Ages 5-14:

**190,201,000 (UN 1980 "medium") -- 206,478,000 (WB 1989-90)**

**Percent Difference of Range: 8.5**

Extreme Range of 2000 Projection:

**202,124,000 (UN 1980 "medium") -- 232,216,000 (UN 1990 "medium")**

**Percent Difference of Range: 15.0**

Probable Trend in the School-Age Population to 2000:

**The school-age population is unlikely to decline until after 2020.**

## 1. Age-Sex Distribution.

India's extremely large overall population size makes accurate fertility estimates crucial for planning purposes. Small errors in estimated fertility decline can produce large differences in estimated school-age population.

Fertility declines did not take place as rapidly as expected over the 1980s, and as a consequence, subsequent population estimates were adjusted upwards. The United Nations 1980 assessment and the World Bank 1979 assessment provided both lower school-age and total population estimates for 1990 than did their 1990 assessments. The 1991 Census of India fell between these two estimates; the total population of 843.9 million ended up coming in 23 million higher than the 1980-round assessments, but between 4 and 10 million lower than the 1990-round assessments. When accounting for the estimated 1.5 percent underenumeration, however, India's 1991 population is raised to 856.6 million, essentially in line with UN and World Bank estimates.

Because small children are often missed in population counts, we can assume that the underenumeration rate was higher among children under five than for the rest of the population. The latest official Indian estimate for 1990 (the 1991 Census age and sex distribution are not yet available) place the school-age population at 190,860,000 -- far below the WB estimate of 206,478,000.

## 2. Fertility Trends.

The Indian government tracks fertility through the National Sample Registration

System. With the exception of the DHS survey currently under way, there have been no nation-wide fertility surveys in India.

Table 2 shows that earlier projections of fertility decline had to be revised. In the decade between the two assessments, the UN revised its estimate for the period 1990-95 upwards from 3.5 to 4.1 births per woman. The current range of estimated fertility rates is from 3.7 to 4.1. It should be emphasized that regional differences in fertility rates are significant; states such as Gujarat and Punjab -- many of which have the population size of entire countries -- have much lower fertility rates than do areas in the East and North. These lower rates will have notable impacts on the local and national school age population.

### 3. The Census.

As mentioned above, the 1991 Census of India is reported in a United Nations source (the Population and Vital Statistics Report) to have had a 1.5 percent undercount. This is reasonably accurate given the difficulty of counting people in the rural areas where most of the population lives.

Further analysis of the census results will be required in order to determine their completeness and the validity of the age - sex distribution.

### 4. Range of Projections in 2000.

India's population pyramid (see Figure 3) remains relatively broad based despite

declines in fertility over the past two decades. Projections of India's school-age population performed during the early 1980s, while not far off the mark, underwent revision in the late 1980s. This was due to an unanticipated slowdown in India's fertility decline. This slowdown in the decline will have significant effects on the size of the school-age population in the year 2000. Although no current projection series has yet been able to incorporate the results of the 1991 Census, we would recommend the use of the Census Bureau's CIR as the most up-to-date series.

**INDIA**
**Table 1.**
**Population by Age and Sex, Various Sources (in thousands)**

<u>Age Groups</u>	<u>United Nations 1980 Assessment</u>		<u>United Nations 1990 Assessment</u>		<u>World Bank '79</u>		<u>World Bank '89-'90</u>		<u>U.S. Census Bureau (1992 Series)</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
<b>1985</b>										
ALL AGES	389,701	363,238	397,943	371,240	384,963	360,253	395,083	370,064		
5 - 9	48,527	45,105	47,869	44,514	47,346	44,487	50,815	49,078		
10 - 14	47,102	43,447	45,717	42,022	47,621	44,182	46,088	43,172		
<b>1990</b>										
ALL AGES	424,653	396,207	440,888	412,206	422,993	397,928	437,259	410,469	441,179	411,488
5 - 9	50,623	47,231	54,520	50,916	50,999	48,395	55,511	51,915	52,830	49,767
10 - 14	47,942	44,405	47,468	44,057	46,752	43,857	50,426	48,626	47,925	44,324
<b>1995</b>										
ALL AGES	461,041	430,624	488,655	458,061	461,120	436,627	479,219	451,298		
5 - 9	51,296	47,993	57,262	53,691	54,285	51,971	57,027	53,881		
10 - 14	50,097	46,603	54,147	50,510	50,394	47,791	55,146	51,521		
<b>2000</b>										
ALL AGES	496,618	463,993	536,864	504,679	497,786	474,967	519,544	491,224	524,687	493,405
5 - 9	53,624	50,201	62,803	59,103	56,099	54,170	57,949	54,973	58,176	55,319
10 - 14	50,851	47,448	56,943	53,367	53,671	51,402	56,712	53,556	55,734	52,812

**MOST RECENT CENSUSES**

<u>Age Groups</u>	<u>Census of 1981</u>		<u>Census of 1991</u>
	<u>Male</u>	<u>Female</u>	<u>Total</u>
ALL AGES	354,384	330,775	843,900
5 - 9	47,430	44,715	
10 - 14	43,304	39,465	

**INDIA**

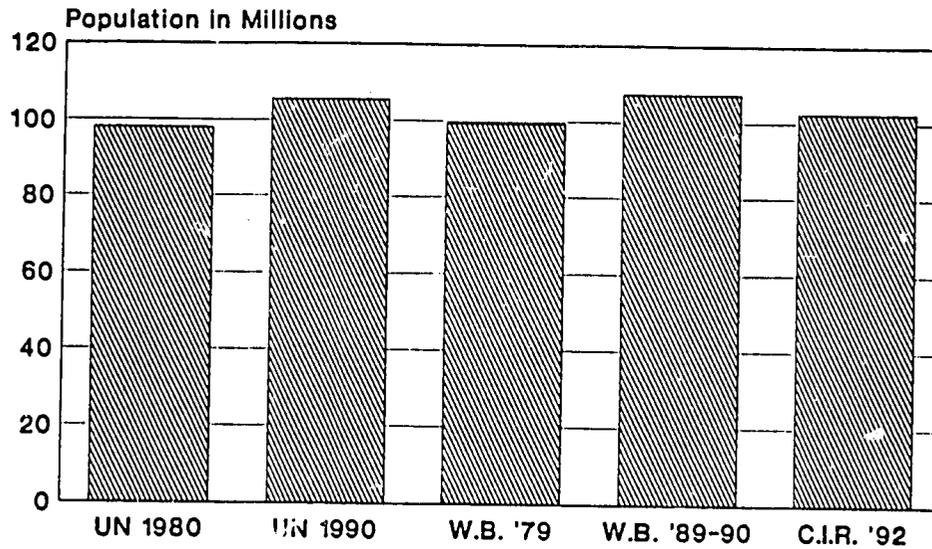
**Table 2. Total Fertility Rate: Estimates and Projections**

<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	5.6	5.0	4.5	3.9	3.5
United Nations (1990)	5.4	4.8	4.8	4.3	4.1
World Bank (1979)		5.0	4.6	4.2	3.8
World Bank (1989-90)		5.2	4.8	4.3	3.7
Center for International Research (1992)	5.7	5.0	4.5	4.0	3.7

**Total Fertility Rates: Survey Results**

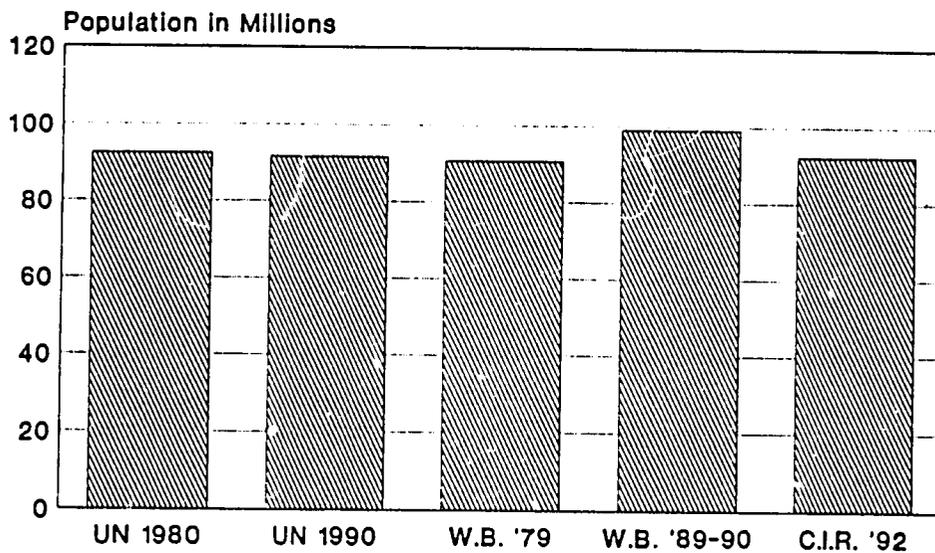
<u>Source</u>	<u>Reference Year of Survey Estimate:</u>			
	<u>1984</u>	<u>1987</u>	<u>1988</u>	<u>1988/89</u>
Registrar General (1984)	4.5			
Registrar General (1987)		4.1		
Registrar General (1988)			4.0	
Registrar General (1989)				3.9

Figure 1: Population Ages 5-9  
INDIA, 1990  
Various Sources



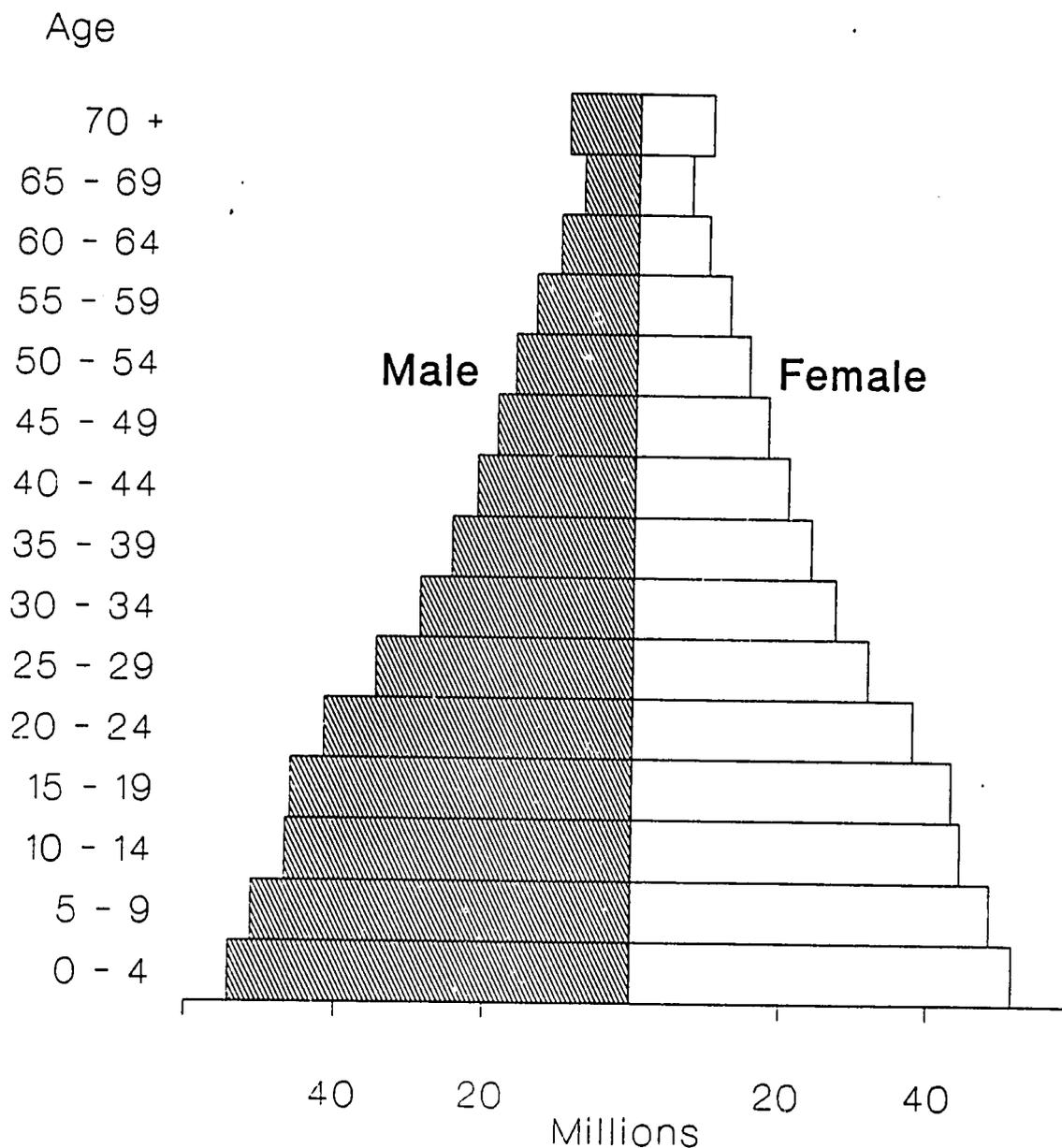
W.B.: World Bank  
C.I.R.: U.S. Census Bureau

Figure 2: Population Ages 10-14  
INDIA, 1990  
Various Sources



W.B.: World Bank  
C.I.R.: U.S. Census Bureau

# Figure 3: India Population by Age and Sex 1990



Source: Official Government Estimate  
from UN Demographic Yearbook 1990

## INDONESIA

### EXECUTIVE SUMMARY

#### Recommendation:

Use the UN's 1990 estimate as a benchmark figure until Indonesia's 1990 Census age data are available. The UN total population estimate is closest to the 1990 Census count at this point.

Extreme Range of Past and Current Estimate for 1990 School-Age Population, Ages 5-14:

**38,250,000 (UN 1980 "medium") -- 45,263,000 (CIR 1992)**

**Percent Difference of Range: 18.3**

Extreme Range of 2000 Projection:

**41,734,000 (UN 1990 "low") -- 45,168,000 (UN 1990 "medium")**

**Percent Difference of Range: 8.2**

Probable Trend in the School-Age Population to 2000:

Recent fertility trends in Indonesia will cause a decline in the size of the school-age population. If Indonesia can maintain its recent pace of fertility decline, the decrease will be more rapid. If there are no large adjustments to the 1990 Census, the decrease will be even greater than current projections suggest.

## 1. Age-Sex Distribution.

During the 1970s, Indonesia was well known for its population policy to reduce fertility and the many innovative methods used to encourage the use of family planning. In the early 1980s, there was some concern that the decline in the birth rate had halted, or at least slowed. Subsequent survey data, however, estimated that the birth rate had, in fact continued to decrease.

The effect of the decrease can be seen in Indonesia's population pyramid in Figure 3. Although there have been problems in the reporting of age and some unusual age-specific undercounts, the overall shape clearly shows that, for the first time, the youngest cohort in Indonesia is smaller than the preceding ones. If results from the 1990 Census bear this out, Indonesia will have crossed an important demographic threshold on the path to slower population growth.

The 1990 Census count of 180 million fell about 4 million under projections for 1990 by the World Bank and the UN and 9 million below that of CIR. Thus, the 1990 Census results were about 2 to 5 percent less than expected. Current estimates for the 5-14 population range from 42.9 million in the UN 1990 Assessment to 45.3 from the CIR, which uses higher estimates of undercount. During the 1980s, the UN raised its estimate of Indonesia's population significantly, based on the 1980 Census results and analysis.

Selecting a range of error for 1990 by examining past and current estimates of school-age population is more difficult in Indonesia's case given the variability in estimates of that have been used over the past decade. The UN, for example, projected only 38.3 million 5-14 year-olds in its 1980 Assessment, raising that to 42.9 million in the 1990 issue.

Release of the 1990 Census age information will cause a reevaluation of trends in the school-age population and result in new projections.

## 2. Fertility Trends.

Survey data from Indonesia in the late 1980s (see Table 2) confirmed that there was a continuing drop in the birth rate, but questions remain as to how large a drop occurred. In the table, it is evident that published estimates of the TFR for 1985-1990 have not yet accepted or incorporated the 1987 DHS TFR of 3.0. This has the potential to produce school-age populations for 1990 that are somewhat too high with similar consequences for 2000. The release of the 1990 Census age distribution will cause another reevaluation of Indonesian fertility trends which will yield new projections.

## 3. Range of Projections in 2000.

The number of school-age children in Indonesia in 2000 will depend both upon the level of the TFR assumed for the late 1980s and its projected decline to 2000. As has been mentioned above, the first of those two parameters is in some doubt. Given Indonesia's past record on fertility decline, an optimistic scenario would seem to be in order. It is likely that the DHS survey in 1987 did underestimate the TFR to a degree, thus lending credence to a TFR around 3.1 or 3.2 in the latter half of the 1980s. For that reason, the UN's medium projection, which assumes a continued decline in the TFR to 2.5 by 2000 appears to be a reasonable assumption. A decline of this magnitude would

be somewhat less than took place in the previous decade, but a decelerating decline approaching replacement is common.

The UN's high projection assumes a much more modest decline in the TFR by 2000, to a value of 2.85. This seems too conservative a view. The low projection scenario of the UN has the TFR declining rapidly to 2.1 by 2000. While not impossible, this would almost certainly be a lower limit of likelihood. For that reason, the UN low and medium series are recommended as the outside range for 2000.

**INDONESIA**

**Table 1.**

**Population by Age and Sex, Various Sources (in thousands)**

<u>Age Groups</u>	<u>United Nations 1980 Assessment</u>		<u>United Nations 1990 Assessment</u>		<u>World Bank '79</u>		<u>World Bank '89-90</u>		<u>U.S. Census Bureau (1992 Series)</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
1985										
ALL AGES	79,931	80,727	83,275	84,057	78,535	79,295	81,934	82,695		
5 - 9	9,641	9,352	10,890	10,549	10,092	9,847	11,267	10,668		
10 - 14	9,780	9,565	10,528	10,332	9,019	8,775	10,234	9,872		
1990										
ALL AGES	86,479	87,051	91,800	92,483	86,659	87,226	90,412	91,180	94,360	94,808
5 - 9	9,911	9,623	11,005	10,699	11,002	10,720	10,931	10,447	11,519	11,235
10 - 14	9,503	9,213	10,786	10,459	9,951	9,707	11,171	10,584	11,366	11,143
1995										
ALL AGES	93,136	93,514	100,607	101,190	95,002	95,399	98,622	99,315		
5 - 9	10,199	9,898	11,292	10,923	11,573	11,268	11,405	11,061		
10 - 14	9,787	9,501	10,918	10,625	10,869	10,593	10,860	10,389		
2000										
ALL AGES	99,235	99,451	109,073	109,588	103,336	103,588	106,493	107,073	110,239	110,978
5 - 9	10,488	10,164	11,748	11,340	11,972	11,637	11,381	11,013	11,022	10,730
10 - 14	10,090	9,793	11,217	10,863	11,454	11,158	11,349	11,018	11,245	10,986

**MOST RECENT CENSUSES**

<u>Age Groups</u>	<u>Census of 1971</u>		<u>Census of 1980</u>		<u>Census of 1990</u>
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
ALL AGES	58,339	60,029	72,952	73,825	179,322
5 - 9	9,525	9,237	10,838	10,429	
10 - 14	7,353	6,826	9,180	8,508	

## INDONESIA

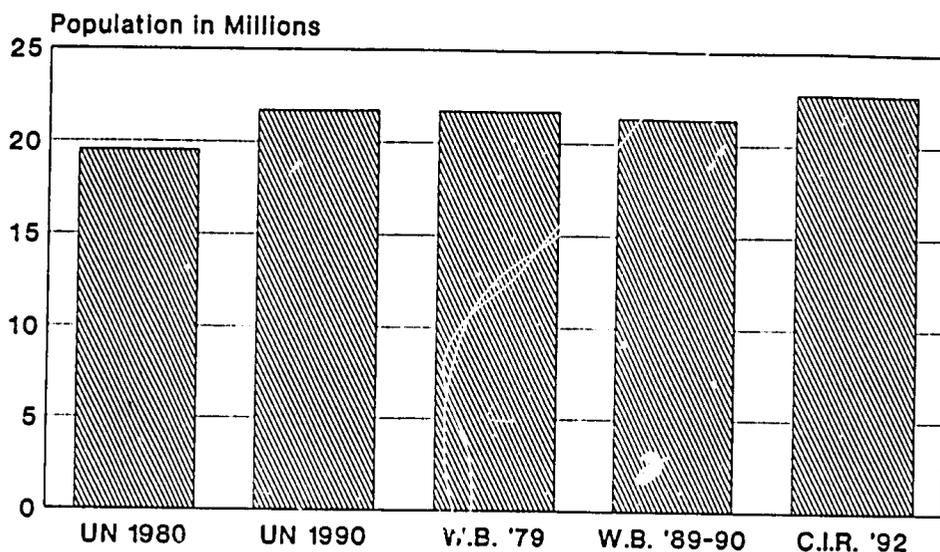
**Table 2. Total Fertility Rate: Estimates and Projections**

<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	5.7	4.7	4.1	3.5	3.1
United Nations (1990)	5.1	4.7	4.1	3.5	3.1
World Bank (1979)		4.9	4.4	4.0	3.6
World Bank (1989-90)		4.8	4.1	3.5	3.0
Center for International Research (1992)			4.1	3.3	2.8

### Total Fertility Rates: Survey Results

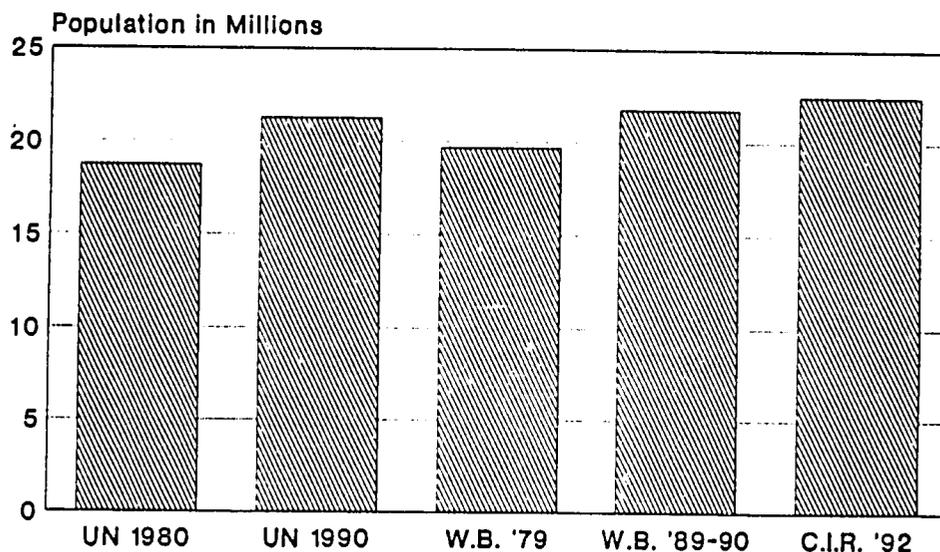
<u>Source</u>	<u>Reference Year of Survey Estimate:</u>			
	<u>1971/75</u>	<u>1981/83</u>	<u>1981/84</u>	<u>1984/87</u>
SUPAS (1976)	5.1			
SUPAS (1985)			4.0	
Demographic and Health Survey (1987)		4.3		3.3

Figure 1: Population Ages 5-9  
INDONESIA, 1990  
Various Sources



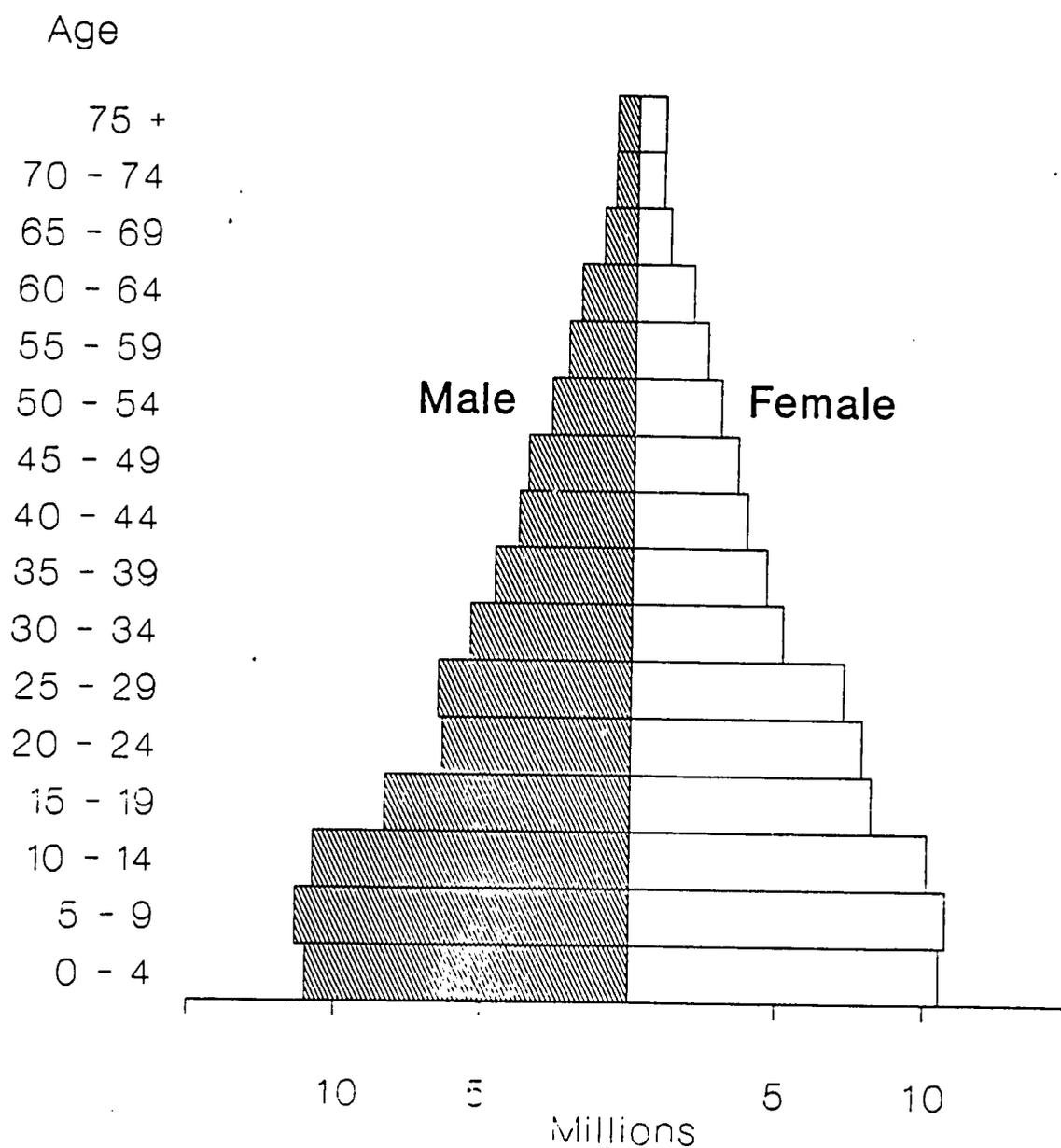
W.B.: World Bank  
C.I.R.: U.S. Census Bureau

Figure 2: Population Ages 10-14  
INDONESIA, 1990  
Various Sources



W.B.: World Bank  
C.I.R.: U.S. Census Bureau

# Figure 3: Indonesia Population by Age and Sex 1989



Source: Official Government Estimate  
from UN Demographic Yearbook 1990

## MEXICO

### EXECUTIVE SUMMARY

Recommendation:

The new 1990 Census data should be used as a benchmark figure for new projections

Extreme Range of Current and Past Estimate for 1990 School-Age Population, Ages 5-14:

20,951,000 (1990 Census) -- 23,905,000 (1980 UN "medium")

Percent Difference of Range: 14.1

Extreme Range of 2000 Projection:

19,591,000 (UN 1990 "low") -- 23,143,000 (UN 1990 "medium")

Percent Difference of Range: 18.1

Probable Trend in the School-Age Population to 2000:

School entry ages (age 5) will decrease in 1992-93; total school-age population will decline in size by 2000, but only if fertility continue to fall. Knowledge of the absolute size of the population has been seriously clouded by the results of the 1990 Census, but the overall trend should be downward.

## 1. Age-Sex Distribution.

Mexico provides a good example of a country whose projected age-sex distribution during the 1980s underwent significant revision following unanticipated demographic trends.

In Table 1, it can be observed that the 1980 edition of the United Nations Assessment projected relatively high numbers of children in the school-age groups in Mexico. For example 23,905,000 children ages 5-14 were projected for 1990, a figure about 14 percent higher than the subsequent 1990 Census count (also see Figures 1 and 2). The UN's Assessment series is the most widely used set of population projections, providing the basis for demographic analyses, project planning, and policy work by all other UN specialized agencies. Although lower than the UN's 1980 projections, the World Bank's earlier projection series (1979 edition) resulted in school age cohorts that were too high (by 11 percent) when compared to the 1990 Census.

The fact that population projections performed in the early 1980s for Mexico were too high is a result of two factors: first, fertility in Mexico, based upon survey data, appears to have fallen faster than anticipated and, secondly, the 1980 census -- upon which the projections were based -- may have been inflated. A census result that differs markedly from precensal estimates is not unusual in developing countries, but the total Mexican count in 1990 was about 10 percent less than estimates by the UN and World Bank (cf. Section 3 below).

## 2. Fertility Trends.

In Table 2, it can be seen that fertility fell to an average of less than four children per woman, or to a total fertility rate (TFR) of 3.8 children per woman in 1986. This decrease, the result of a reduced preference for larger families and reinforced by an active government policy to lower fertility, exceeded expectations.

As national survey data measured the steep drop in fertility from 6.4 children per woman in 1973 to 3.8 in 1986, UN and World Bank projections were adjusted to be in line with the new developments. Note that, in Table 2, the UN 1990 Assessment showed a TFR of 3.6 for the 1985-1990 period, down from 4.3 in the earlier UN projection. In Table 2, TFR's for the periods 1985-1990 and 1990-1995 are projected, *assuming* continued decline in the TFR which may or may not occur. The last *measured* TFR available is from the 1987 Demographic and Health Survey, which provides the estimate for calendar year 1986 shown in Table 2.

## 3. The 1990 Census.

Given the problematic nature the 1990 Census of Mexico, special mention of the count should be given here.

Depending upon which set of precensal estimates for the year 1990 is used as a benchmark, the 1990 Census of Mexico counted from 4 to 7 million fewer Mexicans than expected. A 1985 official projection predicted a population in midyear 1990 of 85.8 million, 4.7 more than the census count of March 1990 (81.1 million) would have predicted.

The results of the census are somewhat controversial. Some have suggested that the lower count may have been falsified in order to improve per capita income and economic growth measures. In addition, there were reports that many housing units which were not occupied when the census taker arrived were not revisited.

Figure 3 shows the population pyramid based on the 1990 Census. The small size of the 0-4 age group when compared to the 5-9 group may indicate declining birth cohorts. On the other hand, the youngest age group is often underenumerated in developing countries, so the size of the population ages 0-4 may be slightly larger than shown. In terms of the school age cohorts, the 1990 Census results have sufficiently clouded the picture that school age population sizes are difficult to pinpoint.

Despite the controversy, the 1990 Census provides the most complete data for planning purposes, including single-year age groups, urban-rural break-down, and state-by-state figures now available. It does not now seem likely that the 1990 Census itself will be adjusted, but that does not rule out adjustments to projections that the Mexican government will use for planning purposes (programática). Significantly, no estimate of an estimated undercount is given in UN Statistical Office publications. Until more is learned on the status of a possible estimate of undercount, we recommend that the 1990 Census data be used as a benchmark and that new projections be performed to project school age populations to 2000. These projections should extrapolate from the 1987 DHS results on fertility trends.

#### 4. Range of Projections in 2000.

Based upon the UN 1990 projection series, the least number of children ages 5-14 that can be expected in 2000 is 19,591,000 and the largest would be 23,143,000. The low figure is the UN's "low" projection, which assumes continued rapid decrease in Mexican fertility by to 2000 to a TFR of 2.2. The higher figure is the UN's "medium" projection, which assumes a 2000 TFR of 2.7. In this case, the medium series has been selected as the upper limit, since the UN figures, as noted above already exceeded the actual 1990 Census.

Note that the lowest range given above, 19,591,000 from the UN projections is only slightly one million lower the 1990 Census count for ages 5-14. This illustrates just how much doubt the very low 1990 Census has cast on the issue.

**MEXICO**

**Table 1.**

**Population by Age and Sex, Various Sources (in thousands)**

<u>Age Groups</u>	<u>United Nations 1980 Assessment</u>		<u>United Nations 1990 Assessment</u>		<u>World Bank '79</u>		<u>World Bank '89-'90</u>		<u>U.S. Census Bureau (1992 Series)</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
<b>1985</b>										
ALL AGES	40,427	40,057	39,666	39,710	40,263	39,667	39,287	39,237		
5 - 9	5,766	5,602	5,312	5,128	5,633	5,418	5,261	5,067		
10 - 14	5,272	5,125	5,519	5,347	5,286	5,102	5,466	5,283		
<b>1990</b>										
ALL AGES	46,207	45,769	44,205	44,393	46,248	45,488	43,551	43,711	43,551	44,597
5 - 9	6,393	6,216	5,607	5,410	6,287	6,040	5,553	5,343	5,721	5,527
10 - 14	5,723	5,573	5,266	5,092	5,616	5,405	5,219	5,032	5,401	5,322
<b>1995</b>										
ALL AGES	52,157	51,658	48,806	49,161	52,344	51,418	47,992	48,309		
5 - 9	6,866	6,676	5,825	5,620	6,776	6,504	5,664	5,460		
10 - 14	6,352	6,189	5,562	5,375	6,271	6,029	5,512	5,309		
<b>2000</b>										
ALL AGES	58,103	57,555	53,341	53,892	58,363	57,282	52,169	52,634	54,107	55,448
5 - 9	7,139	6,939	5,993	5,781	6,962	6,678	5,896	5,673	6,538	6,313
10 - 14	6,828	6,652	5,782	5,587	6,761	6,495	5,625	5,427	6,093	5,894

**MOST RECENT CENSUSES**

<u>Age Groups</u>	<u>Census of 1980</u>		<u>Census of 1990</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
ALL AGES	33,039	33,807	39,894	41,356
5 - 9	5,173	5,111	5,338	5,224
10 - 14	4,575	4,520	5,231	5,158

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**MEXICO**

**Table 2. Total Fertility Rate: Estimates and Projections**

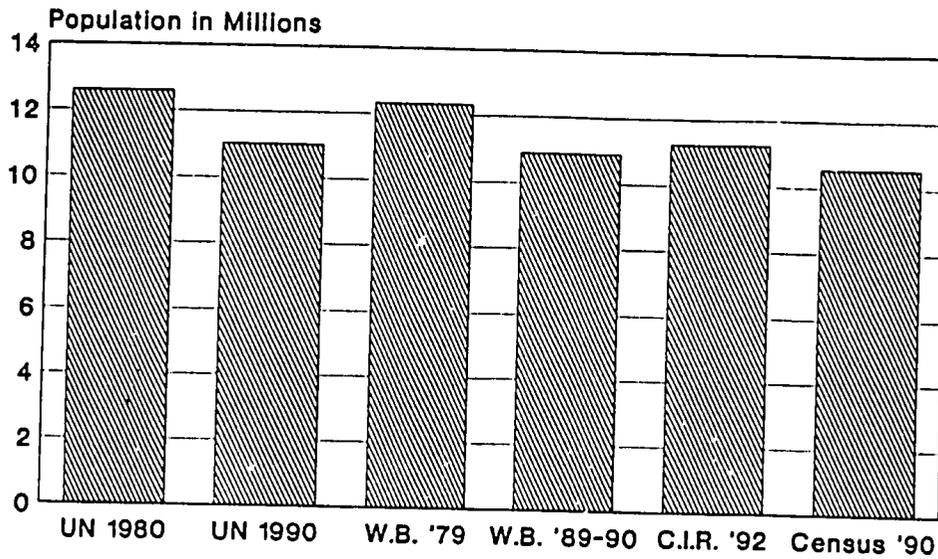
<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	6.2	5.4	4.9	4.3	3.7
United Nations (1990)	6.4	4.9	4.2	3.6	3.1
World Bank (1979)		5.7	5.1	4.6	3.9
World Bank (1989-90)		4.9	4.2	3.6	3.1
Center for International Research (1992)			4.3	3.7	3.3

**Total Fertility Rates: Survey Results**

<u>Source</u>	<u>Reference Year of Survey Estimate:</u>			
	<u>1973</u>	<u>1978</u>	<u>1982</u>	<u>1986</u>
World Fertility Survey (1978)	6.4	5.0		
Contraceptive Prevalance Survey (1982)			4.3	
Demographic and Health Survey (1986)				3.8

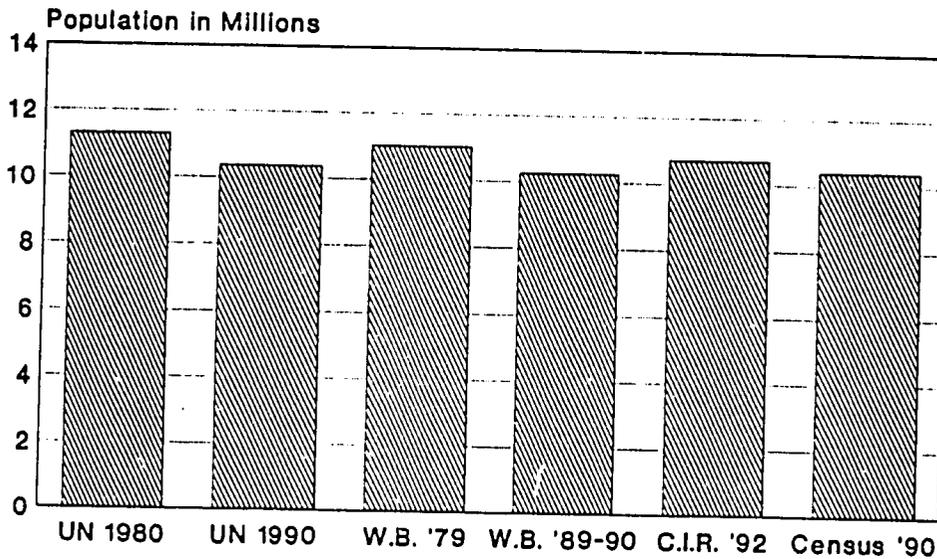
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Figure 1: Population Ages 5-9  
MEXICO, 1990  
Various Sources



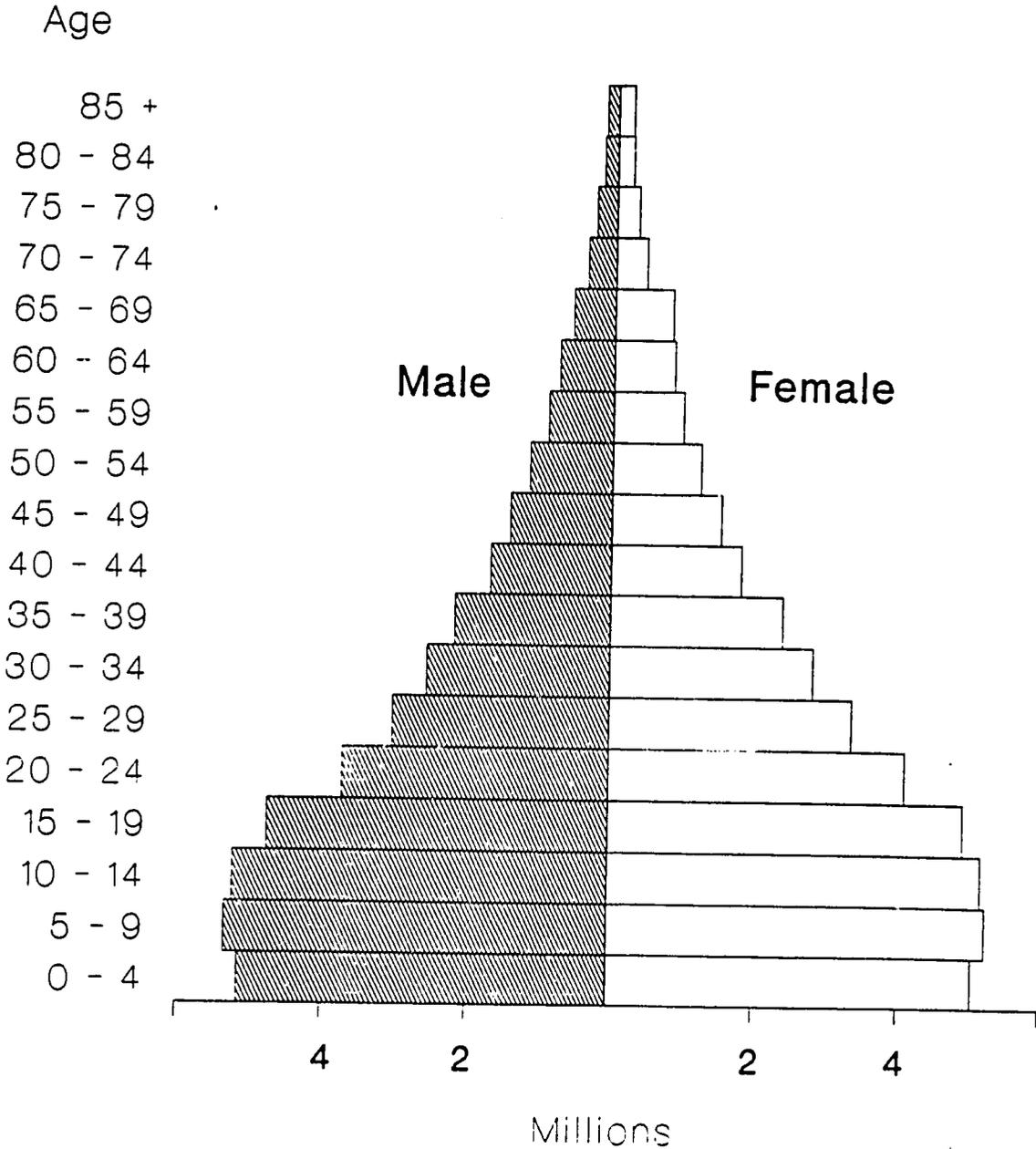
W.B.: World Bank  
C.I.R.: U.S. Census Bureau

Figure 2: Population Ages 10-14  
MEXICO, 1990  
Various Sources



W.B.: World Bank  
C.I.R.: U.S. Census Bureau

# Figure 3: Mexico Population by Age and Sex 1990



Source: 1990 Census

## **NIGERIA**

### **EXECUTIVE SUMMARY**

#### **Recommendation:**

**The World Bank's provisional projection, as the first run after the low 1991 count should be used until more information becomes available.**

**Extreme Range of Current and Past Estimate for 1990 School-Age Population, Ages 5-14:**

**27,550,000 (WB 1992) -- 33,347,000 (WB 1979)**

**Percent Difference of Range: 21.0**

#### **Provisional 2000 Projection:**

**34,945,000 (WB 1992)**

**Percent Difference of Range: n.a**

**Probable Trend in the School-Age Population to 2000:**

**No decrease in school-age population is expected, pending the onset of fertility decline.**

## 1. Age-Sex Distribution.

Today, less is known about Nigeria's population and age structure than almost any other country. The Nigerian Census of 1991 came as a shock to most analysts. Its count of 88.5 million was anywhere from 20 to 30 million lower than expected. For that reason, none of the age-sex data shown here for Nigeria can be deemed usable. Nonetheless, examination of past projections can provide some indication of likely trends, if not absolute numbers.

As can be seen in Figures 1 and 2, estimates of Nigeria's school age groups varied considerably even before the 1991 count. The UN projections remained essentially the same, primarily for a lack of any new data. The World Bank projections shown in Table 1 differ from those for the other countries in this report. This is a new projection recently produced by the Bank as an attempt to account for the lower population total. They are provisional and cannot be considered final, certainly not until more is known about the 1991 Census.

Nigeria continues to have very high fertility. This is reflected in the wide-based population pyramid in Figure 3. Despite the census controversy, there is little doubt that the pyramid does represent an approximate picture of Nigeria's age-sex structure.

Selecting a range for a school-age estimate is virtually impossible at this point, but several possibilities do suggest themselves. Assuming the census had some undercount, the World Bank projection should serve as a rough indicator of the low end. The Bank based its projection on a reevaluation of Nigeria's past, and highly flawed censuses. The 1991 count cannot be used yet, particularly since no age data are available. Note that

the total population for 1990 in the Bank's series would be about 96 million, essentially equivalent to the census plus a typical upward adjustment for undercount. Although no basis exists to select upper and lower limits, the earlier (1979) Bank projection is shown in the Executive Summary to give an idea of how far off projections can be when dealing with Nigeria.

## 2. The 1991 Census.

Nigeria has had a history of very poor censuses, each of which is thought to be have been severely overcounted. Although this was a generally accepted fact, the 88.5 million 1991 Census was nonetheless a surprise. At first the government insisted that this was the first good count and maintains that position at present. Past censuses were overcounted due to exaggeration of totals for Nigeria's states, who wished to enhance their political position and obtain more federal funds. The 1991 Census take extra pains to avoid regional bias by appointing regional directors who had no previous connection to their geographic area of responsibility.

But recent anecdotal reports now suggest that the final figure had been "doctored" before its release. The count for at least one northern state was reduced before it was issued and the figure for Kano city was lowered since it showed a larger population than Lagos. An additional confounding element is the fact that Nigeria has 77 million registered voters! The upcoming elections may shed some light on just how many Nigerians there actually are.

### 3. Fertility Trends.

The fertility trend in Nigeria is equally difficult to pinpoint. The TFR from both fertility surveys in the 1980s are adjusted upwards by all organizations and it is highly likely that birth histories in the surveys are defective. The earlier (1982) WFS had initially reported a TFR below 6 children per woman, but that was later adjusted upwards. At present, with a contraceptive prevalence rate of just 4 percent, there is little or no evidence that a fertility decline has yet begun.

### 4. Range of Projections in 2000.

From the above discussion, it is obvious that no range of estimates for the school-age population can be specified for 2000. It is, however, unlikely that estimates of Nigeria's population in 1990 will ever return to the previous high levels. For that reason, we recommend using the World Bank's provisional projection as a very rough indicator for 2000.

**NIGERIA**

**Table 1.**

**Population by Age and Sex, Various Sources (in thousands)**

<u>Age Groups</u>	<u>United Nations 1980 Assessment</u>		<u>United Nations 1990 Assessment</u>		<u>World Bank '79</u>		<u>World Bank '89-'90</u>		<u>U.S. Census Bureau (1992 Series)</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
<b>1985</b>										
ALL AGES	45,138	46,040	45,531	46,484	52,155	52,260	40,874	42,322		
5 - 9	7,050	7,038	6,984	6,977	8,148	8,133	6,429	6,458		
10 - 14	5,728	5,739	5,704	5,718	6,253	6,293	5,311	5,461		
<b>1990</b>										
ALL AGES	53,503	54,451	53,766	54,776	60,367	60,627	47,204	49,000	59,264	59,493
5 - 9	8,515	8,484	8,349	8,326	9,737	9,698	7,523	7,490	8,643	8,775
10 - 14	6,883	6,881	6,799	6,801	7,957	7,955	6,237	6,300	7,205	7,379
<b>1995</b>										
ALL AGES	63,279	64,269	63,311	64,383	68,815	69,249	54,355	56,705		
5 - 9	10,017	9,960	9,990	9,949	10,215	10,154	8,257	8,257		
10 - 14	8,340	8,324	8,151	8,141	9,536	9,513	7,309	7,335		
<b>2000</b>										
ALL AGES	74,470	75,495	74,243	75,379	78,256	78,877	62,178	65,266	80,334	80,516
5 - 9	11,602	11,510	11,523	11,457	10,666	10,583	9,405	9,391	11,865	11,919
10 - 14	9,842	9,803	9,779	9,756	10,030	9,988	8,037	8,112	9,813	9,915

**MOST RECENT CENSUSES**

<u>Age Groups</u>	<u>Census of 1963</u>		<u>Census of 1991</u>
	<u>Male</u>	<u>Female</u>	<u>Total</u>
ALL AGES	28,112	27,558	88,515
5 - 9	4,360	4,078	
10 - 14	3,255	2,683	

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## NIGERIA

**Table 2. Total Fertility Rate: Estimates and Projections**

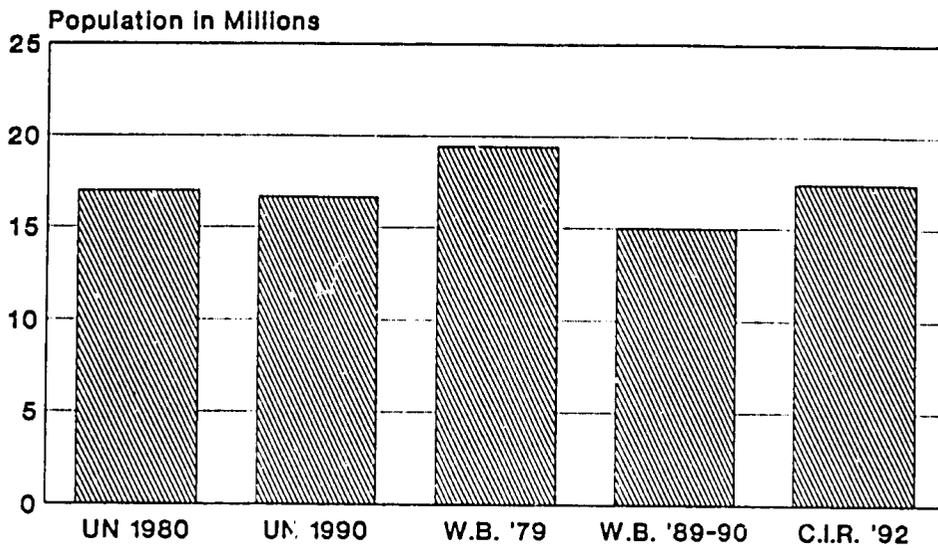
<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	6.9	6.9	6.9	6.7	6.3
United Nations (1990)	6.9	6.9	6.9	6.9	6.6
World Bank (1979)		6.9	6.9	6.1	5.3
World Bank (1989-90)		6.9	6.9	6.7	6.3
Center for International Research (1992)	6.6	6.6	6.6	6.6	6.5

### Total Fertility Rates: Survey Results

<u>Source</u>	<u>Reference Year of Survey Estimate:</u>	
	<u>1978/82</u>	<u>1987/90</u>
World Fertility Survey (1982)	6.3	
Demographic and Health Survey (1990)		6.0

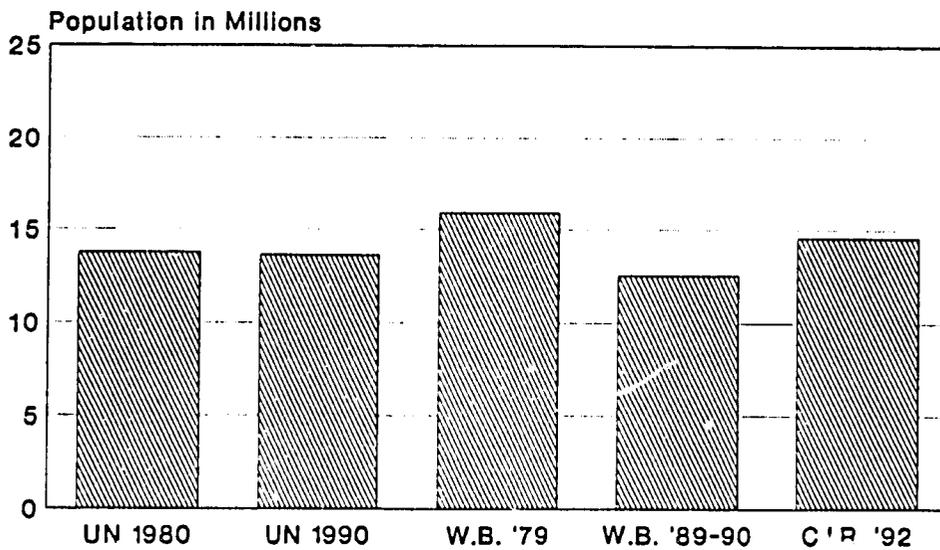
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Figure 1: Population Ages 5-9  
 NIGERIA, 1990  
 Various Sources



W.B.: World Bank  
 C.I.R.: U.S. Census Bureau

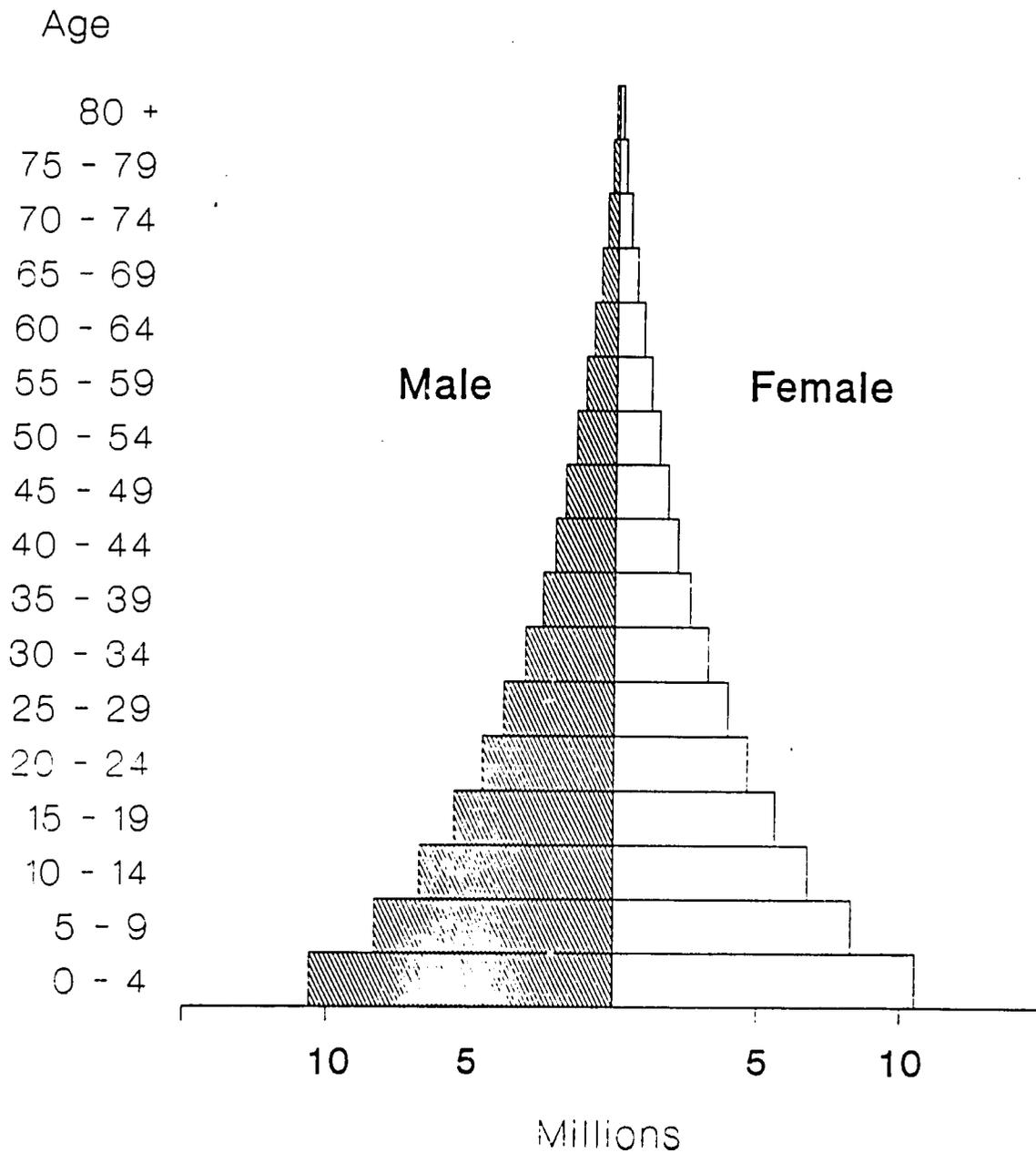
Figure 2: Population Ages 10-14  
 NIGERIA, 1990  
 Various Sources



W.B.: World Bank  
 C.I.R.: U.S. Census Bureau

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# Figure 3: Nigeria Population by Age and Sex 1990



Source: UN Estimate 1990

**PHILIPPINES**  
**EXECUTIVE SUMMARY**

Recommendation:

**The 1990 Census should be used as a benchmark figure.**

Extreme Range of Past and Current Estimates for 1990 School-Age Population, 5-14:

**14,797,000 (World Bank 1979) - 16,109,000 (World Bank 1989-90)**

**8.9 percent**

Extreme Range of 2000 Projection:

**16,600,000 (World Bank 1989-90) - 18,364,000 (UN 1990 "medium")**

**10.6 percent**

Probable trend in the School-Age Population to 2000:

**School-age population will continue to grow through the end of the century. There are unlikely to be any declines in school-age population before 2025.**

## 1. Age-Sex Distribution.

The age-sex distribution of the Philippines is fairly typical for a developing country which has experienced only moderate fertility declines. The base continues to be wide, as "momentum" creates relatively larger birth cohorts each year despite the lowered birth rates. Estimates of 1990 school-age population have, as a consequence, been increased slightly over the past decade.

The 1990 census came out between 1.5 and 3.7 million lower than estimates of the UN, World Bank and Census Bureau (this is a 2.5 to 6.1 percent difference). The count in the Philippines fits a pattern of low counts in other parts of the world, resulting from both relatively rapid declines in fertility and from possible undercounts. Until further evaluation of the Philippine census is carried out, it will be difficult to determine the relative weight of the two factors.

## 2. Fertility Trends.

There is a fair degree of disagreement among the three sources on the prospects for further fertility decline in the Philippines. The World Bank assumes a rapid decline to a TFR of 3.3 births per woman during the 1990-95 time period, while the UN is less sanguine, posting the TFR at approximately 3.9. This results in an interesting switch, in which the WB 1989-90 series moves from the highest of the school-age population estimates in 1990 to the lowest of the estimates in 2000.

Although adequate survey data on fertility was collected through 1986, the current fertility situation in the Philippines is a matter of some debate. Until further survey research is carried out it will be difficult to accurately project future school enrollments.

### 3. Projections for 2000.

The range of projections for the year 2000 is relatively narrow, with the World Bank and the UN forming the lower and upper limits respectively. Until further analysis is conducted on the 1990 Census, we would recommend using the Census Bureau 1992 series for age-sex distribution in the year 2000.

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PHILIPPINES

Table 1.

Population by Age and Sex, Various Sources (in thousands)

<u>Age Groups</u>	<u>United Nations 1980 Assessment</u>		<u>United Nations 1990 Assessment</u>		<u>World Bank '79</u>		<u>World Bank '89-'90</u>		<u>U.S. Census Bureau (1992 Series)</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
1985										
ALL AGES	28,260	27,703	27,675	227,446	27,531	26,948	28,146	27,673		
5 - 9	3,835	3,706	3,842	3,654	3,612	3,469	3,908	3,684		
10 - 14	3,448	3,339	3,372	3,194	3,855	3,700	3,432	3,223		
1990										
ALL AGES	31,728	31,102	31,365	31,048	31,021	30,335	31,334	30,820	31,983	32,421
5 - 9	4,166	4,023	4,305	4,104	3,960	3,798	4,407	4,169	4,301	4,204
10 - 14	3,808	3,684	3,803	3,625	3,589	3,450	3,875	3,658	3,999	3,904
1995										
ALL AGES	35,314	34,642	35,169	34,766	34,668	33,874	34,494	33,919		
5 - 9	4,267	4,121	4,619	4,406	4,260	4,082	4,220	4,077		
10 - 14	4,143	4,006	4,267	4,077	3,938	3,782	4,376	4,144		
2000										
ALL AGES	38,860	38,175	38,978	38,494	38,297	37,407	37,537	36,996	38,594	39,153
5 - 9	4,447	4,296	4,310	4,590	4,485	4,292	4,251	4,101	4,484	4,359
10 - 14	4,248	4,109	4,582	4,382	4,241	4,069	4,193	4,055	4,371	4,270

MOST RECENT CENSUSES

<u>Age Groups</u>	<u>Census of 1980</u>		<u>Census of 1990</u>
	<u>Male</u>	<u>Female</u>	<u>Total</u>
ALL AGES	24,129	23,969	60,685
5 - 9	3,603	3,154	
10 - 14	3,214	2,864	

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## PHILIPPINES

**Table 2. Total Fertility Rate: Estimates and Projections**

<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	5.5	5.0	4.5	3.9	3.5
United Nations (1990)	5.3	5.0	4.7	4.3	3.9
World Bank (1979)		5.0	4.5	4.0	3.5
World Bank (1989-90)		5.0	4.7	3.9	3.3
Center for International Research (1992)					3.5

### Total Fertility Rates: Survey Results

<u>Source</u>	<u>Reference Year of Survey Estimate:</u>			
	<u>1968/72</u>	<u>1974/78</u>	<u>1978/82</u>	<u>1982/96</u>
National Demographic Survey (1973)	5.9			
World Fertility Survey (1978)		5.2		
National Demographic Survey (1983)			5.0	
Contraceptive Prevalance Survey (1986)				4.7

Figure 1: Population Ages 5-9  
 PHILIPPINES, 1990  
 Various Sources

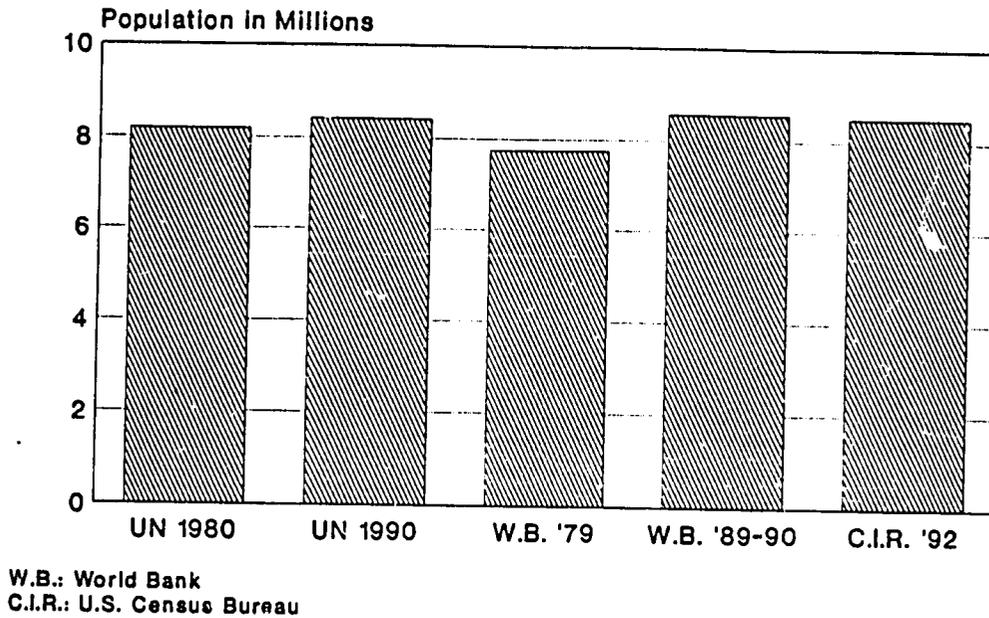
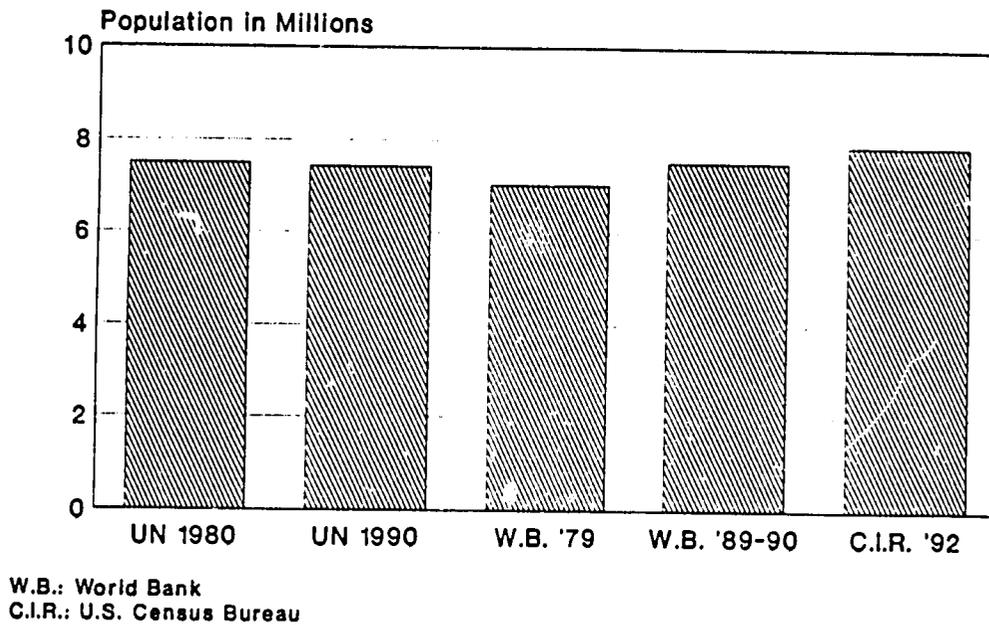
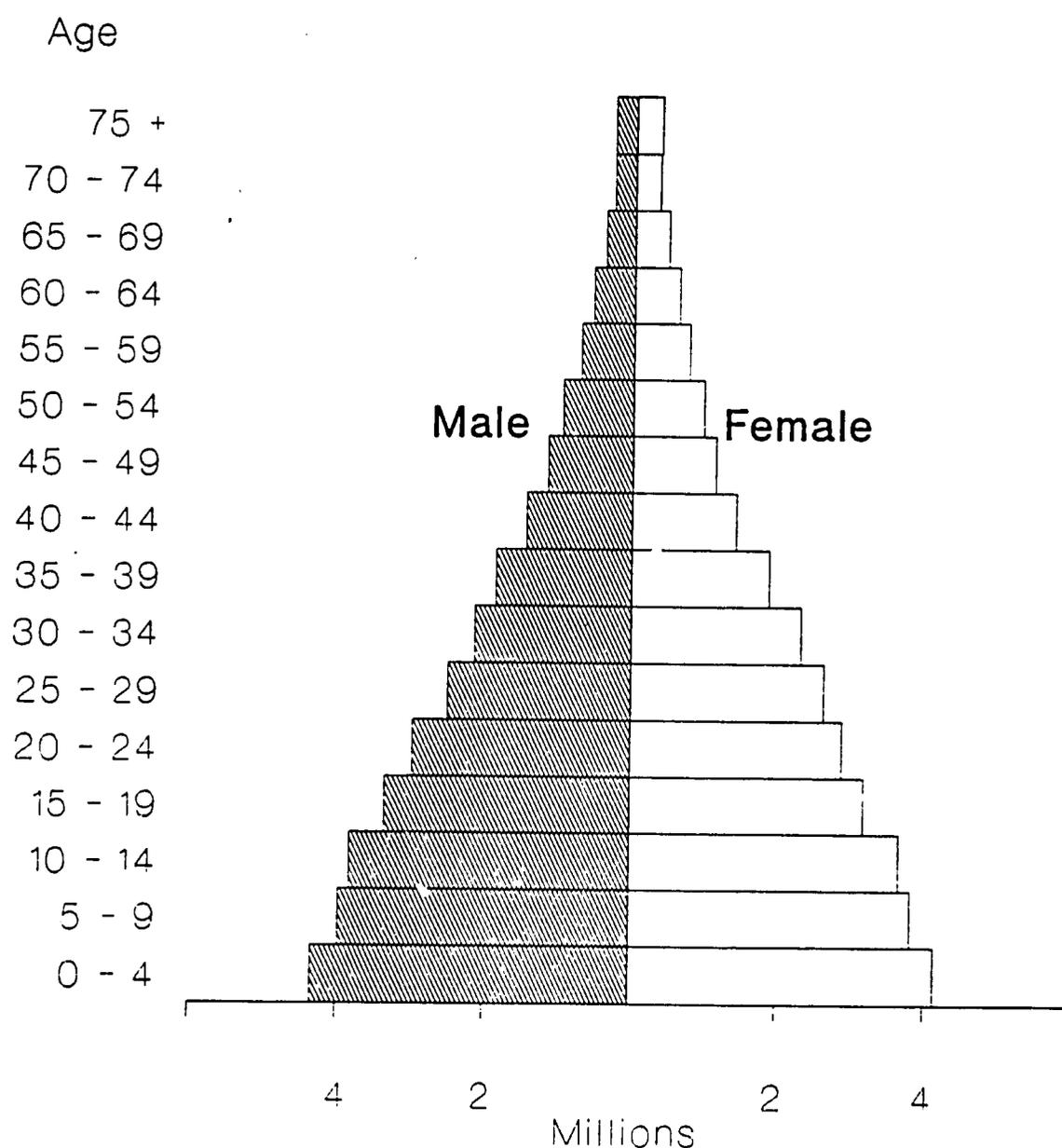


Figure 2: Population Ages 10-14  
 PHILIPPINES, 1990  
 Various Sources



# Figure 3: Philippines Population by Age and Sex 1990



Source: Official Government Estimate  
from UN Demographic Yearbook 1990

## THAILAND

### EXECUTIVE SUMMARY

Recommendation:

**Use the CIR's 1990 estimate for a benchmark figure until Thailand's 1990 Census age data are available.**

Extreme Range of Current and Past Estimate for 1990 School-Age Population, Ages 5-14:

**12,062,000 (CIR 1992) -- 13,228,000 (1980 UN "medium")**

**Percent Difference of Range: 9.7**

Extreme Range of 2000 Projection:

**9,710,000 (UN 1990 "low") -- 11,080,000 (UN 1990 "medium")**

**Percent Difference of Range: 14.1**

Probable Trend in the School-Age Population to 2000:

**By 2000, the school-age population in Thailand will decrease to a size significantly less than in 1990. Even the high projection above is less than the current CIR figure of 12.1 million. Age detail from the 1990 Census is likely to reduce this projection further, pending any adjustment for census undercount.**

## 1. Age-Sex Distribution.

Thailand is one of several LDCs to have experienced a spectacular decline in fertility during the 1980s. Well-known for an ambitious and well-run family planning, Thailand is very close to "replacement level" fertility of about 2.1 lifetime children per woman.

In Table 1, it can be seen that earlier projections from the UN and the World Bank produced higher numbers of school-age children that actually resulted. Both the UN 1980 projections and the Bank's 1979 series projected declining fertility, but they did not anticipate the speed of this decline (see Table 2). Age-specific populations are not yet available from the 1990 Census, but the count itself was only somewhat lower than expected. The count of 54.5 million fell under the UN's estimate for the same date by 1.2 million. No undercount estimate is given by the UN Statistical Office.

The 1980 UN Assessment projected a school-age population of 13.2 million for 1990, exactly the same as the World Bank. In the 1990 Assessment, the UN had dropped its estimate to 12.5 million, and the Bank to 12.6. Thus, earlier projections were higher by about 6 percent. The consistent drop in the projections is evident in Figures 2 and 3. In the population pyramid in Figure 3, the steady decrease in cohort size among the younger age groups is most evident in the population pyramid for Thailand (see attached).

Of all the projections available, until the age detail from the 1990 Census is released, the CIR's projections are recommended as a benchmark for current estimates of the school-age population. CIR's TFR for the 1985-1990 and 1990-1995 period were

prepared more recently than the other organizations and seem to reflect the present trend somewhat better.

## 2. Fertility Trends.

In Table 2, the sharp drop in fertility in Thailand is most evident. The use of family planning was increasing quickly in the 1970s and, today, has risen to levels similar to a developed country. About two-thirds of Thai couples now practice family planning and virtually all use a modern method.

UN and World Bank projections reflected the decline in the birth rate during the 1980s, adjusting their TFR projections downward accordingly. For the 1980-1985 period, both the UN and the Bank dropped the TFR from 3.3 to 2.6, essentially the same as the CIR.

In Table 2, it will be noted that the actual estimate derived from the 1987 DHS was actually a TFR of 2.2 and Thailand has, at times, been credited with reaching replacement level fertility. The actual figure used by other organizations, based on demographic methods to adjust survey data for underreporting are, as we have seen above, somewhat higher. The differences, however, are not large and do nothing to change the overall conclusions on Thailand's very low fertility.

## 3. Range of Projections in 2000.

Based upon the UN 1990 projection series, the least number of children ages 5-14

that can be expected in 2000 is 9.7 million. This projection assumes that the TFR would drop to 1.7 children per woman, quite low for an LDC, but similar to what has occurred in South Korea, Taiwan, and Singapore. This level is the absolute lowest that could be expected. A TFR of 1.7 would be equal to that of Western European rates. It is somewhat questionable that Thailand would reach that low a level since its stage of development is not quite that of the above-mentioned countries. Nonetheless, it is possible. The highest projection of the UN, which assumes a year 2000 TFR of 2.6 seems much too high since most estimates place Thailand below that level now and a rise in the TFR is most unlikely. Therefore, the UN medium projection is selected as the "high end" for 2000.

## THAILAND

Table 1.

## Population by Age and Sex, Various Sources (in thousands)

Age Groups	United Nations 1980 Assessment		United Nations 1990 Assessment		World Bank '79		World Bank '89-'90		U.S. Census Bureau (1992 Series)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1985										
ALL AGES	26,282	26,174	25,888	25,715	26,014	26,070	25,888	25,795		
5 - 9	3,273	3,220	3,174	3,059	3,232	3,132	3,174	3,069		
10 - 14	3,317	3,232	3,157	3,030	3,698	3,637	3,157	3,040		
1990										
ALL AGES	28,978	28,912	27,951	27,751	28,848	28,860	28,214	28,067	28,230	27,772
5 - 9	3,417	3,356	3,225	3,094	3,481	3,370	3,233	3,117	3,098	3,002
10 - 14	3,250	3,205	3,153	3,042	3,212	3,116	3,158	3,056	3,019	2,943
1995										
ALL AGES	31,732	31,701	29,910	29,695	31,693	31,666	30,475	30,310		
5 - 9	3,491	3,417	2,864	2,748	3,570	3,452	3,203	3,092		
10 - 14	3,398	3,344	3,207	3,080	3,463	3,356	3,219	3,107		
2000										
ALL AGES	34,295	34,314	31,944	31,726	34,357	34,304	32,504	32,361	32,132	31,699
5 - 9	3,607	3,520	2,802	2,689	3,649	3,524	3,241	3,122	2,797	2,682
10 - 14	3,474	3,407	2,851	2,738	3,555	3,442	3,191	3,084	2,879	2,771

## MOST RECENT CENSUS

Age Groups	Census of 1990
	Total
ALL AGES	54,532
5 - 9	
10 - 14	

## THAILAND

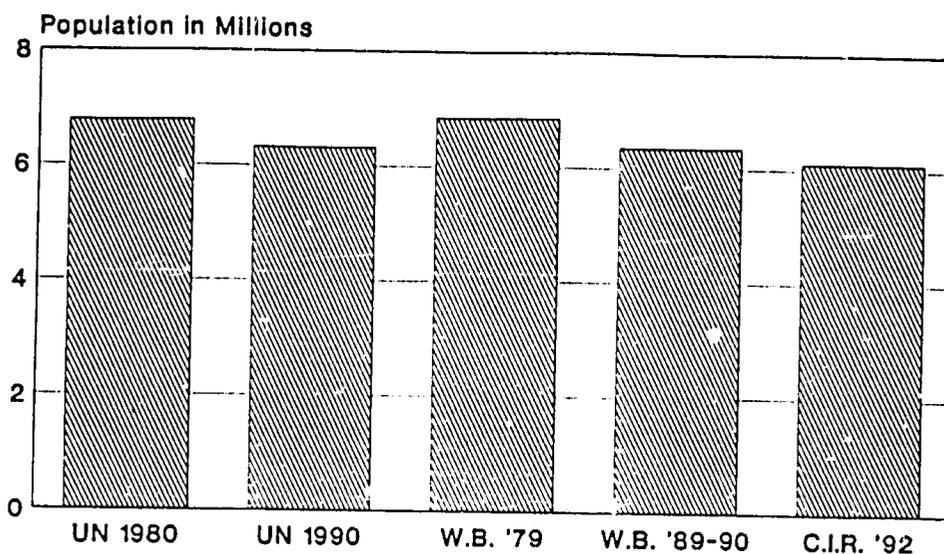
**Table 2. Total Fertility Rate: Estimates and Projections**

<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	5.6	4.5	3.9	3.3	2.9
United Nations (1990)	5.0	4.3	3.5	2.6	2.2
World Bank (1979)		4.5	4.0	3.3	2.9
World Bank (1989-90)		4.3	3.5	2.6	2.3
Center for International Research (1992)	5.5	4.0	3.2	2.5	2.2

### Total Fertility Rates: Survey Results

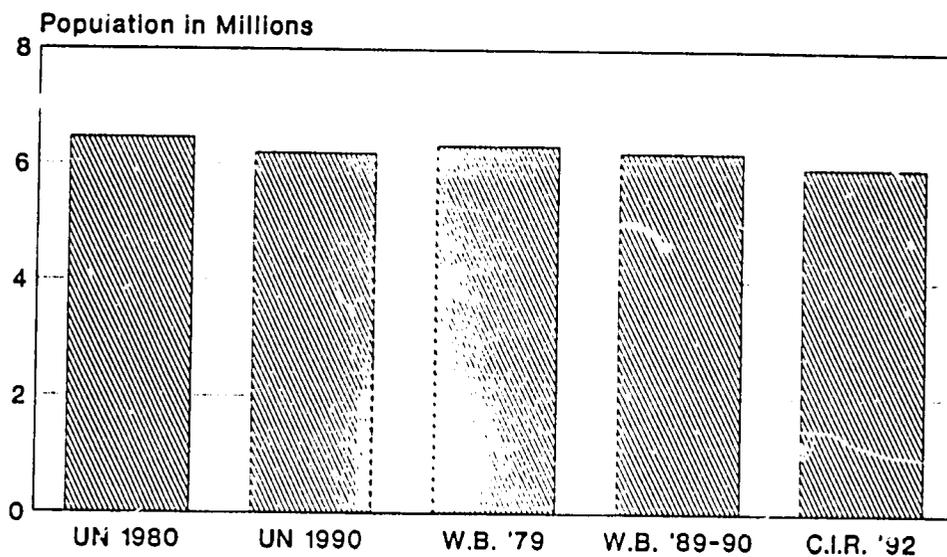
<u>Source</u>	<u>Reference Year of Survey Estimate:</u>			
	<u>1971/75</u>	<u>1978</u>	<u>1981</u>	<u>1985/8</u>
World Fertility Survey (1975)	4.6			
Contraceptive Prevalence Survey (1978)		3.8		
Contraceptive Prevalence Survey (1981)			3.9	
Demographic and Health Survey (1987)				2.2

Figure 1: Population Ages 5-9  
THAILAND, 1990  
Various Sources



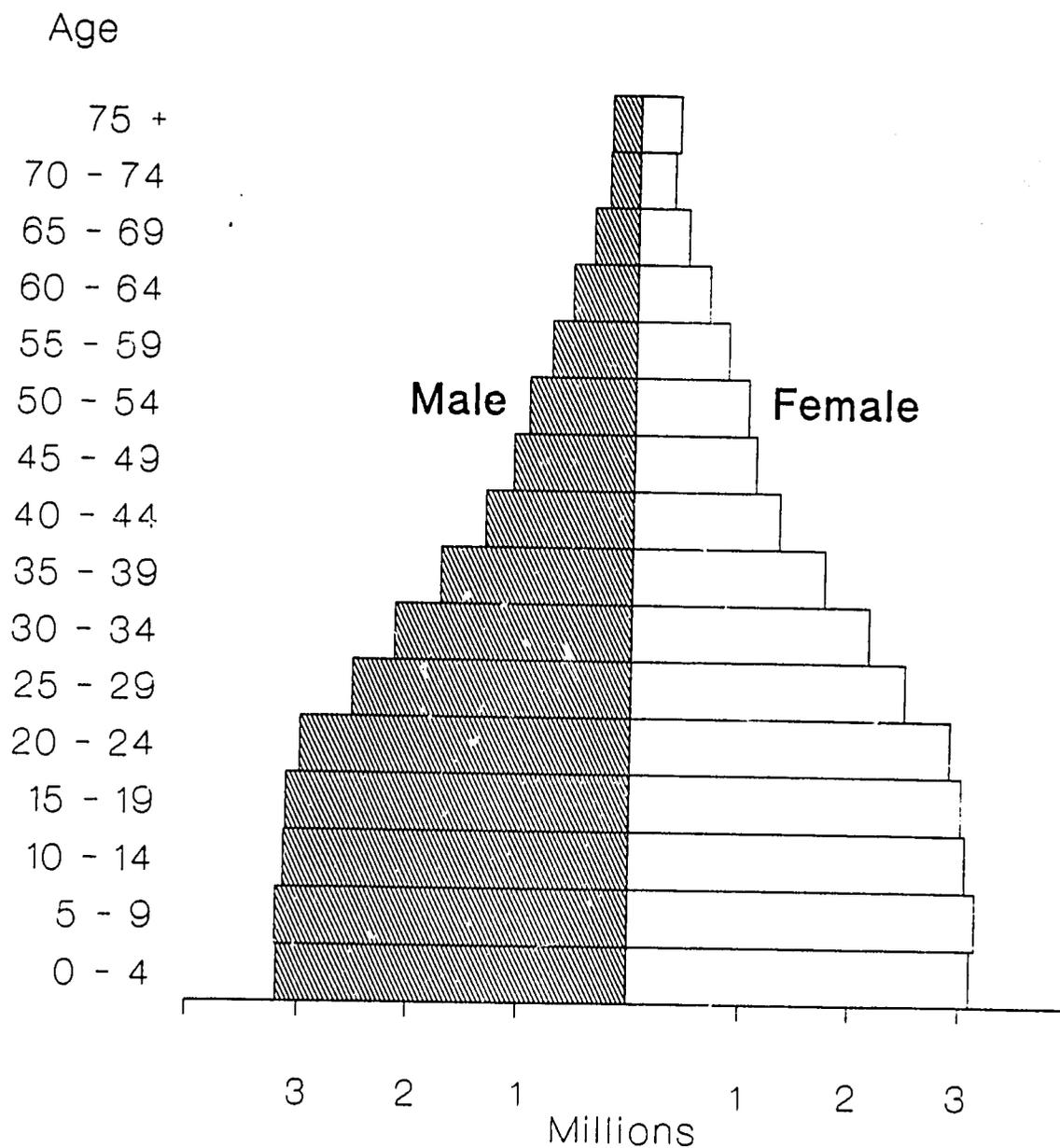
W.B.: World Bank  
C.I.R.: U.S. Census Bureau

Figure 2: Population Ages 10-14  
THAILAND, 1990  
Various Sources



W.B.: World Bank  
C.I.R.: U.S. Census Bureau

# Figure 3: Thailand Population by Age and Sex 1989



Source: Official Government Estimate  
from UN Demographic Yearbook 1990

## **TURKEY**

### **EXECUTIVE SUMMARY**

**Recommendation:**

**The 1992 Census Bureau figures should be used because they were produced after the 1990 Census.**

**Extreme Range of Past and Current Estimates for 1990 School-Age Population, 5-14:**

**11,541,000 (World Bank 1979) - 13,457,000 (Census Bureau 1992)**

**16.6 percent**

**Extreme Range of 2000 Projection:**

**12,386,000 (UN 1990 "Low") - 14,843,000 (World Bank 1989-90)**

**19.8 percent**

**Probable Trend in the School-Age Population to 2000:**

**The school-age population should begin a decline by the first decades of the 21st century.**

## 1. Age-Sex Distribution.

Turkey is distinguished by having a very well developed national statistics system. Censuses are taken every five years, and the data are used as the basis for the United Nations and World Bank projections.

Unlike many of the other recent censuses in developing countries, Turkey's 1990 census actually came in between 0.5 and 1 million over the previous estimates of the UN and World Bank. Only the Census Bureau's 1992 figures account for Turkey's recent census, adjusting the census figure upwards slightly to 57 million to account for underenumeration.

Turkey's population pyramid (Figure 3) for 1985 shows a dramatic decrease in the number of 0-4 year olds, suggesting an abrupt decline in fertility. However, survey data does not support this conclusion, leading us to believe that there must have been significant underenumeration in the youngest age groups.

## 2. Fertility Trends.

Turkey has been a pioneer in family planning, with a program which is particularly notable for its innovative information, education and communication (IEC) campaigns. Turkey began to make the transition to lower fertility rates in the late 1970s. This transition was quite rapid in the mid-1980s, declining from 4.1 to 3.4 births per woman. The three major projection series have done a reasonably good job tracking the change -

- aside from the WB '79 series, none of them are off by more than 1 million on the total count for 1990.

The UN projects further declines in fertility, falling to below replacement level sometime between 2000 (in the "low" series) and 2010 (in the "medium" series).

### 3. Projections for 2000.

School age populations are likely to begin to decrease by the beginning of the next century. Until the age-sex distribution is available for the 1990 census, we would recommend using the Census Bureau's 1992 series for current school-age population estimates as well as projections to the year 2000.

**TURKEY**

**Table 1.**

**Population by Age and Sex, Various Sources (in thousands)**

<u>Age Groups</u>	<u>United Nations 1980 Assessment</u>		<u>United Nations 1990 Assessment</u>		<u>World Bank '79</u>		<u>World Bank '89-'90</u>		<u>U.S. Census Bureau (1992 Series)</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
<b>1985</b>										
ALL AGES	25,824	25,266	25,892	24,453	24,668	24,352	25,530	24,780		
5 - 9	3,292	3,199	3,000	2,851	2,824	2,728	2,958	2,889		
10 - 14	2,866	2,836	3,069	2,887	3,171	3,076	3,026	2,926		
<b>1990</b>										
ALL AGES	28,935	28,402	28,677	27,191	27,130	26,803	28,405	27,585	28,949	28,181
5 - 9	3,645	3,335	3,247	3,145	3,063	2,951	3,197	3,182	3,565	3,453
10 - 14	3,274	3,185	2,981	2,837	2,810	2,717	2,939	2,872	3,267	3,172
<b>1995</b>										
ALL AGES	32,119	31,616	31,533	30,044	29,693	29,349	31,401	30,530		
5 - 9	3,895	3,773	3,575	3,456	3,219	3,097	3,678	3,566		
10 - 14	3,628	3,523	3,229	3,132	3,050	2,941	3,180	3,168		
<b>2000</b>										
ALL AGES	35,225	34,767	34,119	32,670	32,199	31,844	34,230	33,330	35,217	34,407
5 - 9	4,007	3,877	3,712	3,591	3,354	3,224	3,875	3,748	3,856	3,717
10 - 14	3,881	3,763	3,558	3,445	3,208	3,089	3,664	3,556	3,748	3,622

**MOST RECENT CENSUSES**

<u>Age Groups</u>	<u>Census of 1980</u>		<u>Census of 1985</u>		<u>Census of 1990</u>
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
ALL AGES	23,067	21,670	25,672	24,992	56,473
5 - 9	3,040	2,856	3,457	3,282	
10 - 14	2,851	2,610	3,211	2,983	

# TURKEY

**Table 2. Total Fertility Rate: Estimates and Projections**

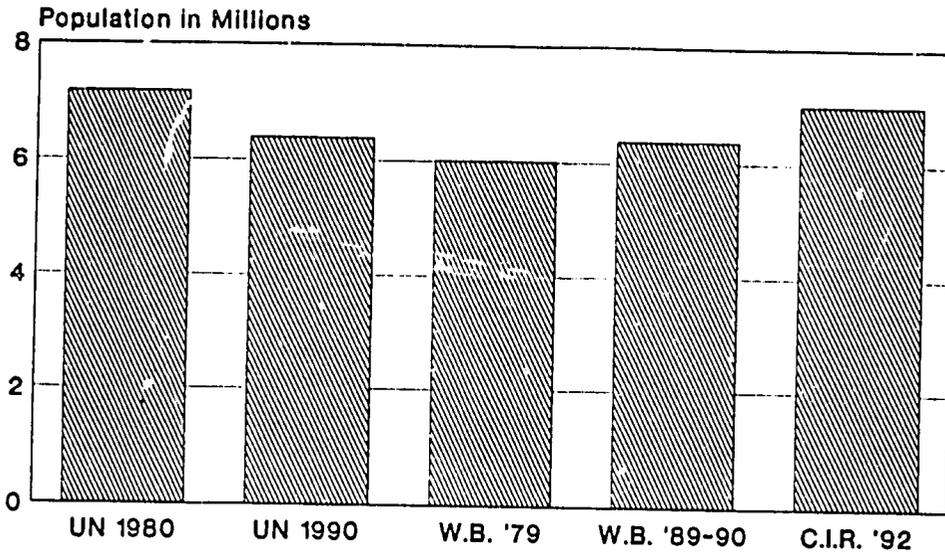
<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	5.3	5.0	4.5	4.0	3.6
United Nations (1990)	5.0	4.5	4.1	3.7	3.3
World Bank (1979)		4.3	3.9	3.5	3.1
World Bank (1989-90)		4.3	4.1	3.8	3.4
Center for International Research (1992)			4.4	3.8	3.4

## Total Fertility Rates: Survey Results

<u>Source</u>	<u>Reference Year of Survey Estimate:</u>		
	<u>1974/78</u>	<u>1983</u>	<u>1988</u>
World Fertility Survey (1978)	4.5		
Turkish Population and Health Survey (1983)		4.1	
Turkish Population and Health Survey (1988)			3.4

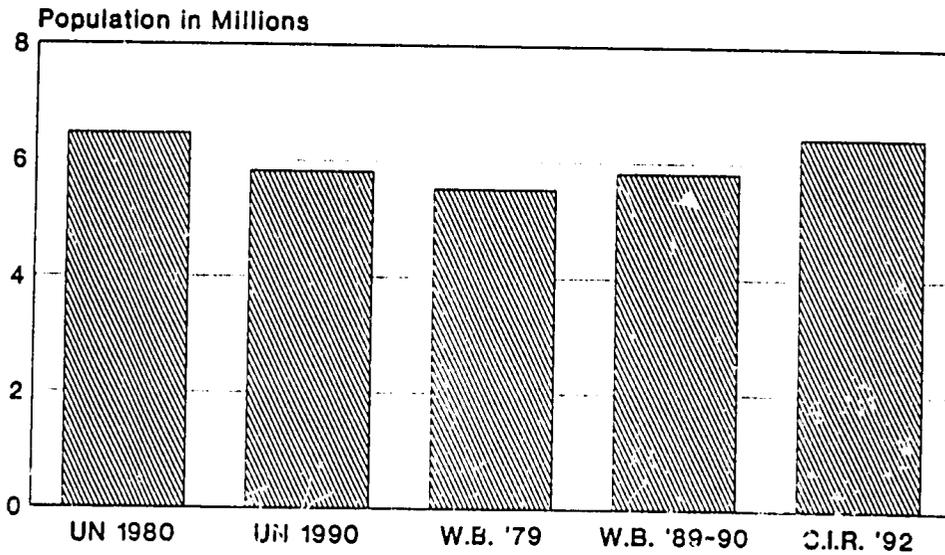
88

Figure 1: Population Ages 5-9  
TURKEY, 1990  
Various Sources



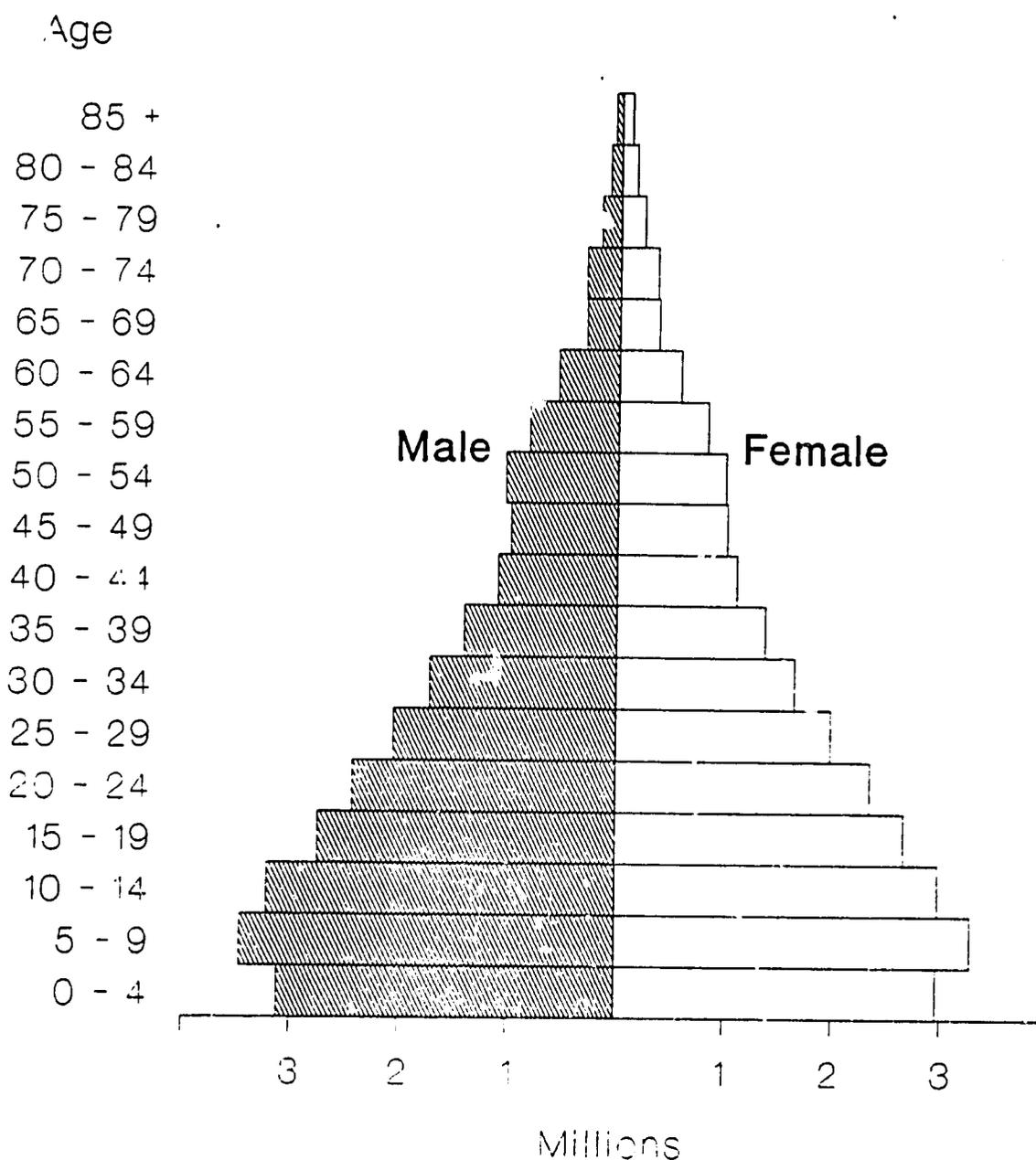
W.B.: World Bank  
C.I.R.: U.S. Census Bureau

Figure 2: Population Ages 10-14  
TURKEY, 1990  
Various Sources



W.B.: World Bank  
C.I.R.: U.S. Census Bureau

# Figure 3: Turkey Population by Age and Sex 1985



Source: 1985 Census

## **UGANDA**

### **EXECUTIVE SUMMARY**

#### **Recommendation:**

**The current World Bank series is recommended as a provisional estimate since it is closer to, although higher than, the 1991 Census.**

**Extreme Range of Past and Current Estimate for 1990 School-Age Population, Ages 5-14:**

**4,975,000 (WB 1989-90) -- 5,404,000 (UN 1990 "medium")**

**Percent Difference of Range: 8.6**

#### **Provisional 2000 Projection:**

**6,961,000 (WB 1989-90)**

**Percent Difference of Range: n.a.**

**Probable Trend in the School-Age Population to 2000:**

**Rapid growth in school-age populations is expected; AIDS is likely to reduce potential school-age population by not more than 5 percent.**

## 1. Age-Sex Distribution.

The age-sex structure of Uganda is typical for that of a country with very high fertility. Women in Uganda are believed to have averaged over seven children each for the past several decades. At present, contraceptive use is very low, with only about 3 percent of couples practicing a form of modern family planning. It is likely that school-age populations will grow rapidly well into the future.

As is the case in many Sub-Saharan African countries, the prevalence of AIDS is a new factor which will affect future population growth. Until recently, however, there was little data available to incorporate in population projections on the possible effect of AIDS. As a result, published projections in the standard sources have not attempted to account for AIDS-related deaths.

Recent studies by the CIR and researchers such as Bongaarts, May and Stover have begun to describe the likely effect of AIDS on growth. A 1987/1988 seroprevalence study in Uganda estimated a nationwide level of 9.4 percent prevalence among adults and about 17 percent in Kampala, the largest city. About 1.0 to 1.5 million people are thought to be currently affected. Although AIDS prevalence is rising, it is also believed to be subject to a "plateau" effect. This results from the fact that AIDS levels are likely to stabilize once high-risk groups are saturated. Prostitutes, for example, are likely to have prevalence rates as high as 80 percent. But the majority of the national population is in lower-risk groups. Although many new cases are expected, the AIDS population will also experience loss in numbers due to deaths and ultimately stabilize in size. In many cities, this may already have happened. The current thinking on the level of the plateau is about

20 percent.

AIDS modelling performed by the CIR<sup>1</sup> project an increase of AIDS-infected persons in Sub-Saharan Africa to about 70 million by 2015, up from about 5-10 million today. But, even by 2015, the total reduction in population size for Sub-Saharan Africa is about 500,000. According to these studies, early conjecture that growth rates in Africa would turn negative are unwarranted.

Uganda, however, is one of the most severely affected African countries. Models developed by May and Stover<sup>2</sup> project that the overall annual rate of population growth in Uganda will be lowered by a full percentage point between today and 2020. They estimate that the number of deaths in Uganda could have reached 500,000 up to this point.

The 1991 Census of Uganda returned a low count of 16.6 million, adding some credence to the idea that AIDS mortality is at work. Previous estimates of Uganda's 1991 population were just under 20 million. As always, however, caution must be observed in interpreting a low census count as proof of a given level of AIDS mortality.

Given the complexities discussed above, it is evident that selecting a range of estimates for Uganda's school-age population is especially difficult. It is likely that all projections have overestimated the country's population. Without performing new projections, fixing the present size of the population is not feasible. However, in order to

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<sup>1</sup>Way, Peter O. and Karen Stanecki. The Demographic Impact of AIDS in Sub-Saharan Africa. Center for International Research, U.S. Bureau of the Census, 1991.

<sup>2</sup>May, John F. and John Stover. The Impact of HIV/AIDS on Population Growth in Central Africa: The Cases of Uganda and Rwanda. Paper presented at the 1992 Annual Meeting of the Population Association of America, Denver, Colorado.

illustrate the range of difference that has been projected, it is useful to compare the highest numbers projected, those of the UN's 1990 Assessment, 5,404,000 to the lowest, those of the World Bank, 4,975,000. Both of these projections are probably too high, particularly in light of the low 1991 Census count. In addition, levels of infant AIDS infection have been estimated at 10 percent in urban areas. Given the low infection levels in rural areas and the high proportion Uganda's rural population (90 percent), infant and child mortality from AIDS has almost certainly been quite low to date.

## 2. Fertility Trends.

All projections show a high degree of agreement on Uganda's fertility level. A TFR over seven children per woman is used by all organizations and was also measured in Uganda's first fertility survey in 1989 (see Table 2). Although the government has a stated policy that fertility is too high, there is no evidence of the onset of a decline. The future course of Uganda's fertility will have a very large effect on future school-age populations, given its very high initial level.

## 3. Range of Projections in 2000.

Population projections for Uganda are in serious need of revision. If mortality of infants and children increase by about 5 to 10 percent, as is likely, school-age populations will be decreased by that amount. The use of existing projections to establish a fixed

range is not warranted at this point. For illustrative purposes, the current World Bank projections are shown. These projections are the lowest of the current series and are somewhat more in line with the 1991 Census.

**UGANDA**

**Table 1.**

**Population by Age and Sex, Various Sources (in thousands)**

<u>Age Groups</u>	<u>United Nations 1980 Assessment</u>		<u>United Nations 1990 Assessment</u>		<u>World Bank '79</u>		<u>World Bank '89-'90</u>		<u>U.S. Census Bureau (1992 Series)</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
<b>1985</b>										
ALL AGES	7,673	7,805	7,753	7,893	7,732	7,721	7,265	7,415		
5 - 9	1,155	1,148	1,205	1,202	1,151	1,145	1,146	1,144		
10 - 14	952	950	976	975	955	954	937	935		
<b>1990</b>										
ALL AGES	9,064	9,199	9,324	9,471	8,900	8,913	8,664	8,815	8,974	9,042
5 - 9	1,379	1,368	1,531	1,526	1,359	1,349	1,363	1,359	1,398	1,384
10 - 14	1,134	1,130	1,174	1,173	1,130	1,126	1,128	1,125	1,161	1,145
<b>1995</b>										
ALL AGES	10,710	10,845	11,258	11,408	10,146	10,174	10,161	10,306		
5 - 9	1,652	1,636	1,856	1,845	1,450	1,437	1,690	1,678		
10 - 14	1,358	1,350	1,496	1,493	1,338	1,330	1,344	1,339		
<b>2000</b>										
ALL AGES	12,631	12,764	13,404	13,554	11,505	11,548	11,853	11,986	12,855	12,947
5 - 9	1,933	1,910	2,254	2,235	1,545	1,527	1,823	1,810	2,128	2,115
10 - 14	1,631	1,618	1,819	1,810	1,430	1,419	1,670	1,658	1,752	1,742

**MOST RECENT CENSUS**

<u>Census of 1991</u>	
<u>Age Groups</u>	<u>Total</u>
ALL AGES	16,583
5 - 9	
10 - 14	

## UGANDA

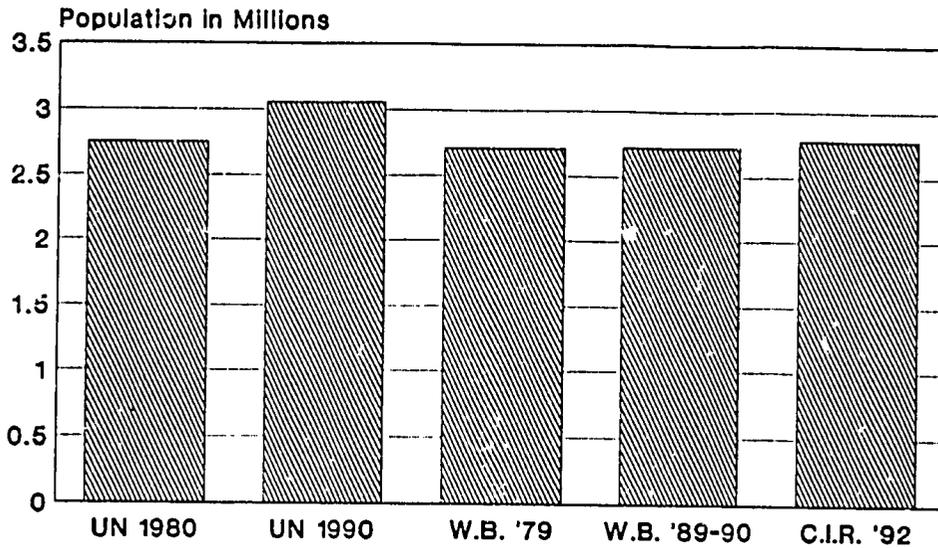
**Table 2. Total Fertility Rate: Estimates and Projections**

<u>Source</u>	<u>1970-75</u>	<u>1975-80</u>	<u>1980-85</u>	<u>1985-90</u>	<u>1990-95</u>
United Nations (1980)	6.1	6.1	6.1	6.1	5.9
United Nations (1990)	7.0	7.2	7.3	7.3	7.3
World Bank (1979)		6.1	6.1	5.5	4.8
World Bank (1989-90)		7.3	7.3	7.3	7.3
Center for International Research (1992)			7.4	7.4	7.2

### Total Fertility Rates: Survey Results

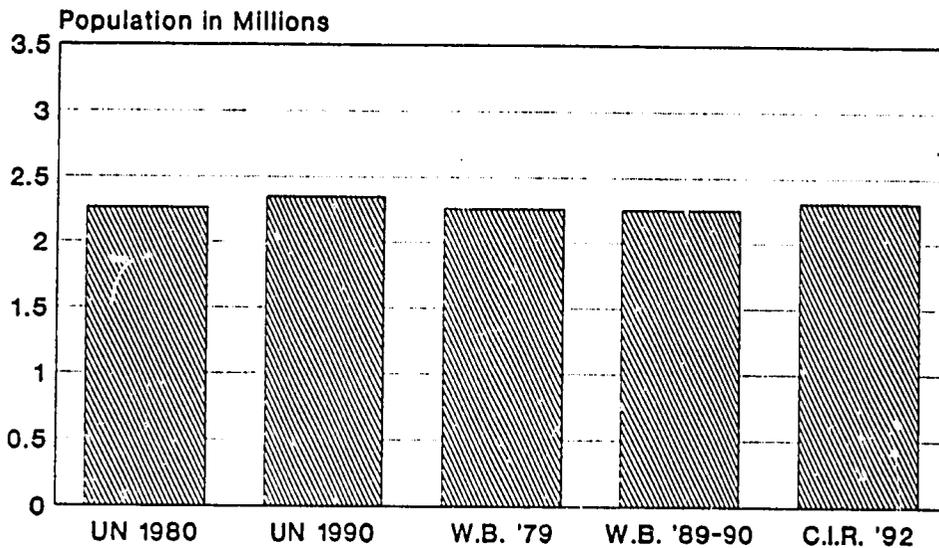
<u>Reference Year of Survey Estimate:</u>	
<u>Source</u>	<u>1987/89</u>
Demographic and Health Survey (1989)	7.2

Figure 1: Population Ages 5-9  
 UGANDA, 1990  
 Various Sources



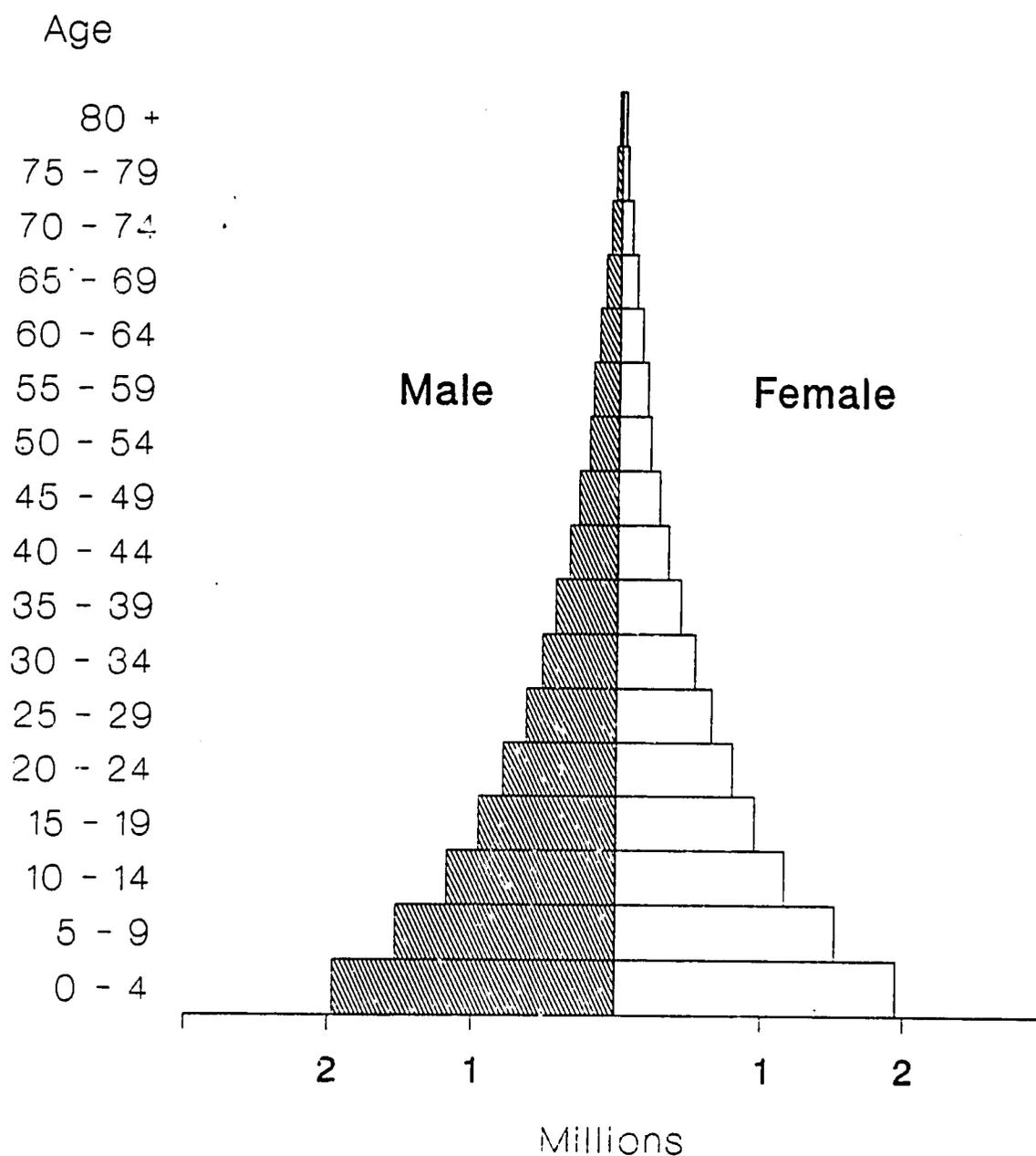
W.B.: World Bank  
 C.I.R.: U.S. Census Bureau

Figure 2: Population Ages 10-14  
 UGANDA, 1990  
 Various Sources



W.B.: World Bank  
 C.I.R.: U.S. Census Bureau

# Figure 3: Uganda Population by Age and Sex 1990



Source: UN Estimate 1990