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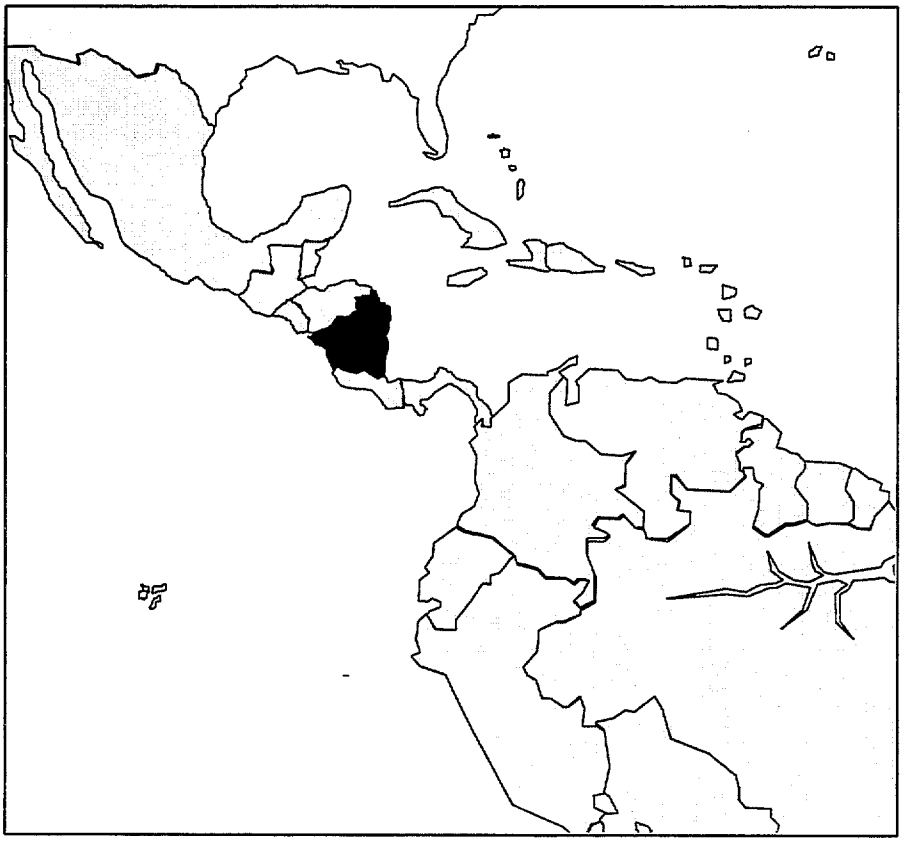
CIHI Country Health Profile Series

NICARAGUA

Health Statistics Report
1996



Center for International Health Information
1601 N. Kent Street, Suite 1014
Arlington, VA 22209

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The Center for International Health Information
1601 N. Kent Street, Suite 1014
Arlington, VA 22209
(703) 524 - 5225
FAX (703) 243 - 4669
E-Mail address: info@cihi.com
Internet address: www.cihi.com

NICARAGUA

Health Statistics Report

This is part of a series of Country Health Profiles produced by the Center for International Health Information (CIHI). Each profile provides quantitative data on current health and demographic conditions in a developing country. Profile information is compiled from CIHI's databases and reference library and through research and analysis of other data sources.

CIHI's Health Statistics Reports are intended to provide data in a concise format for individuals and organizations involved in health sector policy and decision-making. Contact CIHI at the address on the preceding page for information on the availability of country health profiles and health statistics reports, or look for these reports on the Internet at the following address: *www.cihi.com.*

In order to enable CIHI to report the most current health and demographic data, readers are encouraged to provide any more recent or more accurate information by contacting the center directly or through USAID's Office of Health and Nutrition.

EDITOR'S NOTES

1. ***Data Notes.*** *For definitions of indicators and commentary regarding their derivation, the reader is referred to Section II.*

2. ***References & Sources.*** *Sources in this profile are referred to by a seven-digit code. Generally, the first three letters refer to a source institution, the following two numbers refer to the year of publication or transmittal, and the final two numbers uniquely identify the individual source. A complete list of sources appears in Section III.*

3. ***Comparative Graphs and Tables.*** *Unless otherwise specified, indicator values for country groupings are median values for the countries in each aggregate grouping for which data are available. Regional groupings include: (1) Sub-Saharan Africa, which includes the 47 countries comprising USAID's Africa Region; (2) No. Africa & Mideast, which corresponds to USAID's Near East Sub-region and includes 21 countries from Morocco in the West to Afghanistan in the East; (3) Asia, which corresponds to USAID's Asia Sub-region and includes 24 developing countries from Pakistan eastward; (4) Latin Am. & Carib. which includes 46 countries of Central and South America and the Caribbean and corresponds to USAID's Latin America and Caribbean region. Income groupings are based on the classifications used by the United Nations' Human Development Report 1995, which are defined as: (1) Low -Income Countries (GNP per capita =$696 or less), (2) Middle-Income Countries (GNP/capita $696-$8,625); (3) High-Income Countries (GNP/capita >$8,625). "Developing Countries" indicators are based on 107 countries which are not regarded as "Established Market Economies" by the World Bank's World Development Report 1994.*

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I: HEALTH & DEMOGRAPHIC OVERVIEW

Current Demographic and Health Indicators

Demographic Indicators			
INDICATOR	**VALUE**	**YEAR**	**SOURCE**
Total population (000s)	4,206	1995	BUC9401
Urban percent	63	1995	UNP9400
Women ages 15-49 (000s)	999	1995	CAL9602
Infant mortality rate	50	1995	JEE9510
Under 5 mortality rate	69	1995	JEE9507
Maternal mortality rate	160	1990	UNI9601
Life expectancy at birth	68	1995	UNP9400
Number of births (000s)	162	1995	CAL9603
Annual infant deaths (000s)	8	1995	CAL9604
Total fertility rate	4.6	1995	PRB9601

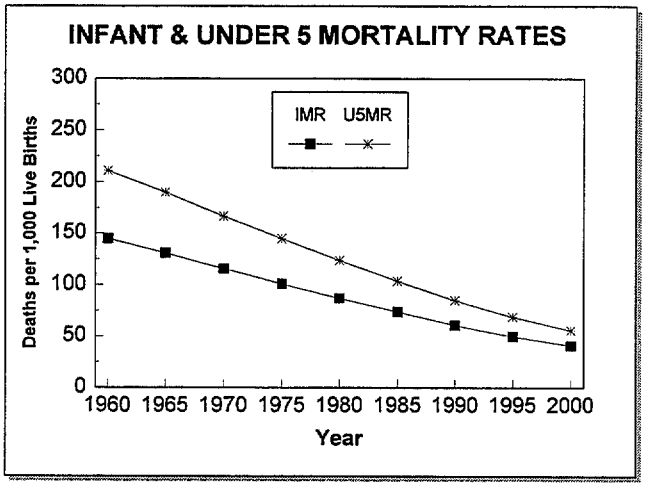
Child Survival Indicators			
INDICATOR	**VALUE**	**YEAR**	**SOURCE**
Vaccination Coverage (%)			
BCG	100	1995	WHE9601
DPT3	85	1995	WHE9601
Measles	81	1995	WHE9601
Polio 3	96	1995	WHE9601
TT2+	49	1995	WHE9601
DPT drop out rate	55	1986	PAH9100
Oral Rehydration Therapy (%)			
ORS access rate	75	1991	WHD9201
ORT use rate	40	1991	WHD9201
Contraceptive Prevalence (%)			
CPR, modern methods	23	1981	BUC8902
CPR, all methods	45	1993	CDC9301
Nutrition (%)			
Adequate nutritional status	27	1981	BUC8902
Exclusive breastfeeding	49	1993	CDC9301
Complementary feeding	90	1982	WHA8908
Continued breastfeeding	NA		

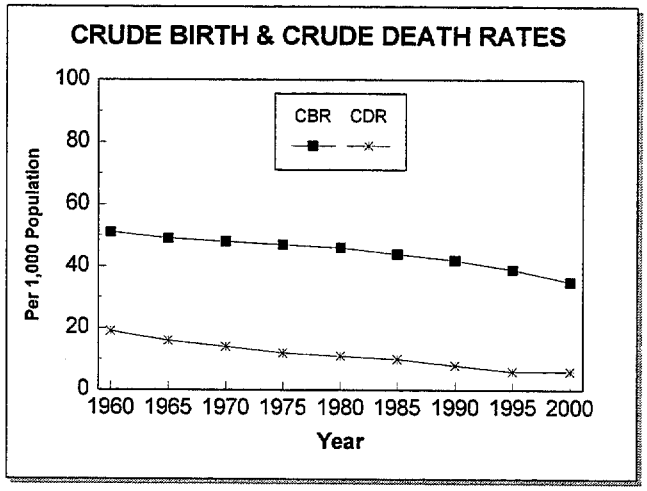
Other Health Indicators			
INDICATOR	**VALUE**	**YEAR**	**SOURCE**
HIV Prevalence			
Adults (per 100,000)	79	1994	WHO9601
Access to Improved Water (%)			
Urban	92	1992	AID9320
Rural	17	1992	AID9320
Access to Sanitation (%)			
Urban	97	1992	AID9320
Rural	57	1992	AID9320
Delivery Conditions			
Deliveries by trained attendants (%)	NA		

NA=Notavailable

Trends in Selected Demographic and Health Indicators

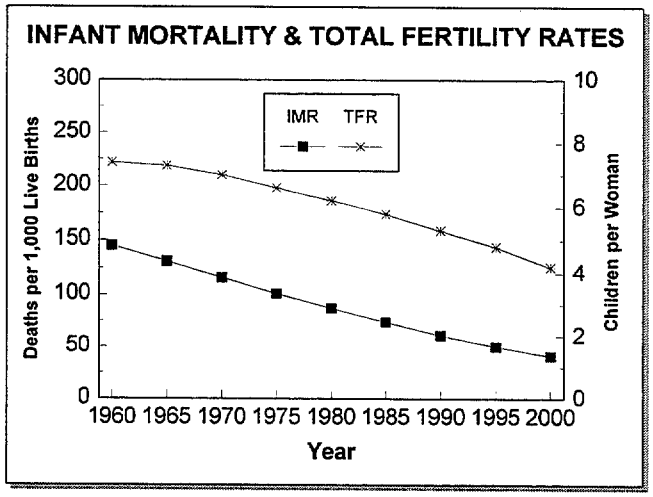
INDICATOR	1960	1965	1970	1975	1980	1985	1990	1995	2000	SOURCE
Infant Mortality Rate	145	131	116	101	87	74	61	50	41	JEE9510
Under 5 Mortality Rate	211	190	167	145	124	104	85	69	56	JEE9507
Crude Birth Rate	51	49	48	47	46	44	42	39	35	UNP9400
Crude Death Rate	19	16	14	12	11	10	8	6	6	UNP9400
Avg Annual Growth	3.1	3.2	3.2	3.1	2.9	2.7	3.2	3.4	2.9	UNP9400
Total Fertility Rate	7.4	7.3	7.0	6.6	6.2	5.8	5.3	4.8	4.2	UNP9400





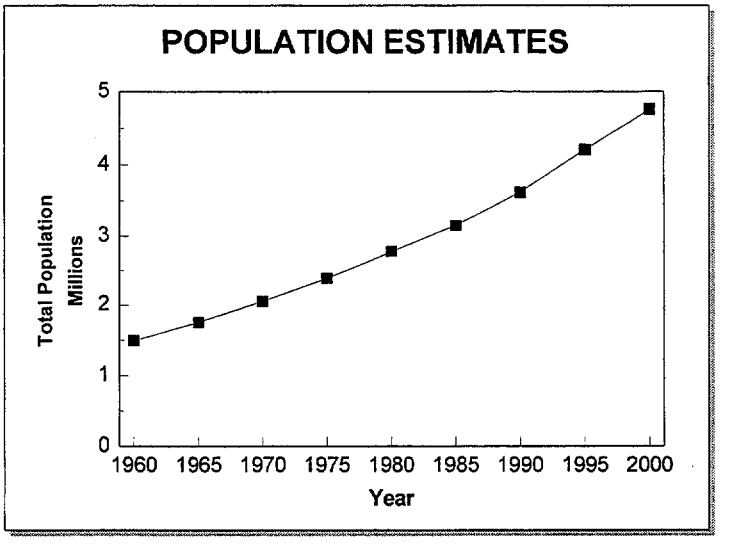
IMR and TFR

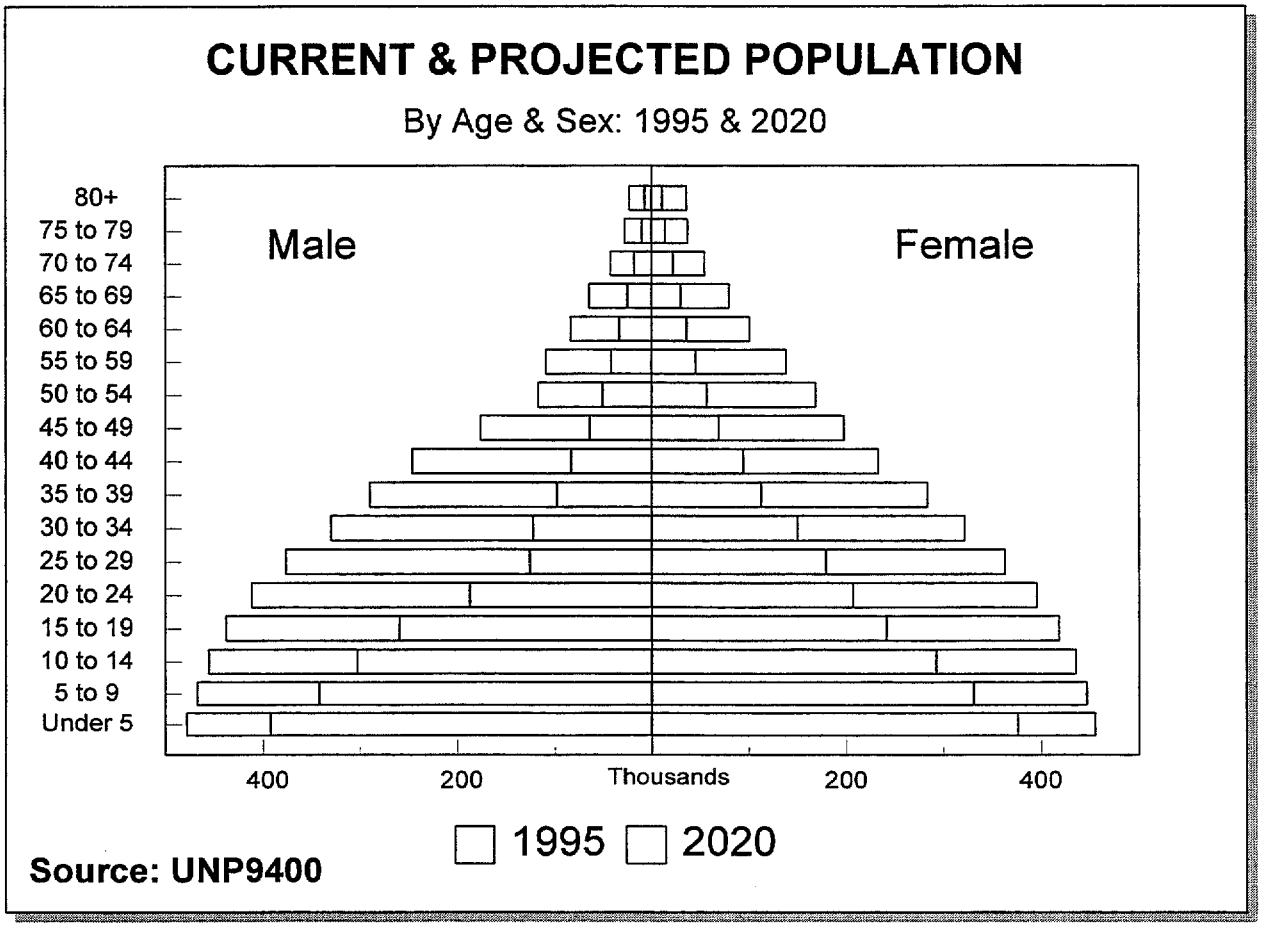
The relationship between IMR and TFR is currently a subject under review by the scientific community. While there is not conclusive evidence that the IMR and TFR are causally linked and necessarily decline together, there is empirical evidence for suspecting that such a reinforcing relationship exists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



Population Estimates/Pyramid

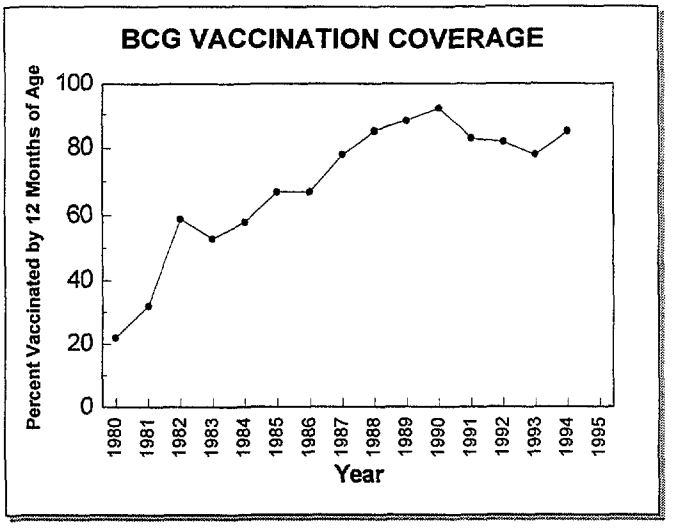
POPULATION ESTIMATES		
YEAR	VALUE	SOURCE
1960	1,492,698	BUC9401
1965	1,750,391	BUC9401
1970	2,052,544	BUC9401
1975	2,383,200	BUC9401
1980	2,775,920	BUC9401
1985	3,152,060	BUC9401
1990	3,617,500	BUC9401
1995	4,206,350	BUC9401
2000	4,758,550	BUC9401



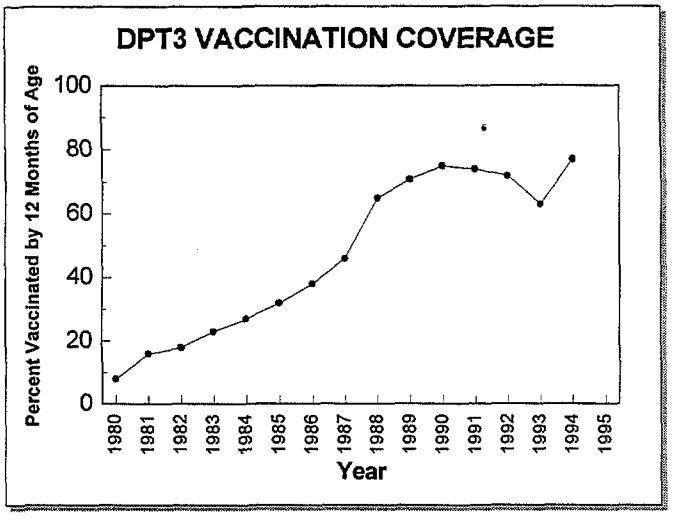


Trends in Selected Health and Child Survival Indicators

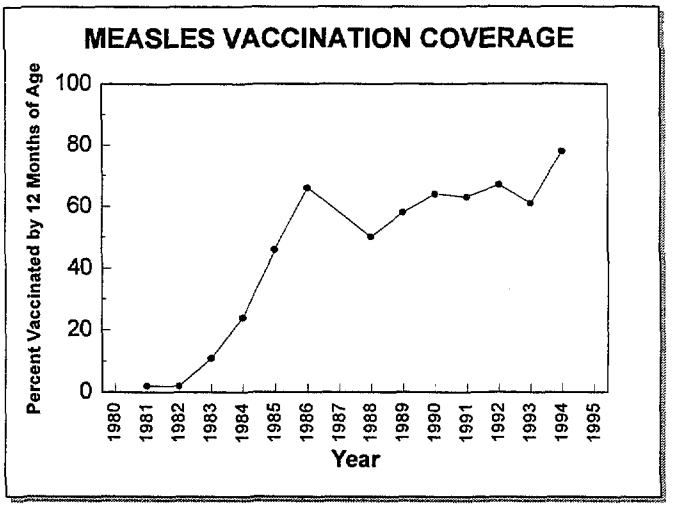
Vaccination Coverage Rates



BCG COVERAGE		
YEAR	PERCENT	SOURCE
1980	22	WHE8700
1981	32	WHE8700
1982	59	WHE8700
1983	53	WHE8801
1984	58	WHE8700
1985	67	WHE8800
1986	67	WHE8701
1987	78	WHE8801
1988	85	WHE8900
1989	88	WHE9001
1990	92	WHE9200
1991	83	WHE9202
1992	82	WHE9301
1993	78	WHE9501
1994	85	WHE9601
1995	NA	

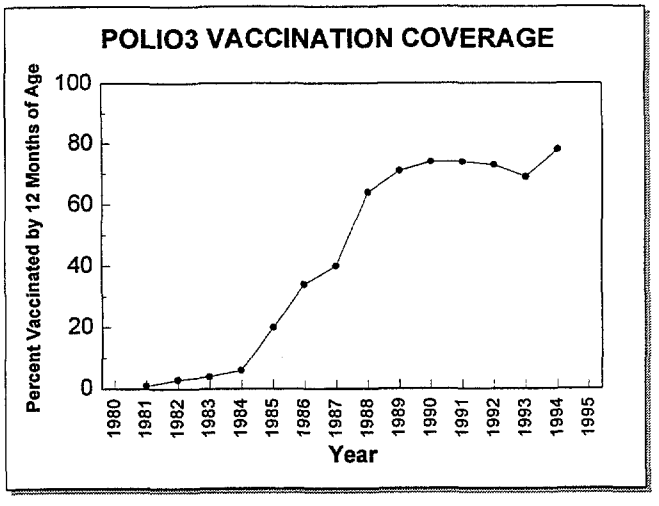


DPT3 COVERAGE		
YEAR	PERCENT	SOURCE
1980	8	WHE8700
1981	16	WHE8700
1982	18	WHE8800
1983	23	WHE8700
1984	27	WHE8700
1985	32	WHE8701
1986	38	WHE8701
1987	46	WHE8900
1988	65	WHE8900
1989	71	WHE9001
1990	75	WHE9200
1991	74	WHE9202
1992	72	WHE9301
1993	63	WHE9502
1994	77	WHE9601
1995	NA	

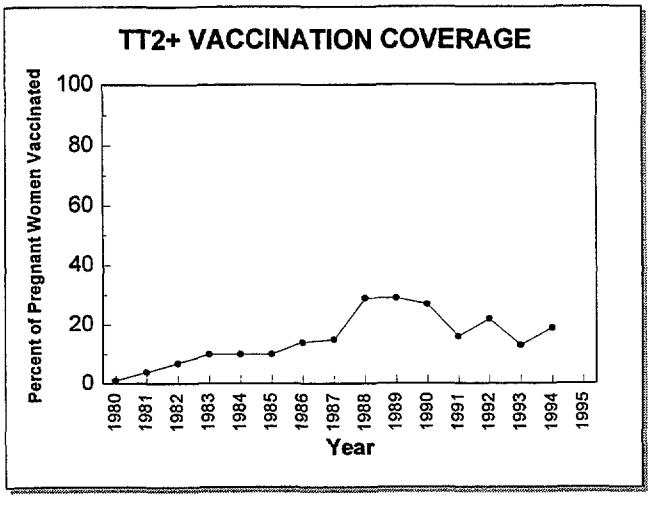


MEASLES COVERAGE		
YEAR	PERCENT	SOURCE
1980	NA	
1981	2	WHE8700
1982	2	WHE8700
1983	11	WHE8700
1984	24	WHE8700
1985	46	WHE8700
1986	66	WHE8701
1987	NA	
1988	50	WHE8900
1989	58	WHE9001
1990	64	WHE9200
1991	63	WHE9202
1992	67	WHE9301
1993	61	WHE9501
1994	78	WHE9601
1995	NA	

Vaccination Coverage Rates, continued

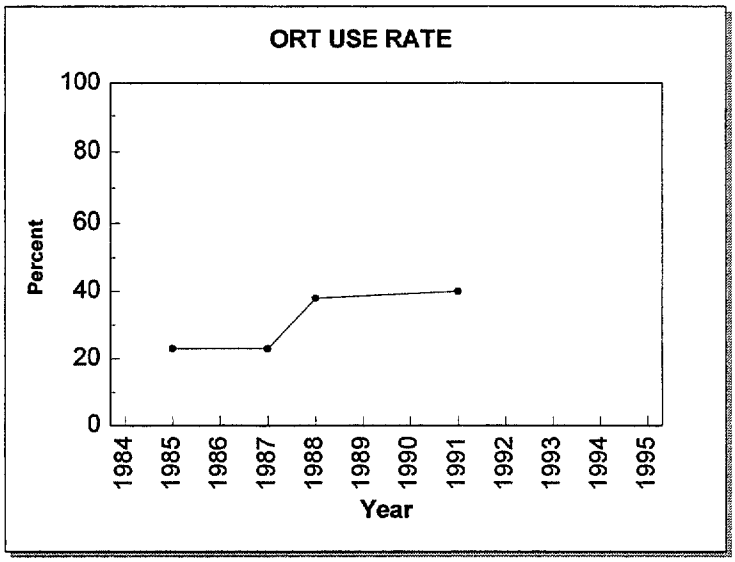


POLIO3 COVERAGE		
YEAR	PERCENT	SOURCE
1980	NA	
1981	1	WHE8800
1982	3	WHE8700
1983	4	WHE8700
1984	6	WHE8700
1985	20	WHE8700
1986	34	WHE8701
1987	40	WHE8801
1988	64	WHE8900
1989	71	WHE9001
1990	74	WHE9200
1991	74	WHE9202
1992	73	WHE9301
1993	69	WHE9501
1994	78	WHE9601
1995	NA	



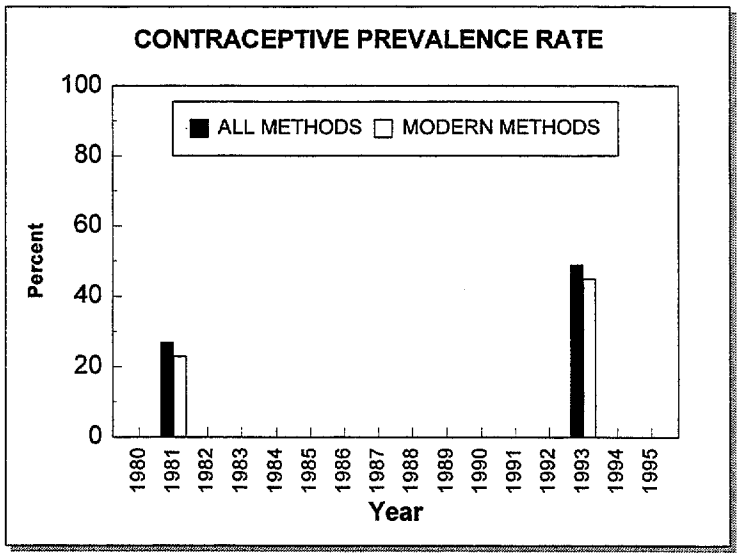
TT2+ COVERAGE		
YEAR	PERCENT	SOURCE
1980	1	WHE8700
1981	4	WHE8700
1982	7	WHE8700
1983	10	WHE8700
1984	10	WHE8700
1985	10	WHE8700
1986	14	WHE8900
1987	15	WHE8801
1988	29	WHE8900
1989	29	WHE9001
1990	27	WHE9200
1991	16	WHE9202
1992	22	WHE9301
1993	13	WHE9501
1994	19	WHE9601
1995	NA	

ORT Use Rate



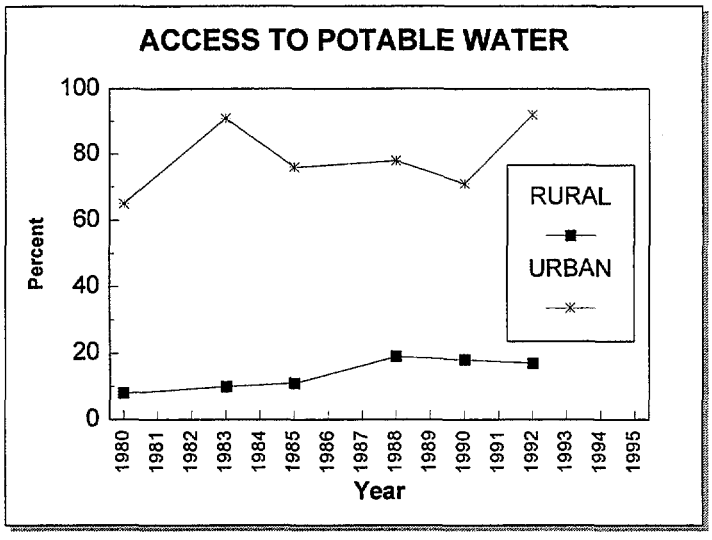
ORT USE RATE		
YEAR	PERCENT	SOURCE
1984	NA	
1985	23	WHD8500
1986	NA	
1987	23	WHD8901
1988	38	WHD8800
1989	NA	
1990	NA	
1991	40	WHD9201
1992	NA	
1993	NA	
1994	NA	
1995	NA	

Contraceptive Prevalence Rate



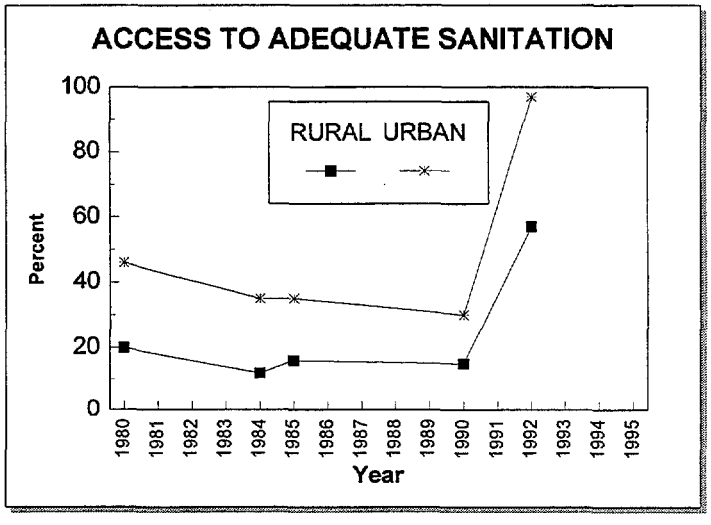
YEAR	ALL METHODS	SOURCE	MODERN METHODS	SOURCE
1980	NA		NA	
1981	27	BUC8902	23	BUC8902
1982	NA		NA	
1983	NA		NA	
1984	NA		NA	
1985	NA		NA	
1986	NA		NA	
1987	NA		NA	
1988	NA		NA	
1989	NA		NA	
1990	NA		NA	
1991	NA		NA	
1992	NA		NA	
1993	49	CDC9301	45	CDC9301
1994	NA		NA	
1995	NA		NA	

Access to Potable Water



YEAR	RURAL	SOURCE	URBAN	SOURCE
1980	8	AID9011	65	AID9011
1981	NA		NA	
1982	NA		NA	
1983	10	WHO9101	91	WHO9101
1984	NA		NA	
1985	11	WHO9101	76	AID9011
1986	NA		NA	
1987	NA		NA	
1988	19	WHO9101	78	AID9011
1989	NA		NA	
1990	18	AID9011	71	AID9011
1991	NA		NA	
1992	17	AID9320	92	AID9320
1993	NA		NA	
1994	NA		NA	
1995	NA		NA	

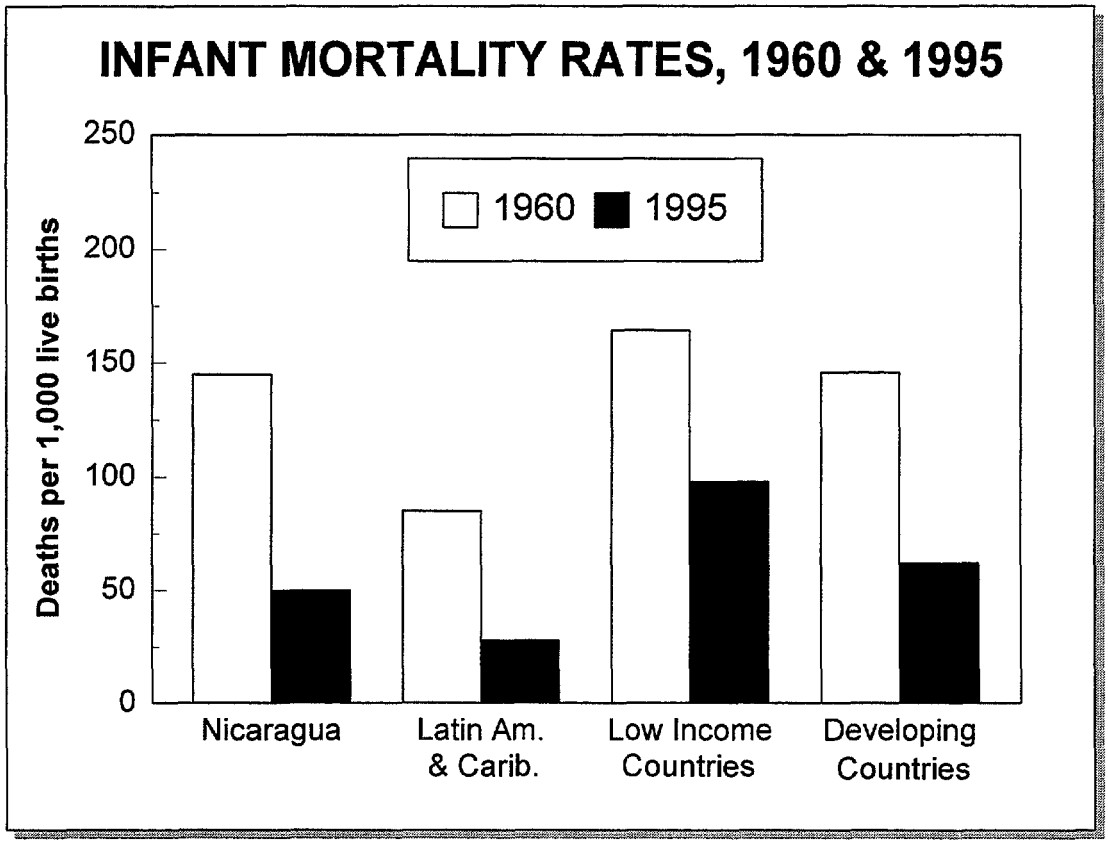
Access to Adequate Sanitation



YEAR	RURAL	SOURCE	URBAN	SOURCE
1980	20	AID9011	46	AID9011
1981	NA		NA	
1982	NA		NA	
1983	NA		NA	
1984	12	AID9011	35	AID9011
1985	16	WHO9101	35	WHO9101
1986	NA		NA	
1987	NA		NA	
1988	NA		NA	
1989	NA		NA	
1990	15	AID9011	30	AID9011
1991	NA		NA	
1992	57	AID9320	97	AID9320
1993	NA		NA	
1994	NA		NA	
1995	NA		NA	

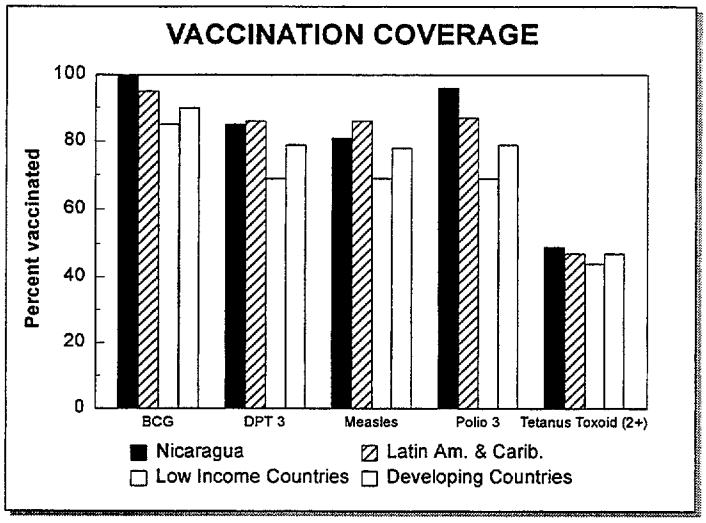
COMPARATIVE INDICATORS

Comparative Infant Mortality Rates



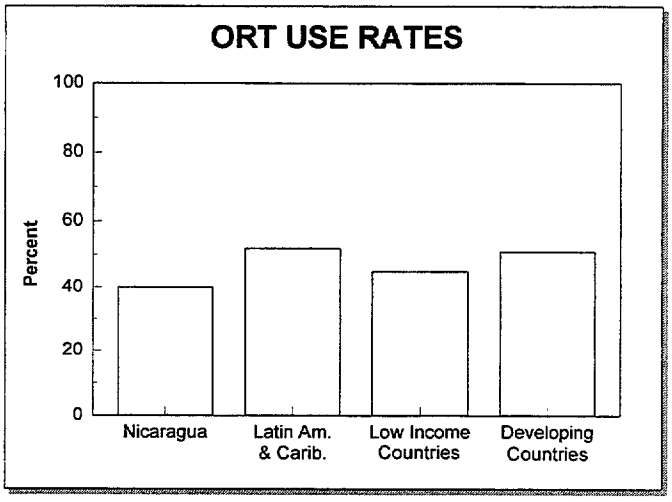
YEAR	1960	1995	Source
Nicaragua	145	50	JEE9510
Median values for country groupings:			
Latin Am. & Carib.	85	28	CAL9606
Low Income Countries	165	98	CAL9606
Developing Countries	146	62	CAL9606

Comparative Vaccination Coverage Rates



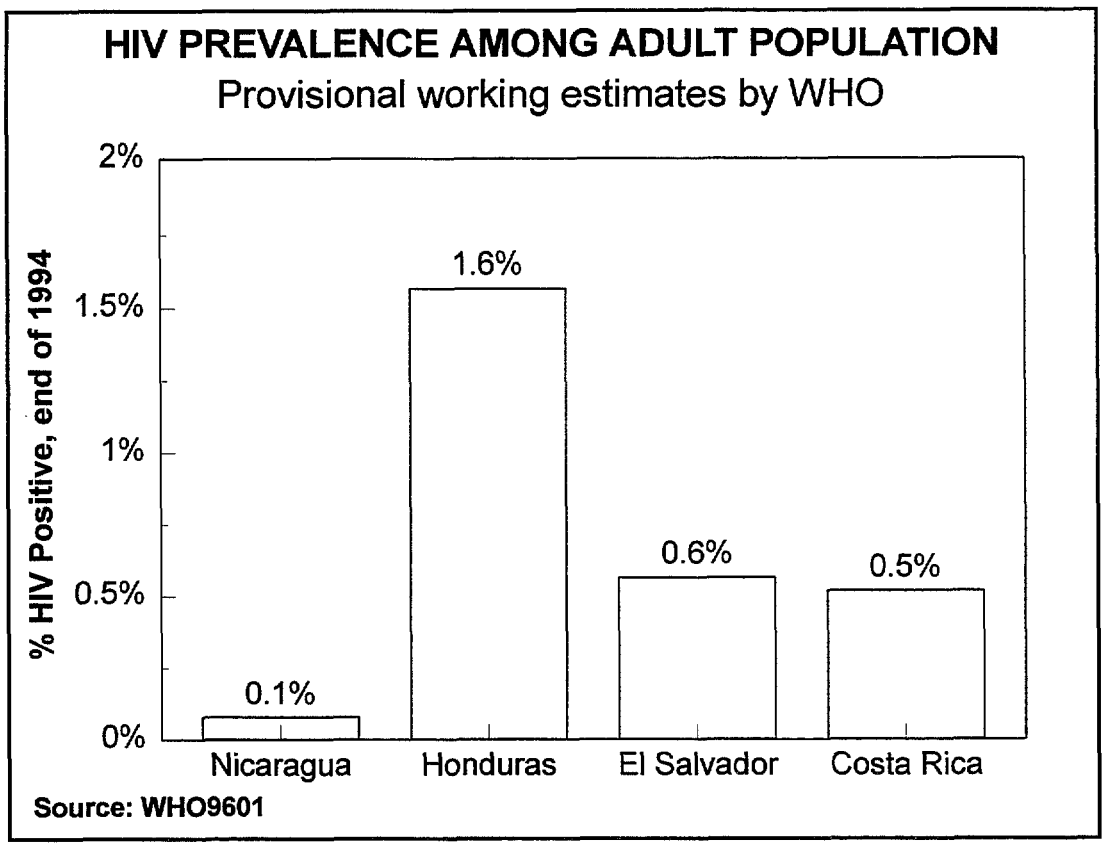
Vaccination Coverage	Nicaragua	Year	Source	Median values for country groupings: (CAL9606)		
				Latin Am. & Carib.	Low Income Countries	Developing Countries
BCG	100	1995	WHE9601	95	85	90
DPT 3	85	1995	WHE9601	86	69	79
Measles	81	1995	WHE9601	86	69	78
Polio 3	96	1995	WHE9601	87	69	79
Tetanus Toxoid (2+)	49	1995	WHE9601	47	44	47

Comparative ORT Use Rates



COUNTRY	ORT USE RATE	YEAR
Nicaragua	40	1991
Source	WHD9201	
Median values for country groupings:		
Latin Am. & Carib.	52	1995
Low Income Countries	45	1995
Developing Countries	51	1995
Source	CAL9606	

Human Immunodeficiency Virus (HIV) Prevalence Rates



II: DATA NOTES

I. Note On Mortality Estimation

Various organizations produce mortality estimates for the developing countries and regions. The three largest sources are the United Nations Population Division, the World Bank and the United States Bureau of the Census. CIHI's Health Statistics Database draws upon the work of these three larger organizations as well as other sources in order to reconcile the various estimates and provide the most reasonable current and historical estimates available.

CIHI has also created the only comprehensive time series of under-five mortality estimates for all developing countries. This has been accomplished by developing mathematical equations from empirical data that describe the relationship between infant and under-five mortality. Using these equations it is possible to make estimates of under-five mortality from infant mortality or *vice-versa*. More details regarding CIHI's methodology for specific data sets are provided in the source references.

II. Definitions

Demographic indicators:

Annual Infant Deaths: An estimate of the number of deaths occurring to children under age one in a given year.
Average Annual Rate of Population Growth: An estimate of the rate at which a population is increasing (or decreasing) in a given year.
Children Under Age 1: Mid-year estimate of the total number of children under age one.
Contraceptive Prevalence Rate: Estimate of the proportion of women aged 15 through 44 (sometimes 15 through 49) currently using a modern method of contraception. For some countries, this data is only available for women in union or married. Where sources fail to distinguish modern and traditional methods, the combined rate is shown.
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.
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).
Life Expectancy At Birth: An estimate of the average number of years a newborn can expect to live. Low life expectancies in developing countries are in large part due to high infant mortality.
Maternal Mortality Rate (or Ratio): 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. 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).
Total Population: Mid-year estimate of total number of individuals in a country.
Total Fertility Rate: Estimate of the average number of children a woman would bear during her lifetime given current age-specific fertility rates.
Under 5 Mortality Rate: The estimated number of children born in a given year who will die before age five per 1,000 live births in that same year. May be calculated by direct or indirect methods.
Urban Population: Population living in urban areas as defined according to the national definiton used in the most recent population census.

Child survival indicators:

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 WHO. The indicator for the population as a whole is the proportion of children 12 through 23 months of age who are adequately nourished.
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. Values presented in this report are the proportion of children 12 to 15 months of age at the time of the survey still receiving breast milk.
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.

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.

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 indicator is particularly difficult to measure and may fluctuate dramatically as various methods of estimation are devised.

ORT Use Rate: Estimate of the proportion of cases of diarrhea in children under five treated with **ORS and/or RHF** (a recommended home fluid). ORT use may be determined using administrative means or surveys. Administrative estimates are generally based on estimates of the number of episodes of diarrhea in the target population for a given year and the quantity of ORS available; these estimates are highly sensitive to changes in estimates of the frequency of diarrhea episodes. Surveys more precisely focus on the actual behavior of mothers in treating diarrhea in the two-week period prior to the survey.

Vaccination Coverage In Children: 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). 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: Estimate of the proportion of women in a given time period who have received two doses of tetanus toxoid (TT) during their pregnancies. A revised indicator, referred to as **TT2+**, is now commonly used to account for the cumulative effect of TT 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. (This number varies with number received previously and the time elapsed.) Rates are computed using administrative methods or surveys.

Other health sector indicators:

Access to Adequate Sanitation: Definitions vary over time. In the past, this has been an estimate of the proportion of the population with sanitation service provided through sewer systems or individual in-house or in-compound excreta disposal facilities (latrines). After WHO changed its indicators and definitions in the late 1980s, this is now defined as the proportion with reasonable access to sanitary means of excreta and waste disposal, including outdoor latrines and composting.

Access to Health Services: An estimate of the proportion of the population that can reach appropriate local health services by local means of transport in no more than one hour. Recently WHO has revised its definition to the proportion of the population having treatment for common diseases and injuries and a regular supply of the essential drugs on the national list within one hour's walk or travel.

Access to Safe Water: Proportion of the population with reasonable access to safe water supply, including treated surface waters or untreated but uncontaminated water such as that from springs, sanitary wells or protected boreholes. Reporting can be highly subjective. Varying definitions are used for reasonable access in urban/rural areas:

Access to Safe Water, Urban: 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 standpipe or fountain source of water.

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

Births Attended by Trained Personnel: An estimate of the proportion of births attended by at least one physician, nurse, midwife, trained primary health care worker, or trained birth attendant.

HIV Prevalence: Estimate of the proportion of a given population infected with HIV.

III: SOURCES

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CAL9603 Calculated number of live births to women of reproductive years (15-49) in 1995. Calculated from the population multiplied by the crude birth rate for each country.

CAL9604 Calculated number of deaths occuring to children under the age of 1 in a given year (1995). Figures based on the number of births multiplied by the infant mortality rate.

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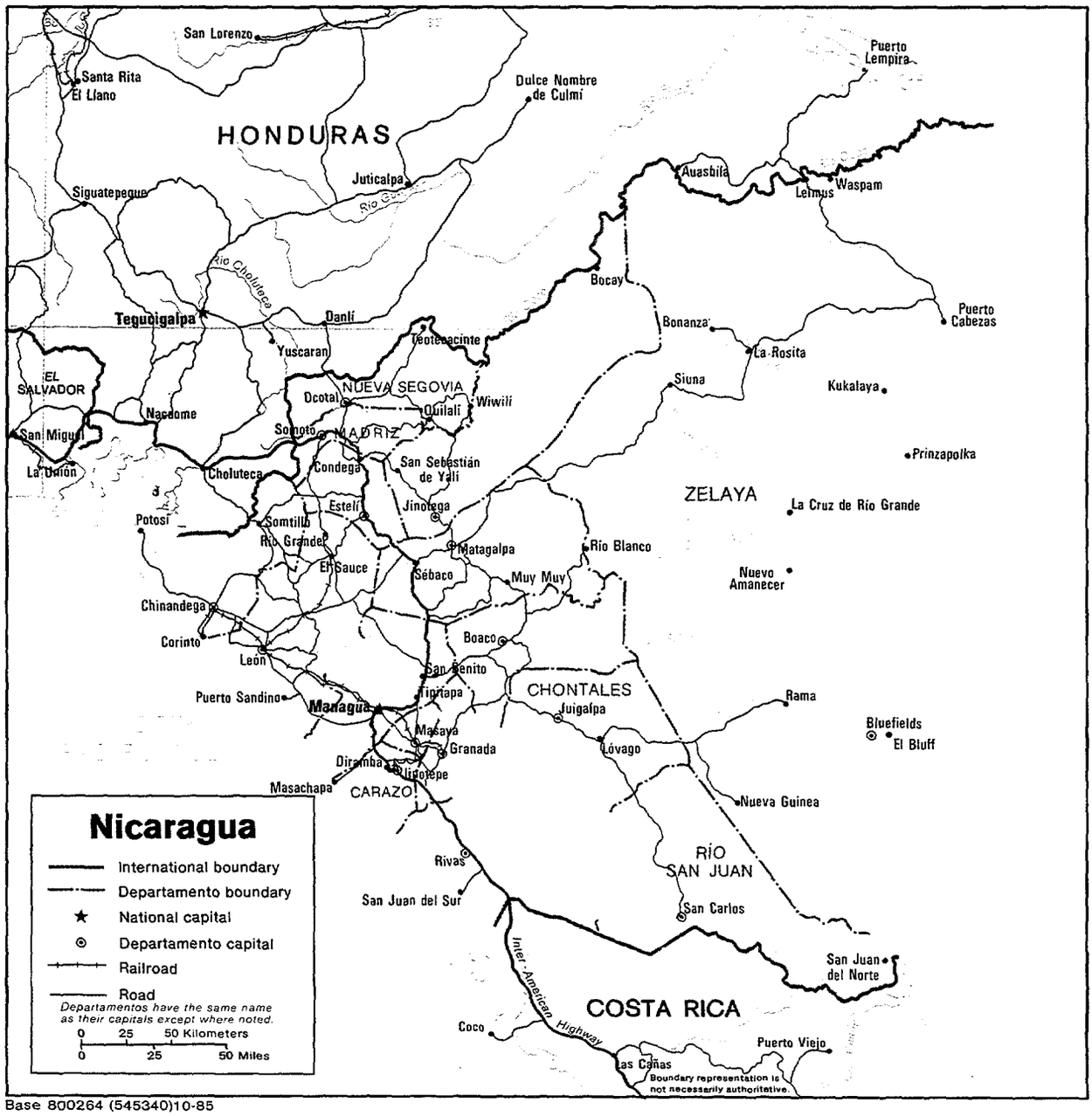

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