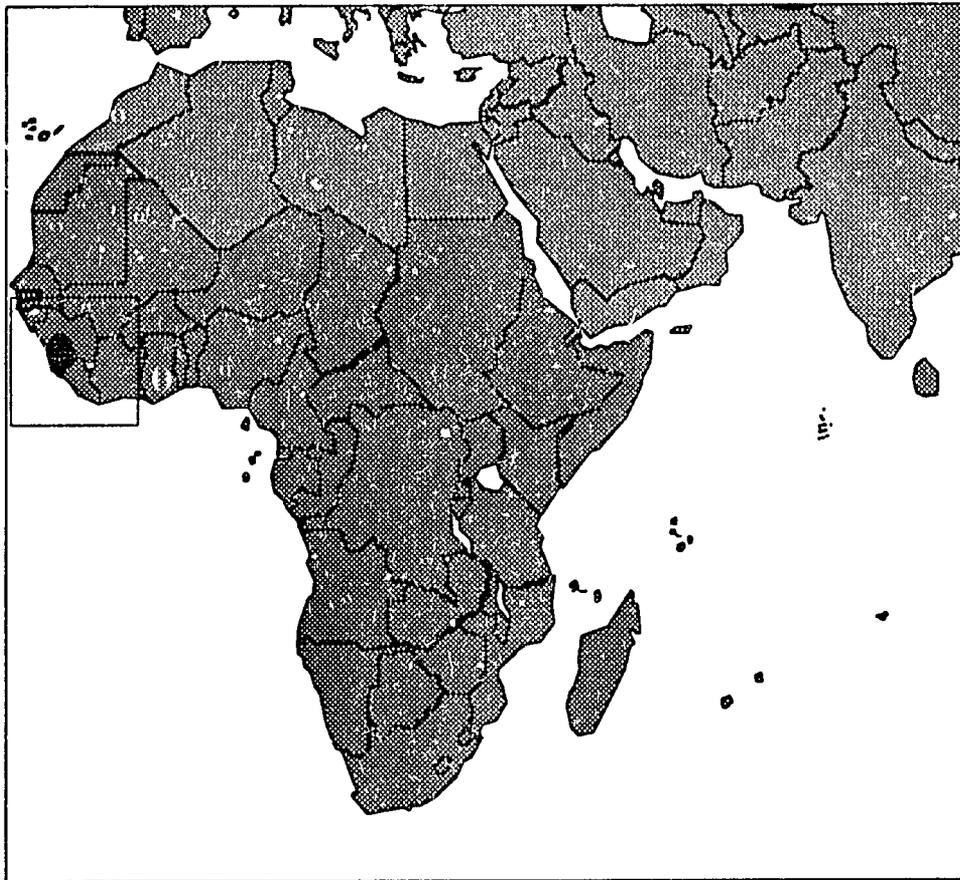


PR 10/11/94
10/11/94

Country Health Profile

SIERRA LEONE

Health Situation & Statistics Report 1994



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The Center for International Health Information (CIHI), a project managed by Information Management Consultants, Inc. (IMC), prepared this document under the Data for Decision Making Project, #936-5991.05 (CIHI-II), contract number HRN-5991-C-00-3041-00, with the Office of Health and Nutrition, Center for Population, Health and Nutrition, Bureau for Global Programs, Field Support and Research, U.S. Agency for International Development (USAID).

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SIERRA LEONE

Country Health Profile

This is one of a series of Country Health Profiles produced by the Center for International Health Information (CIHI). Each profile contains descriptive information and tables on the country's health and demographic characteristics, health indicators and trends, and when available, the health care system. Profile information is compiled from CIHI's databases and reference library, as well as through research and analysis of other data sources and reports.

The profiles are intended to provide current and trend data in a concise format for policy and decision-making, planning and evaluation, and monitoring of health status for use by individuals and organizations. Contact CIHI at the address on the preceding page for information on the availability of other health profiles and standard reports.

This profile contains national level health and demographic statistics available in CIHI's databases as of the date noted in each section. In order to enable CIHI to report the most current health and demographic statistics, please provide any more recent or more accurate data by contacting the center at the address on the previous page or through USAID, Office of Health and Nutrition, Center for Population, Health and Nutrition, Bureau for Global Programs, Field Support and Research.

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** Sources in this profile are referred to by a seven-digit code. Generally, the first three letters refer to an organization, agency, etc., and the first two numbers indicate the year of the publication or other source document. A complete list of sources appears at the end of the profile.*

I: HEALTH & DEMOGRAPHIC OVERVIEW

Current Demographic and Health Indicators

JULY 1994

Demographic Indicators			
INDICATOR	VALUE	YEAR	SOURCE
Total Population	4,504,400	1993	UNP9200
Urban Population	1,563,600	1993	UNP9200
Women Ages 15-49	1,024,800	1993	UNP9200
Infant Mortality	203	1993	WBK9302
Under 5 Mortality	358	1993	WBK9302
Maternal Mortality	NA		
Life Expectancy At Birth	43	1993	UNP9200
Number of Births	215,734	1993	UNP9200
Annual Infant Deaths	43,816	1993	CALXX01
Total Fertility Rate	6.5	1993	UNP9200

Child Survival Indicators			
INDICATOR	PERCENT	YEAR	SOURCE
Vaccination Coverage			
BCG	87	1992	WHE9401
DPT 3	64	1992	WHE9401
Measles	61	1992	WHE9401
Polio 3	64	1992	WHE9401
Tetanus 2	80	1992	WHE9401
DPT Drop Out	NA		
Oral Rehydration Therapy			
ORS Access Rate	55	1991	WHD9201
ORS and/or RHF Use	60	1991	WHD9201
Contraceptive Prevalence			
Modern Methods (15-44)	NA		
All Methods (15-44)	NA		
Nutrition			
Adequate Nutritional Status	62	1978	WHA7813
Appropriate Infant Feeding	NA		
A) Exclusive Breastfeeding	NA		
B) Complementary Feeding	NA		
Continued Breastfeeding	NA		

Other Health Indicators			
INDICATOR	PERCENT	YEAR	SOURCE
HIV-1 Seroprevalence			
Urban	4	1991	BUC9200
Rural	NA		
Access to Improved Water			
Urban	33	1991	JMP9301
Rural	37	1991	JMP9301
Access to Sanitation			
Urban	92	1991	JMP9301
Rural	49	1991	JMP9301
Deliveries/Trained Attendants	NA		

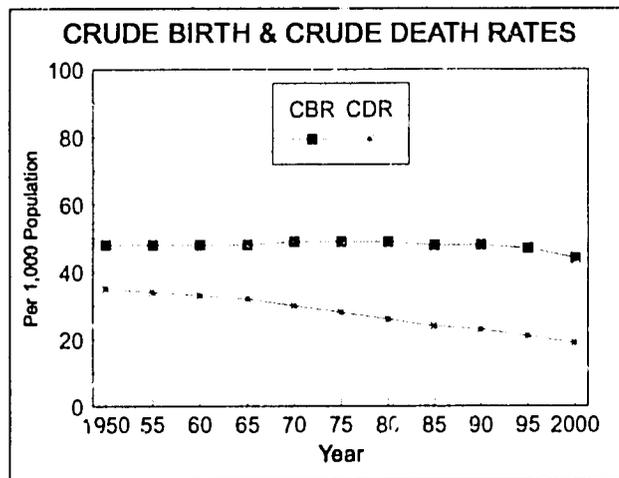
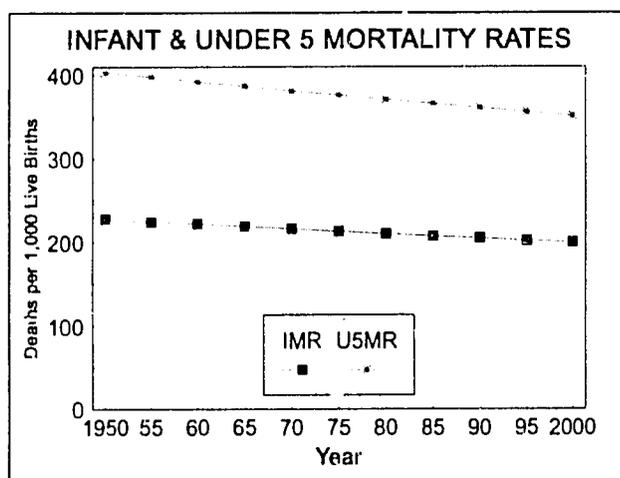
NA=Not available



Trends in Selected Demographic and Health Indicators

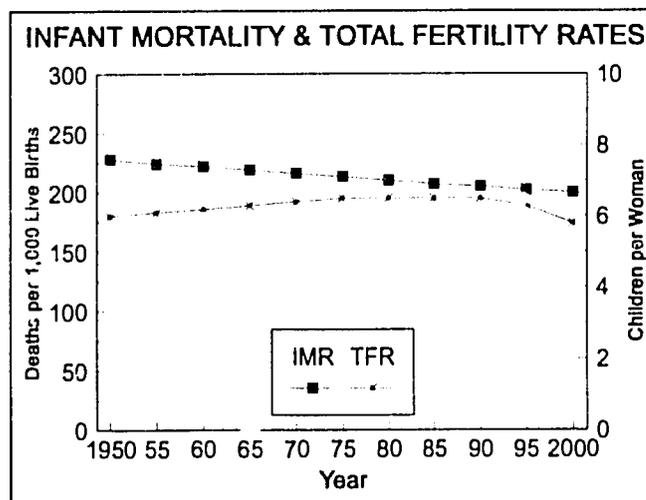
JULY 1994

INDICATOR	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	SOURCE
Infant Mortality	228	224	222	219	216	213	210	207	205	202	200	WBK9302
Under Five Mortality	403	398	392	387	381	376	371	366	361	356	351	WBK9302
Crude Birth Rate	48	48	48	48	49	49	49	48	48	47	44	UNP9200
Crude Death Rate	35	34	33	32	30	28	26	24	23	21	19	UNP9200
Avg. Annual Growth Rate	1	1	2	2	2	2	2	2	3	3	3	UNP9200
Total Fertility Rate	6.0	6.1	6.2	6.3	6.4	6.5	6.5	6.5	6.5	6.3	5.8	UNP9200



IMR and TFR

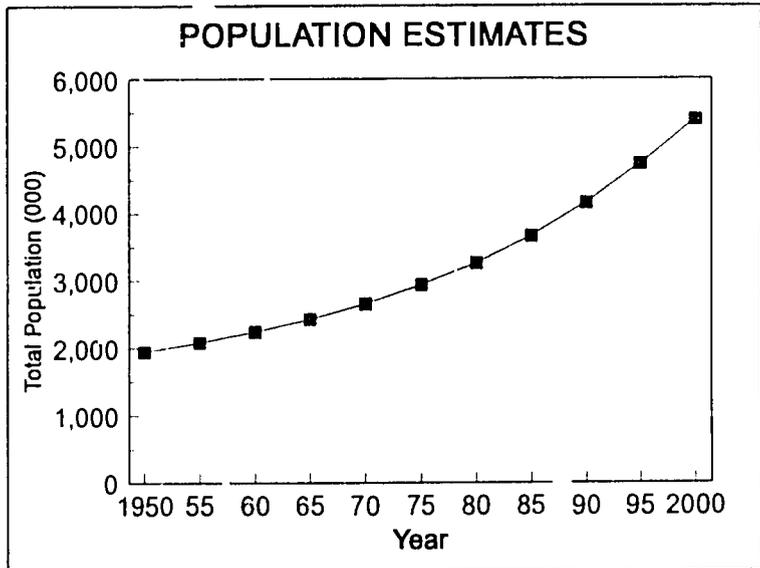
The relationship between IMR and TFR is currently a subject under review by the scientific community. While there is not conclusive evidence that the IMR and TFR are causally linked and necessarily decline together, there is empirical evidence for suspecting that such a reinforcing relationship exists as the pattern is observable in most countries.



Population Estimates/Pyramid

JULY 1994

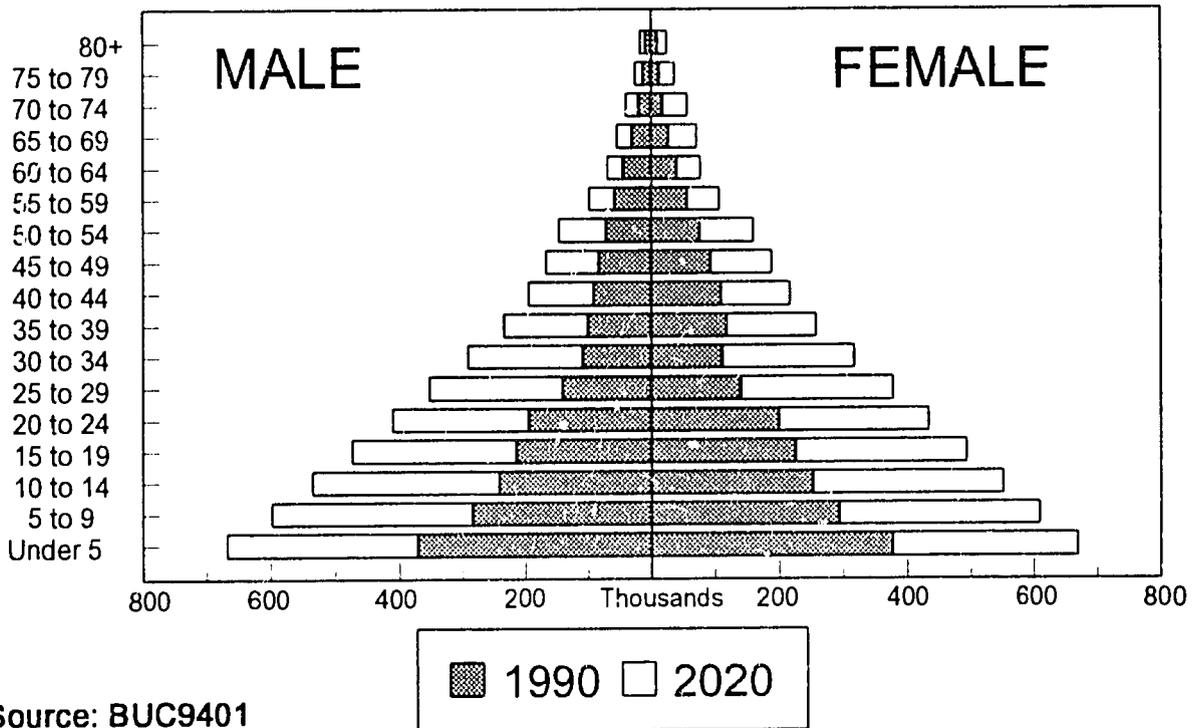
POPULATION ESTIMATES (000's)		
YEAR	VALUE	SOURCE
1950	1,944	UNP9200
1955	2,081	UNP9200
1960	2,241	UNP9200
1965	2,429	UNP9200
1970	2,656	UNP9200
1975	2,931	UNP9200
1980	3,263	UNP9200
1985	3,665	UNP9200
1990	4,151	UNP9200
1995	4,740	UNP9200
2000	5,395	UNP9200



CURRENT & PROJECTED POPULATION

By Age & Gender: 1990 - 2020

Total Population 1990: 4,230,240 Total Population 2020: 9,035,817



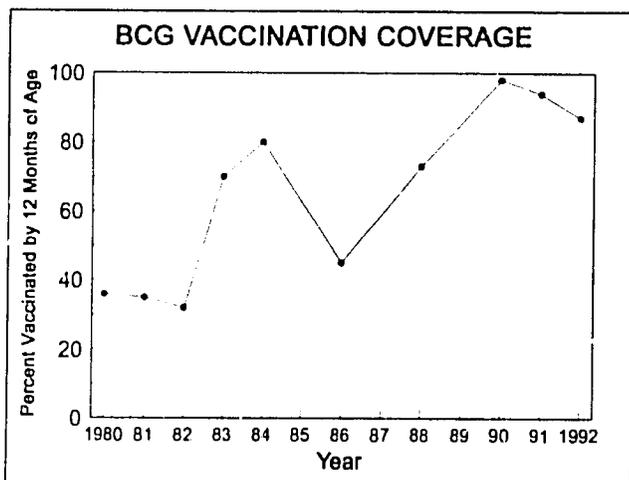
Source: BUC9401



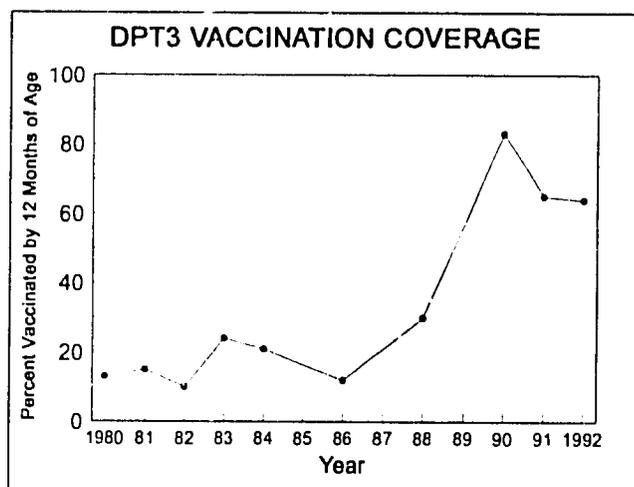
Trends in Selected Health and Child Survival Indicators

Vaccination Coverage Rates

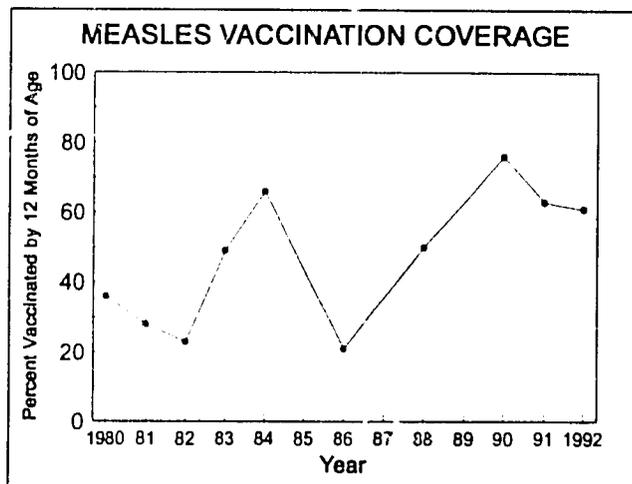
JULY 1994



BCG COVERAGE		
YEAR	PERCENT	SOURCE
1980	36	WHE8700
1981	35	WHE8700
1982	32	WHE8700
1983	70	WHE8700
1984	80	WHE8700
1985	NA	
1986	45	WHE8700
1987	NA	
1988	73	WHE8900
1989	NA	
1990	98	WHE9100
1991	94	WHE9202
1992	87	WHE9401

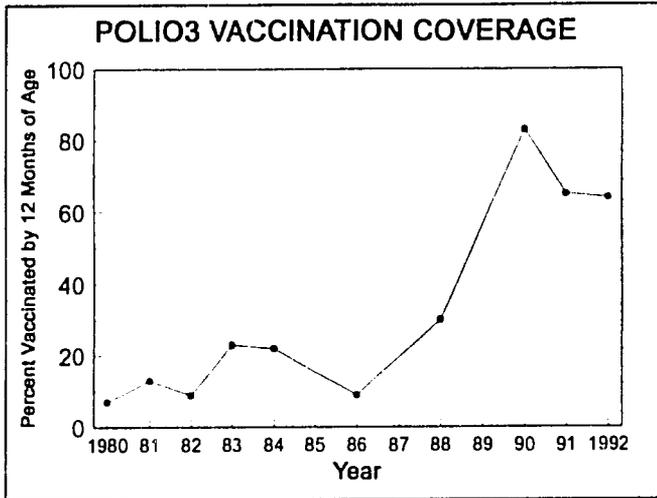


DPT3 COVERAGE		
YEAR	PERCENT	SOURCE
1980	13	WHE8700
1981	15	WHE8700
1982	10	WHE8800
1983	24	WHE8700
1984	21	WHE8700
1985	NA	
1986	12	WHE8700
1987	NA	
1988	30	WHE8900
1989	NA	
1990	83	WHE9100
1991	65	WHE9300
1992	64	WHE9401

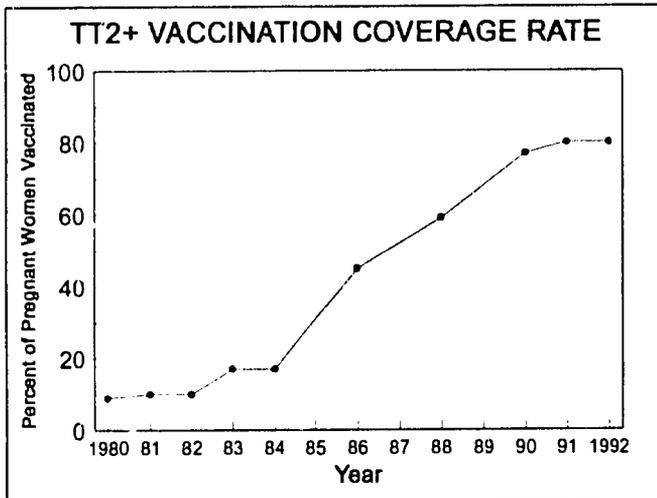


MEASLES COVERAGE		
YEAR	PERCENT	SOURCE
1980	36	WHE8700
1981	28	WHE8700
1982	23	WHE8700
1983	49	WHE8700
1984	66	WHE8700
1985	NA	
1986	21	WHE8700
1987	NA	
1988	50	WHE8900
1989	NA	
1990	76	WHE9200
1991	63	WHE9300
1992	61	WHE9401

Vaccination Coverage Rates, continued



POLIO3 COVERAGE		
YEAR	PERCENT	SOURCE
1980	7	WHE8700
1981	13	WHE8700
1982	9	WHE8700
1983	23	WHE8700
1984	22	WHE8700
1985	NA	
1986	9	WHE8700
1987	NA	
1988	30	WHE8900
1989	NA	
1990	83	WHE9100
1991	65	WHE9300
1992	64	WHE9401

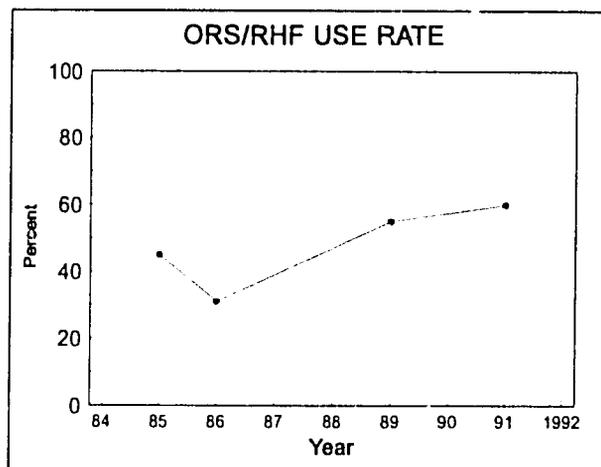
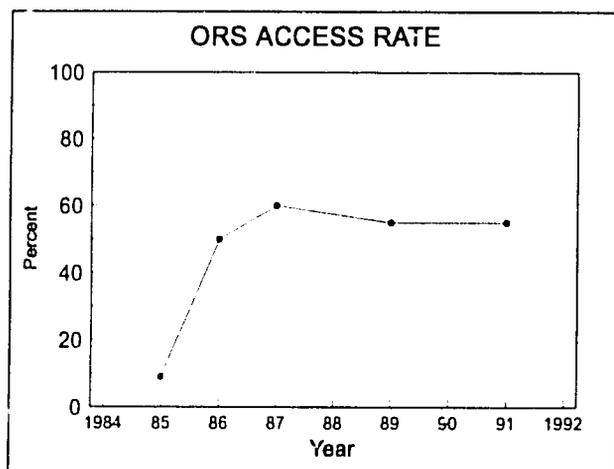


TT2+ COVERAGE		
YEAR	PERCENT	SOURCE
1980	9	WHE8700
1981	10	WHE8700
1982	10	WHE8700
1983	17	WHE8700
1984	17	WHE8700
1985	NA	
1986	45	WHE8700
1987	NA	
1988	59	WHE8900
1989	NA	
1990	77	WHE9100
1991	80	WHE9202
1992	80	WHE9401



ORS Access, ORS and/or RHF Use Rates

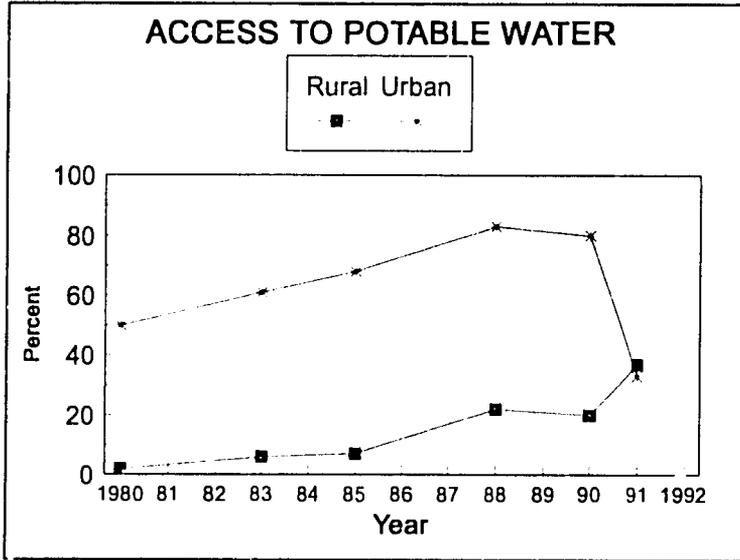
JULY 1994



INDICATOR	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
ORS Access	NA	9	50	60	NA	55	NA	55	NA	NA
Source		WHD8700	WHD8800	WHD8900		WHD9100		WHD9201		
ORS/RHF Use	NA	45	31	NA	NA	55	NA	60	NA	NA
Source		WHD8700	WHD8800			WHD9100		WHD9201		

Access to Potable Water

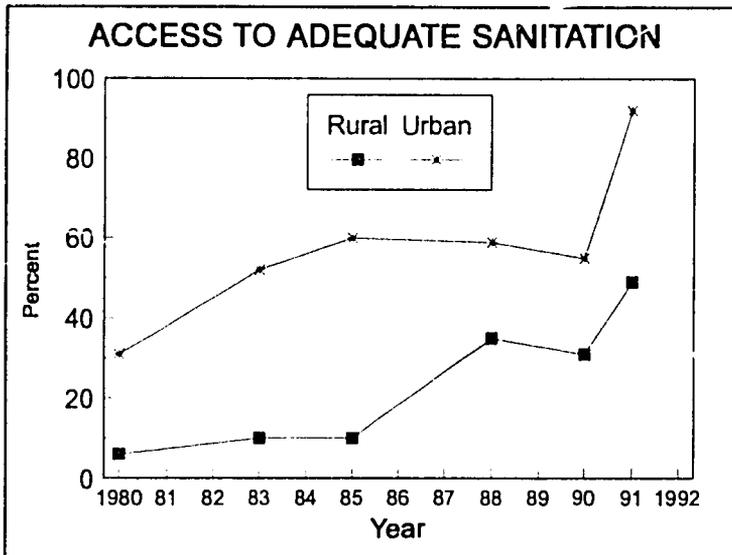
JULY 1994



YEAR	RURAL SOURCE	URBAN SOURCE
1980	2 WHO9101	50 WHO9101
1981	NA	NA
1982	NA	NA
1983	6 WHO9101	61 WHO9101
1984	NA	NA
1985	7 WHO9101	68 WHO9101
1986	NA	NA
1987	NA	NA
1988	22 WHO9101	83 WHO9101
1989	NA	NA
1990	20 WHO9200	80 WHO9200
1991	37 JMP9301	33 JMP9301
1992	NA	NA
1993	NA	NA

Access to Adequate Sanitation

JULY 1994

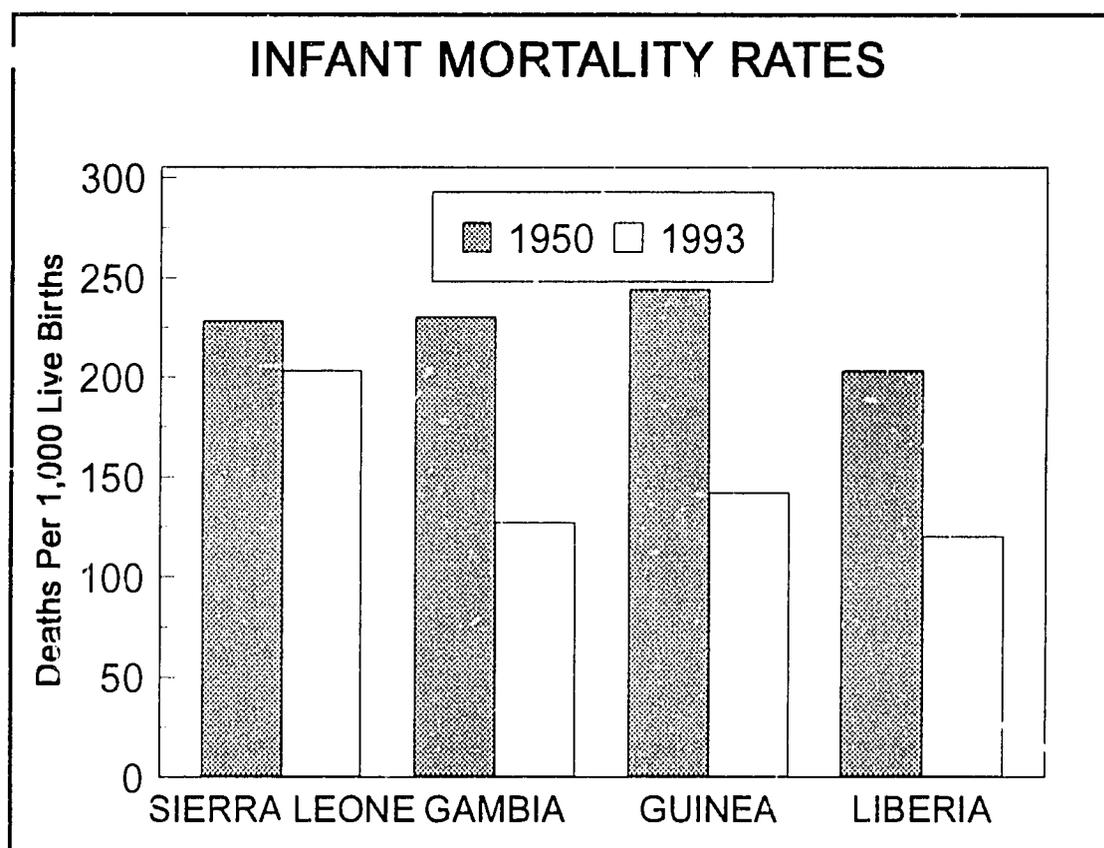


YEAR	RURAL SOURCE	URBAN SOURCE
1980	6 WHO9101	31 WHO9101
1981	NA	NA
1982	NA	NA
1983	10 WHO9101	52 WHO9101
1984	NA	NA
1985	10 WHO9101	60 WHO9101
1986	NA	NA
1987	NA	NA
1988	35 WHO9101	59 WHO9101
1989	NA	NA
1990	31 WHC9200	55 WHO9200
1991	49 JMP9301	92 JMP9301
1992	NA	NA
1993	NA	NA

COMPARATIVE INDICATORS

Comparative IMR Rates

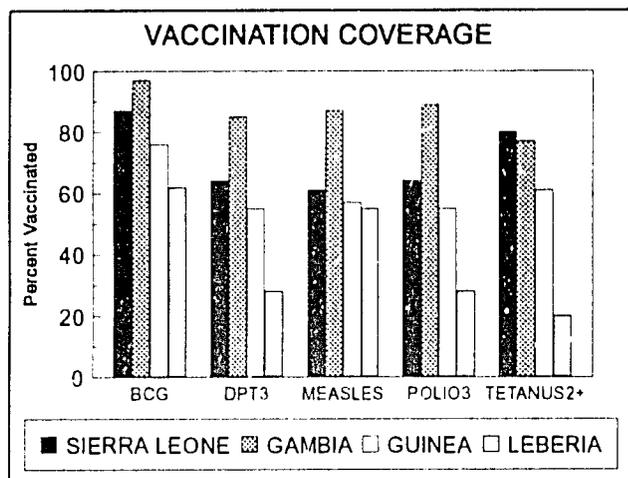
JULY 1994



COUNTRY	1950	SOURCE	1993	SOURCE
SIERRA LEONE	228	WBK9302	203	WBK9302
GAMBIA	230	BUC9302	127	BUC9302
GUINEA	244	BUC9302	142	BUC9302
LIBERIA	203	WBK9302	120	WBK9302

Comparative Vaccination Coverage Rates

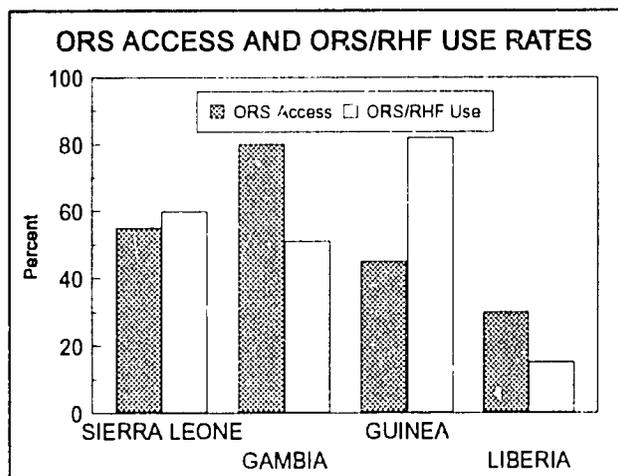
JULY 1994



COUNTRY	INDICATOR	YEAR	VALUE	SOURCE
SIERRA LEONE	BCG	1992	87	WHE9401
	DPT 3	1992	64	WHE9401
	Measles	1992	61	WHE9401
	Polio 3	1992	64	WHE9401
	Tetanus 2	1992	80	WHE9401
GAMBIA	BCG	1991	97	WHE9202
	DPT 3	1991	85	WHE9202
	Measles	1991	87	WHE9202
	Polio 3	1991	89	WHE9202
	Tetanus 2	1991	77	WHE9202
GUINEA	BCG	1993	76	WHE9401
	DPT 3	1993	55	WHE9401
	Measles	1993	57	WHE9401
	Polio 3	1993	55	WHE9401
LIBERIA	Tetanus 2	1993	61	WHE9401
	BCG	1988	62	WHE8900
	DPT 3	1989	28	WHE9200
	Measles	1989	55	WHE9200
LIBERIA	Polio 3	1988	28	WHE8900
	Tetanus 2	1988	20	WHE8900

Comparative ORS Access, ORS and/or RHF Use Rates

JULY 1994



COUNTRY	INDICATOR	YEAR	VALUE	SOURCE
SIERRA LEONE	ORS Access Rate	1991	55	WHD9201
	ORT Use Rate	1991	60	WHD9201
GAMBIA	ORS Access Rate	1993	80	WHD9401
	ORT Use Rate	1993	51	WHD9401
GUINEA	ORS Access Rate	1993	45	WHD9401
	ORT Use Rate	1993	82	WHD9401
LIBERIA	ORS Access Rate	1992	30	WHD9300
	ORT Use Rate	1992	15	WHD9300



II: DATA NOTES

JULY 1994

Notes On Mortality Estimation

Throughout this profile, references are made to infant and under 5 mortality rates for individual countries or groups of countries. In past years, the primary source of data on infant mortality was the World Population Prospects, a set of estimates updated every two years by the Estimates and Projections Section of the Population Division of the Department of International Economic and Social Affairs, United Nations. The primary source of data on under 5 mortality was a special report published in 1988 by the same group. Where another source, such as a recent Demographic and Health Survey or a national census, was available for a given country, the reported values from that source were cited in place of the United Nations estimates if the technical staff of USAID in the Country Mission and/or the appropriate regional bureaus confirmed the validity of the alternative source.

Known as indirect estimates, those of the United Nations are generated from accepted demographic models which combine the results of all available surveys and censuses in a given country to produce a single time series of estimates and projections. When new empirical data becomes available for a given country, the entire time series of estimates and projections is updated. Thus, using conventional demographic approaches, a survey done in 1990 may generate a new estimate of a mortality rate for 1970 or 1980.

During 1993, a new set of estimates for mortality was generated for 82 countries for publication in the World

Development Report 1993 and a forthcoming UNICEF publication entitled The Progress of Nations. Based on a curve-fitting model, the methodology applied to generate these new estimates purports to depict more accurately the trend derived from all available data sources for a country. Like the estimates generated using conventional demographic models, the entire time series might change upon the addition of a new empirical source. These estimates were made available to USAID through the courtesy of the World Development Report of the World Bank and UNICEF.

The selection of the mortality rates was done through a consultative process involving representatives of the Office of Health in USAID's Research and Development Bureau, USAID's Regional Bureaus and, in many cases, the USAID Country Missions. The source determined to best reflect the reality in a country for the current values of infant and under 5 mortality was identified and one of a number of computation procedures, depending on the source selected for the current value, was applied to estimate the longitudinal rates. The consideration of the additional source of data developed for the World Development Report and UNICEF during the consultative process has prompted some changes in the reporting of mortality rates from those reported in recent years.

Definitions

Demographic Indicators

Total Population: The mid-year estimate of the total number of individuals in a country.

Average Annual Rate of Growth: An estimate of the rate at which a population is increasing (or decreasing) in a given year.

Infant Mortality Rate: The estimated number of deaths in infants (children under age one) in a given year per 1,000 live births in that same year. This rate may be calculated by direct methods (counting births and deaths) or by indirect methods (applying well-established demographic models).

Under 5 Mortality Rate: The estimated number of children born in a given year who will die before reaching age five per thousand live births in that same year. This rate may also be calculated by direct or indirect methods.

Maternal Mortality Ratio: The estimated number of maternal deaths per 100,000 live births where a maternal death is one which occurs when a woman is pregnant or within 42 days of termination of pregnancy from any cause related to or aggravated by the pregnancy or its management. Although sometimes referred to as a rate, this measure is actually a ratio because the unit of measurement of the numerator (maternal deaths) is different than that of the denominator (live births). The measure would be a rate if the units were the same. Extremely difficult to measure, maternal mortality can be derived from vital registration systems (usually underestimated), community studies and surveys (requires very large sample sizes) or hospital registration (usually overestimated).

Crude Birth Rate: An estimate of the number of live births per 1,000 population in a given year.

Crude Death Rate: An estimate of the number of deaths per 1,000 population in a given year.

Life Expectancy At Birth: An estimate of the average number of years a newborn can expect to live. Life expectancy is computed from age-specific death rates for a given year. It should be noted that low life expectancies in developing countries are, in large part, due to high infant mortality.

Number of Births: An estimate of the number of births occurring in a given year.

Annual Infant Deaths: An estimate of the number of deaths occurring to children under age one in a given year.

Total Fertility Rate: An estimate of the average number of children a woman would bear during her lifetime given current age-specific fertility rates.

Child Survival Indicators

Vaccination Coverage In Children: An estimate of the proportion of living children between the ages of 12 and 23 months who have been vaccinated before their first birthday -- three times in the cases of polio and DPT and once for both measles and BCG. Vaccination coverage rates are calculated in two ways. Administrative estimates are based on reports of the number of inoculations of an antigen given during a year to children who have not yet reached their first birthday divided by an estimate of the pool of children under one year of age eligible for vaccination. Survey estimates are based on samples of children between the ages of 12 and 23 months.

Vaccination Coverage In Mothers: An estimate of the proportion of women in a given time period who have received two doses of tetanus toxoid during their pregnancies. This indicator is being changed in many countries to account for the cumulative effect of tetanus toxoid boosters. A woman and her baby are protected against tetanus when a mother has

had only one or, perhaps, no boosters during a given pregnancy so long as the woman had received the appropriate number of boosters in the years preceding the pregnancy in question. (The appropriate number of boosters required during any given pregnancy varies with number received previously and the time elapsed.) The revised indicator is referred to as TT2+. Rates are computed using administrative methods or surveys.

DPT Drop-out Rate: An estimate of the proportion of living children between the ages of 12 and 23 months who received at least one DPT vaccination but who did not receive the entire series of three vaccinations before their first birthdays.

Oral Rehydration Salts (ORS) Access Rate: An estimate of the proportion of the population under age five with reasonable access to a trained provider of oral rehydration salts who receives adequate supplies. This is a particularly difficult indicator to measure and, therefore, it may fluctuate dramatically from year to year as improved methods of estimation are devised.

ORS and/or Recommended Home Fluid (RHF) Use Rate: An estimate of the proportion of all cases of diarrhea in children under age five treated with ORS and/or a recommended home fluid. ORT use may be determined using administrative means or surveys. In general, administrative estimates are based on estimates of the number of episodes of diarrhea in the target population for a given year and the quantity of ORS available. Thus, changes in the estimates of the frequency of diarrhea episodes can alter the ORT use rate as well as "real" changes in the pattern of use. Surveys are more precise in that they focus on the actual behavior of mothers in treating diarrhea in the two-week period prior to the survey.

Contraceptive Prevalence Rate: An estimate of the proportion of women, aged 15 through 44 (or, in some countries, 15 through 49), in union or married, currently using a modern method of contraception. Where sources fail to distinguish modern and traditional methods, the combined rate is shown.

Adequate Nutritional Status: An individual child of a certain age is said to be adequately nourished if his/her weight is greater than the weight corresponding to "two Z-scores" (two standard deviations) below the median weight achieved by children of that age. The median weight and the distribution of weights around that median in a healthy population are taken from a standard established by the National Center for Health Statistics, endorsed by the World Health Organization (WHO). The indicator for the population as a whole is the proportion of children 12 through 23 months of age who are adequately nourished.

Appropriate Infant Feeding: A composite estimate of the proportion of infants (children under age one) being breastfed and receiving other foods at an appropriate age according to the following criteria: breastfed through infancy with no bottle-feeding, exclusively breastfed through four months (120 days) of age, and receiving other foods if over six months of age (181 days). Water is not acceptable in the first four months (120 days). ORS is considered acceptable at any age. Surveys are the only source of data to form this indicator. Surveys yield an estimate of how many infants are being fed correctly at the moment of the survey. They do not give an indication of the proportion of individual children fed appropriately throughout their first year of life. A number of sub-indicators may be calculated from the data used to form the composite, of which two are presented in this report.



Exclusive Breastfeeding: An estimate of the proportion of infants less than four months (120 days) of age who receive no foods or liquids other than breast milk.

Complementary Feeding: An estimate of the proportion of infants six to nine months of age (181 days to 299 days) still breastfeeding but also receiving complementary weaning foods.

Continued Breastfeeding: An estimate of the proportion of children breastfed for at least one year. In this report, all values presented for this indicator are the proportion of children 12 to 15 months of age at the time of the survey still receiving breast milk.

Other Health Indicators

HIV-1 Seroprevalence, Urban: An estimate of the proportion of all persons (pregnant women, blood donors, and other persons with no known risk factors) living in urban areas infected with HIV-1, the most virulent and globally prevalent strain of the human immunodeficiency virus.

HIV-1 Seroprevalence, Rural: An estimate of the proportion of all persons living in rural areas infected with HIV-1.

Access to Improved Water, Urban: An estimate of the proportion of all persons living in urban areas (defined roughly as population centers of 2,000 or more persons) who live within 200 meters of a stand pipe or fountain source of water.

Access to Improved Water, Rural: An estimate of the proportion of all persons not living in urban areas with a source of water close enough to home that family members do not spend a disproportionate amount of time fetching water.

Access to Sanitation, Urban: An estimate of the proportion of all persons living in urban areas with

sanitation service provided through sewer systems or individual in-house or in-compound excreta disposal facilities (latrines).

Access to Sanitation, Rural: An estimate of the proportion of all persons not living in urban areas with sanitation coverage provided through individual in-house or in-compound excreta disposal facilities (latrines).

Deliveries By Trained Attendants: An estimate of the proportion of deliveries attended by at least one physician, nurse, midwife, or trained traditional birth attendant.

III: SOURCES

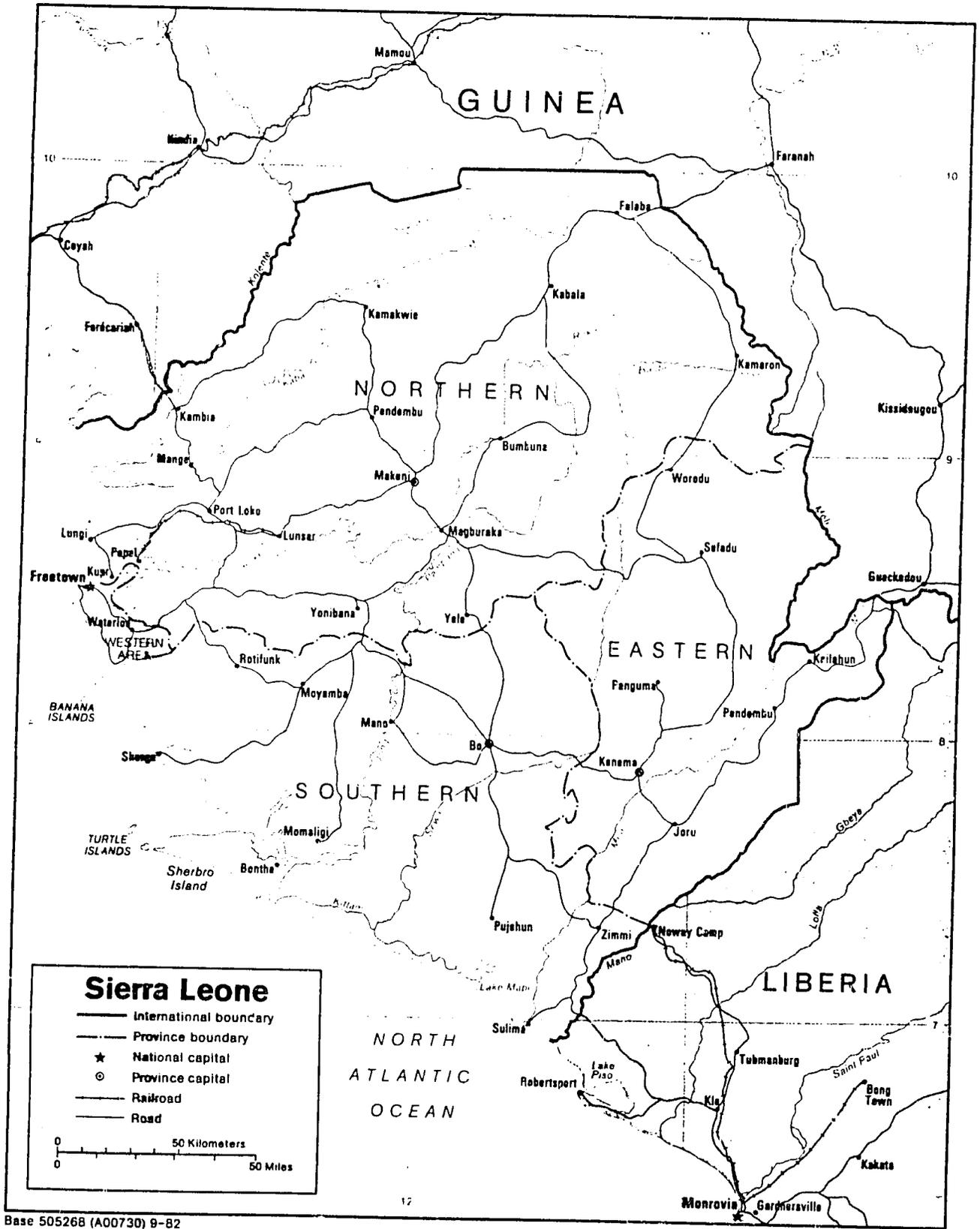
JULY 1994

- BUC9200 Health Studies Branch. Center for International Research. U.S. Bureau of the Census. HIV Seroprevalence Levels, November 1992.
- BUC9302 Time series estimates of Infant Mortality generated by applying the ratio of the BUCEN estimate for 1992 to the World Population Prospects estimate for 1992 to the annual values dating back to 1950 as estimated in the World Population Prospects. Under 5 Mortality estimates are calculated by applying the appropriate Coale-Demeny model to the Infant Mortality estimates.
- BUC9401 U.S. Bureau of the Census (BUCEN). International Data Base. Version dated March, 1994.
- CALXX01 Calculated from the values for total population, crude birth rate and infant mortality from designated sources for those variables.
- JMP9301 WHO/UNICEF Joint Monitoring Programme. Water Supply and Sanitation Sector Monitoring Report 1993. Sector Status as of December 1991. WHO and UNICEF. August, 1993.
- UNP9206 Department of International Economic and Social Affairs, United Nations. World Population Prospects 1992. (ST/ESA/SER.A/120) New York: UN, 1992.
- WBK9302 Mortality rate time series generated from Ken Hill equations provided in a personal communication, March, 1993. The equations were developed for the World Development Report, 1993 and a UNICEF publication, The Progress of Nations.
- WHA7813 Sierra Leone National Nutrition Survey.
Sierra Leone National Nutrition Survey.
- WHD8700 World Health Organization. Programme for Control of Diarrhoeal Diseases: Interim Programme Report 1986. (WHO/CDD/87.26) Geneva: WHO, 1987.
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