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## NOTE

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Special topics of the *Demographic Yearbook* series: 1948-1980

世界人口年鑑シリーズ特集題目 : 1948—1980年

<i>Year</i> 年	<i>Sales No.</i> 販売番号	<i>Issue</i> —集	<i>Special topic</i> —特集題目
1948	49.XIII.1	First—第1集	General demography—人口統計一般
1949-50	51.XIII.1	Second—第2集	Nativity statistics—出生統計
1951	52.XIII.1	Third—第3集	Mortality statistics—死亡統計
1952	53.XIII.1	Fourth—第4集	Population distribution—人口分布
1953	54.XIII.1	Fifth—第5集	General demography—人口統計一般
1954	55.XIII.1	Sixth—第6集	Nativity statistics—出生統計
1955	56.XIII.1	Seventh—第7集	Population censuses—人口センサス
1956	57.XIII.1	Eighth—第8集	Ethnic and economic characteristics of population— 種族別人口・人口の経済的屬性
1957	58.XIII.1	Ninth—第9集	Mortality statistics—死亡統計
1958	59.XIII.1	Tenth—第10集	Marriage and divorce statistics—結婚・離婚統計
1959	60.XIII.1	Eleventh—第11集	Nativity statistics—出生統計
1960	61.XIII.1	Twelfth—第12集	Population trends—人口の推移
1961	62.XIII.1	Thirteenth—第13集	Mortality statistics—死亡統計
1962	63.XIII.1	Fourteenth—第14集	Population census statistics I—センサス人口統計 I
1963	64.XIII.1	Fifteenth—第15集	Population census statistics II—センサス人口統計 II
1964	65.XIII.1	Sixteenth—第16集	Population census statistics III—センサス人口統計 III
1965	66.XIII.1	Seventeenth—第17集	Nativity statistics—出生統計
1966	67.XIII.1	Eighteenth—第18集	Mortality statistics I—死亡統計 I
1967	E/F.69.XIII.1	Nineteenth—第19集	Mortality statistics II—死亡統計 II
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1970	E/F.71.XIII.1	Twenty-second—第22集	Population trends—人口の推移
1971	E/F.72.XIII.1	Twenty-third—第23集	Population census statistics I—センサス人口統計 I
1972	E/F.73.XIII.1	Twenty-fourth—第24集	Population census statistics II—センサス人口統計 II
1973	E/F.74.XIII.1	Twenty-fifth—第25集	Population census statistics III—センサス人口統計 III
1974	E/F.75.XIII.1	Twenty-sixth—第26集	Mortality statistics—死亡統計
1975	E/F.76.XIII.1	Twenty-seventh—第27集	Nativity statistics—出生統計
1976	E/F.77.XIII.1	Twenty-eighth—第28集	Marriage and divorce statistics—結婚・離婚統計
1977	E/F.78.XIII.1	Twenty-ninth—第29集	International migration statistics—国際人口移動
1978	E/F.79.XIII.1	Thirtieth—第30集	General Tables—一般表
1978	E/F.79.XIII.8	Special issue—特集	Historical supplement—三十年間の人口統計・1948—1978
1979	E/F.80.XIII.1	Thirty-first—第31集	Population census statistics—センサス人口統計
1980	E/F.81.XIII.1	Thirty-second—第32集	Mortality statistics—死亡統計



# CONTENTS — 目 次

	Page		ページ
Explanation of symbols .....	x	符号の説明.....	X
<b>TEXT</b>		<b>本 文</b>	
INTRODUCTION .....	1	序 言.....	2
TECHNICAL NOTES ON THE STATISTICAL TABLES		統計表についての専門的説明.....	63
1. General remarks .....	3	1. 概 説.....	63
2. Geographical aspects .....	3	2. 地理上の問題点.....	65
3. Population .....	5	3. 人 口.....	69
4. Vital statistics .....	8	4. 人口動態統計.....	78
Description of tables .....	17	各表の説明.....	89
<b>TABLES PUBLISHED ANNUALLY</b>		<b>毎年掲載表</b>	
Table	Page	表	ページ
<b>WORLD SUMMARY</b>		<b>世界摘要</b>	
1. Population, rate of increase, birth and death rates, surface area and density for the world, macro regions and regions: selected years .....	133	1. 世界, 大陸および主要地域の人口, 人口増加率, 出生率, 死亡率, 面積および人口密度: 特定年次.....	133
2. Estimates of population and its percentage distribution, by age and sex and sex ratio for all ages for the world, macro regions and regions: 1980 .....	134	2. 世界, 大陸および主要地域の男女, 年齢別推計人口, その構成比および総人口の性比: 1980年.....	134
3. Population by sex, rate of population increase, surface area and density for each country or area of the world: latest census, and mid-year estimates for 1975 and 1980 .....	136	3. 各国または地域の男女別人口, 人口増加率, 面積および人口密度: 最新のセンサスおよび1975年と1980年の年央推計.....	136
4. Vital statistics rates, natural increase rates and expectation of life at birth: latest available year .....	146	4. 各国または地域の人口動態率, 自然増加率および出生時の平均余命: 最新年次.....	146
<b>POPULATION</b>		<b>人 口</b>	
5. Estimates of mid-year population: 1971-1980 .....	153	5. 年央推計人口: 1971—1980年.....	153
6. Urban and total population by sex: 1971-1980 .....	159	6. 男女別都市人口および総人口: 1971—1980年...	159
7. Population by age, sex and urban/rural residence: latest available year, 1971-1980 .....	178	7. 男女, 年齢別人口: 最新年次, 1971—1980年...	178
by urban/rural residence .....	206	都市・農村居住別.....	206
8. Population of capital cities and cities of 100 000 and more inhabitants: latest available year .....	225	8. 首都および人口100,000以上の各都市人口: 最新年次.....	225

## TABLES (continued)

表(つづき)

Table	Page
<b>NATALITY</b>	
9. Live births and crude live-birth rates, by urban/rural residence: 1976-1980 .....	253
by urban/rural residence .....	258
10. Live births by age of mother, sex and urban/rural residence: latest available year .....	262
by urban/rural residence .....	272
11. Live-birth rates specific for age of mother, by urban/rural residence: latest available year .....	280
by urban/rural residence .....	284
<b>NUPTIALITY</b>	
12. Marriages and crude marriage rates, by urban/rural residence: 1976-1980 .....	288
by urban/rural residence .....	291
13. Marriages by age of groom and age of bride: latest available year .....	294
<b>DIVORCE</b>	
14. Divorces and crude divorce rates: 1976-1980 .....	303
<b>SPECIAL TOPIC TABLES</b>	
<b>FOETAL MORTALITY</b>	
15. Legally induced abortions: 1971-1979 ...	307
16. Legally induced abortions by age and number of previous live births of woman: latest available year .....	309
17. Late foetal deaths and late foetal death ratios, by urban/rural residence: 1970-1979 .....	314
by urban/rural residence .....	320
18. Foetal deaths and foetal death ratios, by gestational age: 1971-1979 .....	326
<b>PERINATAL, INFANT, AND MATERNAL MORTALITY</b>	
19. Perinatal deaths and perinatal death ratios, by urban/rural residence: 1971-1979 ..	338
by urban/rural residence .....	342
20. Infant deaths and infant mortality rates, by urban/rural residence: 1971-1980 ....	344
by urban/rurale residence .....	352

表	ページ
<b>出 生</b>	
9. 出生数および普通出生率：1976—1980年.....	253
都市・農村居住別.....	258
10. 母の年齢別，男女別出生数：最新年次.....	262
都市・農村居住別.....	272
11. 母の年齢別特殊出生率：最新年次.....	280
都市・農村居住別.....	284
<b>結 婚</b>	
23. 結婚数および普通結婚率：1976—1980年.....	288
都市・農村居住別.....	291
24. 夫および妻の年齢別結婚数：最新年次.....	294
<b>離 婚</b>	
25. 離婚数および普通離婚率：1976—1980年.....	303

## 特集題目表

<b>胎児死亡</b>	
15. 合法的人工妊娠中絶数：1971—1979年.....	307
16. 婦人の年齢別，出生児数別合法的人工妊娠中絶数：最新年次.....	309
17. 後期胎児死亡数および後期胎児死亡比：1970—1979年.....	314
都市・農村居住別.....	320
18. 妊娠期間別胎児死亡数および胎児死亡率：1971—1979年.....	326
<b>周産期死亡，乳児死亡および妊産婦死亡</b>	
19. 周産期死亡数および周産期死亡率：1971—1979年.....	338
都市・農村居住別.....	342
20. 乳児死亡数および乳児死亡率：1971—1980年...	344
都市・農村居住別.....	352

## TABLES (continued)

## 表(つづき)

Table	Page	表	ページ
21. Infant deaths by age, sex and urban/rural residence: 1971-1979 .....	360	21. 男女, 年齢別乳児死亡数: 1971-1979年.....	360
by urban/rurale residence .....	412	都市・農村居住別.....	412
22. Infant mortality rates by age, sex and urban/rural residence: 1971-1979 .....	418	22. 男女, 年齢別乳児死亡率: 1971-1979年.....	418
by urban/rurale residence .....	438	都市・農村居住別.....	438
23. Infant deaths by month of occurrence: 1971-1979 .....	441	23. 発生月別乳児死亡数: 1971-1979年.....	441
24. Maternal deaths and maternal mortality rates: 1971-1979 .....	456	24. 妊産婦死亡数および妊産婦死亡率: 1971-1979年.....	456
<b>GENERAL MORTALITY</b>		<b>一般死亡</b>	
25. Deaths and crude death rates by urban/rural residence: 1971-1980 .....	460	25. 死亡数および普通死亡率: 1971-1980年.....	460
by urban/rurale residence .....	470	都市・農村居住別.....	470
26. Deaths by age, sex and urban/rural residence: 1971-1979 .....	480	26. 男女, 年齢別死亡数: 1971-1979年.....	480
by urban/rurale residence .....	540	都市・農村居住別.....	540
27. Death rates specific for age, sex and urban/rural residence: 1971-1979 .....	578	27. 男女, 年齢別特殊死亡率: 1971-1979年.....	578
by urban/rurale residence .....	610	都市・農村居住別.....	610
28. Deaths by marital status, age and sex: latest available year .....	626	28. 配偶関係および男女, 年齢別死亡数: 最新年次	626
29. Death rates specific for marital status, age and sex: latest available year .....	649	29. 配偶関係および男女, 年齢別特殊死亡率: 最新年次.....	649
30. Deaths by month of occurrence: 1971-1979	662	30. 発生月別死亡数: 1971-1979年.....	662
31. Deaths and death rates by cause and percentage medically certified: 1971-1979 .	679	31. 死因別死亡数, 死亡率および死亡診断による死亡割合: 1971-1979年.....	679
32. Deaths and death rates by cause and sex: latest available year .....	783	32. 死因別, 男女別死亡数および死亡率: 最新年次	783
33. Deaths by cause, age and sex: latest available year .....	812	33. 死因別, 男女, 年齢別死亡数: 最新年次.....	812
34. Expectation of life at specified ages for each sex: two latest available years .....	876	34. 男女別特定年齢における平均余命: 最新の2年次.....	876
35. Life table mortality rates at specified ages for each sex: two latest available years ..	916	35. 男女別特定年齢における生命表死亡率: 最新の2年次.....	916
36. Survivors at specified ages for each sex: two latest available years .....	930	36. 男女別特定年齢における生存者数: 最新の2年次.....	930
<b>INDEX</b>		<b>索引</b>	
Subject-matter index .....	944	事項索引.....	944

## EXPLANATION OF SYMBOLS

Category not applicable .....	..
Data not available .....	...
Magnitude zero .....	—
Magnitude not zero, but less than half of unit employed .....	{ 0 0.0
Marked break in series is indicated by a vertical bar .....	
Provisional .....	*
United Nations estimate .....	x
Data tabulated by year of registration rather than occurrence .....	†
Based on less than specified minimum .....	◇
Relatively reliable data .....	roman type
Data of lesser reliability .....	italics

## 符号の説明

該当数字なし .....	..
データなし .....	...
皆 無 .....	—
皆無ではなく、当該単位の半ばに満たない数 .....	{ 0 0.0
系列のなかに顕著な断絶がある場合に、それを示す縦の線 .....	
暫 定 .....	*
国際連合推定 .....	x
発生年次によらず、登録年次により表章されているデータ .....	†
特定の最低値に満たない数値によるもの .....	◇
比較的信頼できるデータ .....	ローマン体
信頼度の劣るデータ .....	イタリック体



# INTRODUCTION

The *Demographic Yearbook* is a comprehensive collection of international demographic statistics, prepared by the Statistical Office of the United Nations. The *Demographic Yearbook 1980*, which features mortality as a special subject, is the thirty-second in a series published by the United Nations.

Through the co-operation of national statistical services, official demographic statistics are presented for about 220 countries or areas throughout the world. Estimates prepared by the Population Division of the United Nations Secretariat have been used in certain instances to supplement official statistics. The use of United Nations estimates has made it possible to present tables giving summary data for all countries or areas of the world using 1980 as a common year of reference.

The tables in the *Yearbook* are presented in two parts, the basic tables followed by the tables devoted to mortality, the special topic in this issue. The first part contains tables giving a world summary of basic demographic statistics, followed by tables presenting statistics on the size, distribution and trends in population, natality, nuptiality and divorce. In the second part, tables present detailed data on abortions, foetal mortality, infant and maternal mortality followed by general mortality tables showing total deaths and death rates by age, sex and marital status. Tables are also presented on deaths and death rates by cause, age and sex. Three tables show the following life table functions by sex at selected ages for the two most recent years available: expectation of life (in years), life table mortality rates, and number of survivors. Data are shown by urban/rural residence in many of the tables.

Most previous issues have included an article considered to be of particular interest to the users of the *Demographic Yearbook*. In this issue there is no special article. However, a new section, which discusses the International Classification of Diseases, has been added to the section of the Technical Notes on Vital Statistics. Users of data on cause of death should refer to section 4.3 Cause of Death. This section presents and discusses the new tabulation list used in conjunction with the ninth revision of the International Classification of Diseases adopted in 1975.

The Technical Notes on the Statistical Tables are to assist the reader in using the tables. A cumulative index, found at the end of the *Yearbook*, is a guide to the subject matter, by years covered, in all thirty-two issues. The sales number of previous issues and a listing of the special topics featured in each issue are shown on page iii.

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The *Demographic Yearbook* is one of a co-ordinated and interrelated set of publications issued by the United Nations and the specialized agencies and designed to supply basic statistical data for demographers, economists, public-health workers and sociologists. Under the co-ordinated plan, the *Demographic Yearbook* is the international source of demographic statistics. Some of the data assembled for it are reprinted in the publications of the World Health Organization — in particular in the *World Health Statistics Annual* — to make them more readily accessible to the medical and public-health professions. In addition, the World Health Organization publishes annually compilations of deaths by cause, age and sex, detailed statistics on selected causes of death, information on cases of deaths from notifiable diseases and other data of medical interest, which supplement the *Demographic Yearbook* tables. Both the *Demographic Yearbook* and the World Health Organization publications should be used when detailed figures on the full range of internationally assembled statistics on these subjects are required.

## 序 言

この「世界人口年鑑」は、国連統計部が作成した国際人口統計の集成である。「人口年鑑 1980 年版」は死亡を特殊項目として特集したもので、国連が刊行してきたシリーズの 32 集にあたる。

各国の統計関係機関の協力をえて、世界中の 220 以上の国あるいは地域についての公式の人口統計が示されている。国連事務局人口部によって作成された推計は、公式統計を補足するといった場合に使用された。国連推計の利用によって、1980 年を共通の参照年次として世界のすべての国あるいは地域についての材料を要約した表を示すことができた。

本年鑑の表は 2 部に分けて示されており、それは基礎統計表と本年版の特別項目である人口調査（センサス）のために作成された調査表である。第 1 部には、基礎的人口統計の世界摘要を示した諸表、それに続いて人口の大きさ、人口の分布と傾向、出生、結婚と離婚に関する統計を示した表が含まれている。第 2 部では、人工妊娠中絶、胎児死亡、乳児死亡および妊産婦死亡などに関する詳細なデータを示す表と、それに続いて死亡数と男女・年齢別および配偶関係別の死亡数と普通死亡率を記した表が含まれ、さらに死因別にみた男女・年齢別の死亡数と死亡率に関する表も含まれている。また平均余命（年数）、生命表死亡率、生存者数の 3 つの生命表函数を特定の年齢別に、入手可能な最新の 2 年次について記した表が最後に掲載されている。また、本版を通じて多くの表は都市・農村別に示されている。

これまでのほとんどの版では、人口年鑑の利用者が特に関心をもつと思われる部分について特に解説文を掲げてきたが、本版ではそれははぶいてある。その代りに、疾病の国際分類について解説した新しい節が専門的説明の人口動態統計のところに付け加えてある。死因データを利用しようとする場合には 4.3 節の死因のところを参照されたい。この節は、1975 年に採択された第 9 回改訂の国際死因分類について解説したものである。

統計表の専門的説明は読者が表を利用し易くするためのものである。本版の末尾にある索引は、全 32 版において取り扱われた項目をカバーしている。iii ページにはこれまでの版の販売番号と各版の特集が掲載されている。

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「世界人口年鑑」は、国際連合および専門機関によって発行された一連の総合的、相互関連の公刊物のひとつであって、人口学者、経済学者、公衆衛生従事者および社会学者に対し基礎的な統計データを提供することを目的としたものである。総合的計画の下に作製された「人口年鑑」は、人口統計の国際的源泉である。ここに収集されているデータの一部のものは世界保健機構（WHO）の公刊物、特に「世界保健統計年報」に再録されており、医学および公衆衛生の専門家の人々の利用の便をはかっている。さらに、世界保健機構は毎年死因別、男女・年齢別死亡数、特定死因についての詳細な統計、届出の義務のある疾病による死亡件数についての情報およびその他医学上関心のあるデータを発表しており、それらは「人口年鑑」の諸表を補足するものである。これらの主題について収集された国際的統計の全範囲についての詳細な数値が必要な場合には、「人口年鑑」および世界保健機構の公刊物の両者を利用すべきである。

# TECHNICAL NOTES ON THE STATISTICAL TABLES

## 1. GENERAL REMARKS

### 1.1 Arrangement of Technical Notes

These Technical Notes are designed to give the reader relevant information for using the statistical tables. Information pertaining to the *Yearbook* in general is presented in sections dealing with various geographical aspects and population and vital statistics data. The following section which refers to individual tables includes a description of the variables, remarks on the reliability of the data, limitations, coverage and information on the presentation of earlier data. When appropriate details on computation of rates, ratios or percentages are presented.

### 1.2 Arrangement of tables

The tables are grouped in two parts: the general tables and the special topic tables, which in this particular issue deal with mortality statistics. In each group, tables are arranged according to subject matter and are shown in the table of contents under the appropriate subheadings. Since the numbering of the tables does not correspond exactly to those in previous issues, the reader is advised to use the index which appears at the end of this book to find data in earlier issues.

### 1.3 Source of data

The statistics presented in the *Demographic Yearbook* are official data unless otherwise indicated. The primary

source of data for the *Yearbook* is a set of questionnaires sent annually and monthly to about 220 national statistical services and other appropriate government offices. Data forwarded on these questionnaires are supplemented, to the extent possible, by data taken from official national publications and by correspondence with the national statistical services. In the interest of comparability, rates, ratios and percentages have been calculated in the Statistical Office of the United Nations, except for the life table functions and a few exceptions in the rate tables, which have been appropriately noted. The methods used by the Statistical Office to calculate these rates and ratios are described in the Technical Notes for each table. The populations used for these computations are those published in this or previous issues of the *Yearbook*.

In cases when data in this issue of the *Demographic Yearbook* differ from those published in earlier issues of the *Demographic Yearbook* or related publications, statistics in this issue may be assumed to reflect revisions received in the Statistical Office of the United Nations by 31 March 1981. It should be noted that, in particular, data shown as provisional are subject to further revision.

### 1.4 Changes appearing in this Issue

#### 1.4.1 Presentation of data

Information regarding recent name changes for various countries or areas are shown in section 2.3.2.

## 2. GEOGRAPHICAL ASPECTS

### 2.1 Coverage

Geographical coverage in the tables of this *Yearbook* is as comprehensive as possible. Data are shown for as many individual countries or areas as provide them. Table 3 is the most comprehensive in geographical coverage, presenting data on population and surface area for every country or area with a population of at least 50 persons. Not all of these countries or areas appear in subsequent tables. In many cases the data required for a particular table are not available. In general, the more detailed the data required for any table, the fewer the number of countries or areas that can provide them.

In addition, with the exception of three tables, rates and ratios are presented only for countries or areas reporting at least a minimum number of relevant events.

The minimums are explained in the Technical Notes for the individual tables. The three exceptions, in which rates for countries or areas are shown regardless of the number of events on which they were based, are tables 4, 9, and 25, presenting a summary of vital statistics rates, crude birth rates, and crude death rates, respectively.

Except for summary data shown for the world and by macro regions and regions in tables 1 and 2, all data are presented on the national level. In some cases when these have not been available, sub-national statistics, those for particular ethnic groups or for certain geographical segments of a country or area, have been shown and foot-noted accordingly. These data are not presented as representative of national-level statistics but as an index of the availability of statistics.

## 2.2 Territorial composition

In so far as possible, all data, including time series data, relate to the territory within 1980 boundaries. Exceptions to this are foot-noted in individual tables. Additionally, in table 3, recent changes and other relevant clarifications are elaborated.

Data relating to the People's Republic of China generally include those for Taiwan Province in the field of statistics relating to population, surface area, natural resources, natural conditions such as climate, etc. In other fields of statistics, they do not include Taiwan Province unless otherwise stated. Therefore in this publication, the data published under the heading "China" include those for Taiwan Province.

## 2.3 Nomenclature

Because of space limitations, the country or area names listed in the tables are generally the commonly employed short titles in use in the United Nations as of 31 March 1981,<sup>1</sup> the full titles being used only when a short form is not available. However, the following full titles are used in table 3: United Kingdom of Great Britain and Northern Ireland, United States of America, Union of Soviet Socialist Republics, Byelorussian Soviet Socialist Republic and Ukrainian Soviet Socialist Republic.

### 2.3.1 Order of presentation

Countries or areas are listed in English alphabetical order within the following continents: Africa, North America, South America, Asia, Europe, Oceania and the USSR.

The designations employed and the presentation of the material in this publication were adopted solely for the purpose of providing a convenient geographical basis for the accompanying statistical series. The same qualification applies to all notes and explanations concerning the geographical units for which data are presented.

### 2.3.2 Recent name changes

The following change in country name appears for the first time in this issue of the *Yearbook*:

<sup>1</sup> For a listing of the majority of these, see "Names of Countries and Adjectives of Nationality" (United Nations document ST/CS/SER.F/317 and Corr. 1-2).

### Former Listing

New Hebrides  
Yemen, Democratic

### Current Listing

Vanuatu  
Democratic Yemen

## 2.4 Surface Area Data

Surface area data, shown in tables 1 and 3, represent the total surface area, comprising land area and inland waters (assumed to consist of major rivers and lakes) and excluding only polar regions and uninhabited islands. The surface area given is the most recent estimate available. All are presented in square kilometres, a conversion factor of 2.589988 having been applied to surface areas originally reported in square miles.

### 2.4.1 Comparability over time

Comparability over time in surface area estimates for any given country or area may be affected by improved surface area estimates, increases in actual land surface by reclamation, boundary changes, changes in the concept of "land surface area" used or a change in the unit of measurement used. In most cases it was possible to ascertain the reason for a revision but, failing this, the latest figures have nevertheless generally been accepted as correct and substituted for those previously on file. Some slight changes in surface area figures from those previously published are also due to the use of the factor given above (2.589988), which was adopted by the Statistical Office of the United Nations in 1965, replacing the factor of 2.589998 previously used.

### 2.4.2 International comparability

Lack of international comparability between surface area estimates arises primarily from differences in definition. In particular, there is considerable variation in the treatment of coastal bays, inlets and gulfs, rivers and lakes. International comparability is also impaired by the variation in methods employed to estimate surface area. These range from surveys based on modern scientific methods to conjectures based on diverse types of information. Some estimates are recent while others may not be. Since neither the exact method of determining the surface area nor the precise definition of its composition and time reference is known for all countries or areas, the estimates in table 3 should not be considered strictly comparable from one country or area to another.



### 3. POPULATION

Population statistics, that is, those pertaining to the size, geographical distribution and demographic characteristics of the population, are presented in a number of tables of the *Demographic Yearbook*.

Data for countries or areas include population census figures, estimates based on results of sample surveys (in the absence of a census), postcensal or intercensal estimates and those derived from continuous population registers. In the present issue of the *Yearbook*, the latest available census figure of the total population of each country or area and mid-year estimates for 1975 and 1980 are presented in table 3. Mid-year estimates of total population for 10 years are shown in table 5 and mid-year estimates of urban and total population by sex for 10 years are shown in table 6. The latest available data on population by age, sex and urban/rural residence are given in table 7. The latest available figures on the population of capital cities and of cities of 100 000 and more inhabitants are presented in table 8.

Summary estimates of the mid-year population of the world, macro regions and regions for selected years and of its age and sex distribution in 1980 are set forth in tables 1 and 2, respectively.

The statistics on total population, population by age, sex and urban/rural distribution are used in the calculation of rates in the *Yearbook*. Vital rates by age and sex were calculated using data which appear in table 7 in this issue or the corresponding tables of previous issues of the *Demographic Yearbook*.

#### 3.1 Sources of variation of data

The comparability of data is affected by several factors, including (1) the definition of the total population, (2) the definitions used to classify the population into its urban/rural components, (3) difficulties relating to age reporting, (4) the extent of over-enumeration or under-enumeration in the most recent census or other source of bench-mark population statistics and (5) the quality of population estimates. These five factors will be discussed in some detail in sections 3.1.1 to 3.2.4 below. Other relevant problems are discussed in the Technical Notes to the individual tables. Readers interested in more detail, relating in particular to the basic concepts of population size, distribution and characteristics as elaborated by the United Nations, should consult the *Principles and Recommendations for Population and Housing Censuses*.<sup>2</sup>

##### 3.1.1 Total population

The most important impediment to comparability of total populations is the difference between *de facto* and *de jure* population. A *de facto* population should include all persons physically present in the country or area at the reference date. The *de jure* population, by contrast, should include all usual residents of the given country or area, whether or not they were physically present there

at the reference date. By definition, therefore, a *de facto* total and a *de jure* total are not entirely comparable.

Comparability of even two ostensibly *de facto* totals or of two ostensibly *de jure* totals is often affected by the fact that, simple as the two concepts appear, strict conformity to either of them is rare. To give a few examples, some so-called *de facto* counts do not include foreign military, naval and diplomatic personnel present in the country or area on official duty, and their accompanying family members and servants; some do not include foreign visitors in transit through the country or area or transients on ships in harbour. On the other hand, they may include such persons as merchant seamen and fishermen who are out of the country or area working at their trade.

The *de jure* population figure presents even more opportunity for lack of comparability because it depends in the first place on the concept of a "usual resident", which varies from one country or area to another and is, in any case, difficult to apply consistently in a census or survey enumeration. For example, civilian aliens temporarily in a country or area as short-term workers may officially be considered residents after a stay of a specified period of time or they may be considered as non-residents throughout the duration of their stay; at the same time, the same persons may be officially considered as residents or non-residents of the country or area from which they came, depending on the duration and/or purpose of their absence. Furthermore, regardless of the official treatment, individual respondents may apply their own interpretation of residence in responding to the inquiry. In addition, there may be considerable differences in the accuracy with which countries or areas are informed about the number of their residents temporarily out of the country or area.

So far as possible, the population statistics presented in the tables of the *Yearbook* are *de facto*. Figures not otherwise qualified may, therefore, be assumed to have been reported by countries or areas as *de facto*. Those reported as *de jure* are identified as such. In an effort to overcome, to the extent possible, the effect of the lack of strict conformity to either the *de facto* or the *de jure* concept given above, significant exceptions are foot-noted when they are known. It should be remembered, however, that the necessary detailed information has not been available in many cases. It cannot, therefore, be assumed that figures not thus qualified reflect strict *de facto* or *de jure* definitions.

A possible source of variation within the statistics of a single country or area may arise from the fact that some countries or areas collect information on both the *de facto* and the *de jure* population in, for example, a census, but prepare detailed tabulations for only the *de jure* population. Hence, even though the total population shown in table 3 is *de facto*, the figures shown in the tables presenting various characteristics of the population, for example, urban/rural distribution, age and sex, may be *de jure*. These *de jure* figures are foot-noted when known.

<sup>2</sup> United Nations publication, Sales No. E.80.XVII.8.

### 3.1.2 Urban/rural classification

International comparability of urban/rural distributions is seriously impaired by the wide variation among national definitions of the concept of "urban". The definitions used by individual countries or areas are shown at the end of table 6, and their implications are discussed in the Technical Notes for that table.

### 3.1.3 Age distribution

The classification of population by age is a core element of most analysis, estimation and projection of population statistics. Unfortunately, age data are subject to a number of sources of error and non-comparability. Accordingly, the reliability of age data should be of concern to nearly all users of these statistics.

#### 3.1.3.1 Collection and compilation of age data

Age is the estimated or calculated interval of time between the date of birth and the date of the census, expressed in completed solar years.<sup>3</sup> There are two methods of collecting age data. The first is to obtain the date of birth for each member of the population in a census or survey and then to calculate the completed age of the individual by subtracting the date of birth from the date of enumeration.<sup>4</sup> The second method is to record the individual's completed age at the time of the census, that is to say, age at last birthday. There is some evidence that the former method produces more precise data, but in many countries or areas, socially and culturally, birth dates are not recognized.

The recommended method is to calculate age at last birthday by subtracting the exact date of birth from the date of the census. Some places, however, do not use this method but instead calculate the difference between the year of birth and the year of the census. Classifications of this type are foot-noted whenever possible. They can be identified to a certain extent by a smaller than expected population under one year of age. However, an irregular number of births from one year to the next or age selective omission of infants may obscure the expected population under one year of age.

#### 3.1.3.2 Errors in age data

Errors in age data may be due to a variety of causes, including ignorance of correct age; reporting years of age in terms of a calendar concept other than completed solar years since birth,<sup>5</sup> carelessness in reporting and recording age; a general tendency to state age in figures

ending in certain digits (such as zero, two, five and eight); a tendency to exaggerate length of life at advanced ages; possibly subconscious aversion to certain numbers and wilful misrepresentations arising from motives of an economic, social, political or purely personal character. These reasons for errors in reported age data are common to most investigations of age and to most countries or areas, and they may impair comparability to a marked degree.

As a result of the above-mentioned difficulties, the age-sex distribution of population in many countries or areas shows irregularities which may be summarized as follows: (1) a deficiency in number of infants and young children, (2) a concentration at ages ending with zero and five (that is, 5, 10, 15, 20...), (3) a preference for even ages (for example, 10, 12, 14...) over odd ages (for example, 11, 13, 15...), (4) unexpectedly large differences between the frequency of males and females at certain ages, and (5) unaccountably large differences between the frequencies in adjacent age groups. Comparison of identical age-sex cohorts from successive censuses, as well as study of the age-sex composition of each census, may reveal these and other inconsistencies, some of which in varying degree are characteristic of even the most modern censuses.

#### 3.1.3.3 Evaluation of accuracy

To measure the accuracy of data by age on the evidence of irregularities in 5-year groups, an index was devised for presentation in the *Demographic Yearbook 1949-1950*.<sup>6</sup> Although this index was sensitive to various sources of inaccuracy in the data, it could also be affected considerably by real fluctuations in past demographic processes. It could not, therefore, be applied indiscriminately to all types of statistics, unless certain adjustments were made and caution used in the interpretation of results.

The publication of population statistics by single years of age in the *Demographic Yearbook 1955* made it possible to apply a simple, yet highly sensitive, index known as Whipple's Index, or the Index of Concentration,<sup>7</sup> the interpretation of which is relatively free from consideration of factors not connected with the accuracy of age reporting. More refined methods for the measurement of accuracy of distributions by single year of age have been devised, but this particular index was selected for presentation in the *Demographic Yearbook* on the basis of its simplicity and the wide use it has already found in other sources.

<sup>3</sup> *Principles and Recommendations* . . . , para. 2.88.

<sup>4</sup> Alternatively if a population register is used, completed ages are calculated by subtracting the date of birth of individuals listed in the register from a reference date to which the age data pertain.

<sup>5</sup> A source of non-comparability may result from differences in the method of reckoning age, for example, the Western *versus* the Eastern or, as it is usually known, the English *versus* the Chinese system. By the latter, a child is regarded as one year old at birth and his age advances one year at each Chinese New Year. The effect of this system is most obvious at the beginning of the age span where the frequencies in the under-one-year category are markedly understated. The effect on higher age groups is not so apparent. Distributions constructed on this basis are often adjusted before publication, but the possibility of such aberrations should not be excluded when census data by age are compared.

<sup>6</sup> In this index, differences were scored from expected values of ratios between numbers of either sex in the same age group, and numbers of the same sex in adjoining age groups. In compounding the score, allowance had to be made for certain factors such as the effects of past fluctuations in birth rates, of heavy war casualties, and of the smallness of the population itself. A detailed description of the index, with results of its application to the data presented in the 1949-1950 and 1951 issues of the *Demographic Yearbook*, is furnished in *Population Bulletin*, No. 2 (United Nations publication, Sales No. 52.XIII.4), pp. 59-79. The scores obtained from statistics presented in the *Demographic Yearbook 1952* are presented in that issue, and the index has also been briefly explained in that issue, as well as those of 1953 and 1954.

<sup>7</sup> United States, Bureau of the Census, *Thirteenth Census* . . . vol. I (Washington, D.C., U.S. Government Printing Office), pp. 291-292.

Whipple's Index "is obtained by summing the age returns between 23 and 62 years inclusive and finding what percentage is borne by the sum of the returns of years ending with 5 and 0 to one-fifth of the total sum. The results would vary between a minimum of 100, representing no concentration at all, and a maximum of 500, if no returns were recorded with any digits other than the two mentioned."<sup>8</sup>

The index is applicable to all age distributions for which single years are given at least to the age of 62, with the following exceptions: (1) where the data presented are the result of graduation, no irregularity is scored by Whipple's Index, even though the graduated data may still be affected by inaccuracies of a different type; (2) where statistics on age have been derived by reference to the year of birth, and tendencies to round off the birth year would result in an excessive number of ages ending in odd numbers, the frequency of age reporting with terminal digits 5 and 0 is not an adequate measure of their accuracy.

Whipple's Index was applied to a number of the single-year-of-age distributions of population from censuses taken between 1945 and 1954; the ratings achieved by 91 such distributions can be found on pages 18-19 of the *Demographic Yearbook 1960*, as well as in the 1955 and 1956 issues.

The index was computed for the single-year-of-age data from censuses held between 1955 and 1962. The results of this tentative rating of 62 distributions for both sexes combined were published in the *Demographic Yearbook 1963*, page 20.

Whipple's Index was also computed for the single-year-of-age data from censuses held between 1962 and 1973. The results of this tentative rating of 113 distributions for both sexes combined were published in the *Demographic Yearbook 1973*, pages 9-10.

The Index was last computed for single-year-of-age data from censuses held between 1970 and 1979. The results of this tentative rating of 80 distributions, in terms of the age accuracy of specific censuses indicated by year, are shown in the *Demographic Yearbook 1979*.<sup>9</sup>

## 3.2 Methods used to indicate quality of published statistics

To the extent possible, efforts have been made to give the reader an indication of reliability of the statistics published in the *Demographic Yearbook*. This has been approached in several ways. Any information regarding a possible under-enumeration or over-enumeration, coming from a postcensal survey, for example, has been noted in the foot-notes to table 3.<sup>10</sup> Any deviation from full national coverage, as explained in section 2.1 under Geographical Aspects, has also been noted. In addition, national statistical offices have been asked to evaluate the

estimates of total population they submit to the Statistical Office of the United Nations.

### 3.2.1 Quality code for total population estimates

As early as the second issue of the *Yearbook*, that is, the *Demographic Yearbook 1949-1950*, a code was developed to describe the manner in which the estimates of total population were constructed. This code has subsequently been modified and expanded. The present code was instituted in 1958, and it is structured to take into account four elements which have been recognized as affecting the reliability of population estimates: (1) the nature of the base measurement of the population, (2) the time elapsed since the last measurement, (3) the method of time adjustment by which the base figure was brought up to date, and (4) the quality of the time adjustment. The revised code is thus composed of four parts, namely, the nature of the base data, their recency, the nature of the time adjustment, and its quality.<sup>11</sup> The symbols of the code are listed below:

#### Part I. Nature of base data (capital letter)

- A Complete census of individuals.
- B Sample survey.
- C Partial census or partial registration of individuals.
- D Conjecture.
- ... Nature of base data not determined.

#### Part II. Recency of base data (subscript numeral following capital letter)

Numeral indicates time elapsed (in years) since establishment of base figure.

#### Part III. Method of time adjustment (lower-case letter)

- a Adjustment by continuous population register.
- b Adjustment based on calculated balance of births, deaths and migration.
- c Adjustment by assumed rate of population increase.
- d No adjustment: base figure held constant at least two consecutive years.
- ... Method of time adjustment not determined.

#### Part IV. Quality of adjustment for types a and b (numeral following letter a or b)

- 1 Population balance adequately accounted for.
- 2 Adequacy of accounting for population balance not determined but assumed to be adequate.
- 3 Population balance not adequately accounted for.

#### Quality of adjustment for type c (numeral following letter c)

- 1 Two or more censuses taken at decennial intervals or less.
- 2 Two or more censuses taken, but latest interval exceeds a decennium.
- 3 One or no census taken.

In addition to these four points, it would have been desirable to consider the probable error in the base measurement of the population. However, this has not been possible as an indication of it is so rarely available.

### 3.2.2 Treatment of estimates of total population

On the basis of the quality code assessments, the latest official total population estimates are classified as "reliable" or "less reliable" by the Statistical Office of the

<sup>11</sup> For detailed explanation of the content of each category of the code, see *Demographic Yearbook 1964* (United Nations publication, Sales No. 65.XIII.1).

<sup>8</sup> J. T. Marten, *Census of India, 1921*, vol. I, part I (Calcutta, 1924), pp. 126-127.

<sup>9</sup> United Nations publication, Sales No. E/F.8/XIII.1, pp. 13-14.

<sup>10</sup> For further discussion, see *Demographic Yearbook 1962* (United Nations publication, Sales No. 63.XIII.1), chap. I.



United Nations. "Reliable" data are set in roman type while "less reliable" data are set in italics. Two criteria are used in establishing reliability.

To begin with, reliable estimates can be defined in terms of the "nature of base data". Reliable estimates are those having their origin in a population census (coded A); those based on a sample survey representing the majority of the population (coded B); and, provided the total population is under 1 000 persons, those obtained by annual administrative counting of population (coded C).

A second criterion of reliability is the "method of time adjustment". Time adjustment by the population-register method (coded a), or by the balancing equation method (coded b), is considered reliable, provided the components of the adjusting factors are adequately accounted for. Reliable accounting is defined for this purpose as combinations of (a) and (b) with (1) and (2). Less reliable time adjustment includes updating by assumed rates of population growth (coded c), no updating (coded d), and method unknown (coded ...).

Population estimates which are considered reliable are those which are classified as reliable according to the nature of the base data and in addition are considered reliable on the basis of the method of time adjustment. These estimates are shown in roman type. Estimates which are considered less reliable are shown in italics.

### 3.2.3 Treatment of time series of population estimates

When a series of mid-year population estimates are presented, the same indication of quality is shown for the

entire series as was determined for the latest estimate. The quality is indicated by the type face employed.

No attempt has been made to split the series even though it is evident that in cases where the data are now considered reliable, in earlier years, many may have been considerably less reliable than the current classification implies. Thus it will be evident that this method overstates the probable reliability of the time series in many cases. It may also understate the reliability of estimates for years immediately preceding or following a census enumeration.

### 3.2.4 Treatment of estimated distributions by age and other demographic characteristics

Estimates of the age-sex distribution of population may be constructed by two major methods: (1) by applying the specific components of population change to each age-sex group of the population as enumerated at the time of the census and (2) by distributing the total estimated for a postcensal year proportionately according to the age-sex structure at the time of the census. Estimates constructed by the latter method are not published in the *Demographic Yearbook*.

Among those published, estimated age-sex distributions are categorized as "reliable" or "less reliable" according to the method of construction established for the latest estimate of total mid-year population. Hence, the quality designation of the total figure, as determined by the code, is considered to apply also to the whole distribution by age and sex, and the data are set in italic or roman type, as appropriate, on this basis alone. Further evaluation of detailed age structure data has not been undertaken to date.

## 4. VITAL STATISTICS

For purposes of the *Demographic Yearbook*, vital statistics have been defined as statistics of live birth, death, foetal death, marriage and divorce.

In this issue of the *Yearbook*, the basic Vital Statistics tables deal with natality, nuptiality and divorce. In the second part of this *Yearbook*, devoted to mortality, as the special topic, tables present detailed data on abortion, foetal mortality, perinatal, infant and maternal mortality. Also included are general mortality tables showing total deaths, and crude death rates, as well as specific rates by age, sex and urban and rural residence and by marital status, age and sex. Tables including deaths and death rates by cause and sex and deaths by cause, age and sex are presented. In addition, three tables show the following life table functions for the two most recent years available: a) expectation of life (in years), b) life table mortality and c) number of survivors.

### 4.1 Sources of variation of data

Most of the vital statistics data published in this *Yearbook* come from national civil registration systems. The completeness and the accuracy of the data which these

systems produce vary from one country or area to another.<sup>12</sup>

The provision for a national civil registration system is not universal, and in some cases, the registration system covers only certain vital events. For example, in some countries or areas only births and deaths are registered. There are also differences in the effectiveness with which national laws pertaining to civil registration operate in the various countries or areas. The manner in which the law is implemented and the degree to which the public complies with the legislation determine the reliability of the vital statistics obtained from the civil registers.

It should be noted that some statistics for marriage and divorce are obtained from sources other than civil registers. For example, in some countries or areas, the only source for data on marriages is church registers. Divorce statistics, on the other hand, are obtained from

<sup>12</sup> For an analysis of the regional availability of birth and death statistics, see *Population Bulletin of the United Nations, No.6* (United Nations publication, Sales No. 62.XIII.2) and *Population Bulletin of the United Nations, No.7* (United Nations publication, Sales No. 64.XIII.2).



court records and/or civil registers according to national practice. The actual compilation of these statistics may be the responsibility of the civil registrar, the national statistical office or other government offices.

As well as these factors, others affecting the international comparability of vital statistics are much the same as those which must be considered in evaluating the variations in population statistics. Differences in statistical definitions of vital events, differences in geographical and ethnic coverage of the data and diverse tabulation procedures—all these may influence comparability.

In addition to vital statistics from civil registers, some vital statistics published in the *Yearbook* are official estimates. These estimates are frequently from sample surveys. As such, their comparability may be affected by the completeness of reporting in household surveys, non-sampling and sampling errors and other sources of bias. Estimates prepared by the Population Division of the United Nations Secretariat have been used in certain instances to supplement official data. Both official and United Nations estimates are noted when they appear in the tables.

Readers interested in more detailed information on standards for vital statistics should consult the *Principles and Recommendations for a Vital Statistics System*.<sup>13</sup> The *Handbook of Vital Statistics Methods*,<sup>14</sup> which was published in connexion with the 1953 edition of the *Principles*,<sup>15</sup> provides detailed information on the sources of error in vital statistics data and the application of recommendations to national systems.

For a discussion of the effects of sampling and response errors in the interview-type inquiry, readers should consult *Methodology of Demographic Sample Surveys*.<sup>16</sup>

#### 4.1.1 Statistical definition of events

An important source of variation lies in the statistical definition of each vital event. The *Demographic Yearbook* attempts to collect data on vital events, using the standard definitions put forth in paragraph 46 of *Principles and Recommendations for a Vital Statistics System*. These are as follows:

4.1.1.1 *LIVE BIRTH* is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live-born regardless of gestational age.

<sup>13</sup> United Nations publication, Sales No. E.73.XVII.9.

<sup>14</sup> United Nations publication, Sales No. 55.XVII.1. A forthcoming revision of the *Handbook* will discuss the new principles and recommendations in greater detail.

<sup>15</sup> *Principles for a Vital Statistics System: Recommendations for the Improvement and Standardization of Vital Statistics* (United Nations publication, Sales No. 53.XVII.8).

<sup>16</sup> United Nations publication, Sales No. E.71.XVII.11, chap. VII and pp. 94-142.

4.1.1.2 *DEATH* is the permanent disappearance of all evidence of life at any time after live birth has taken place (postnatal cessation of vital functions without capability of resuscitation). This definition therefore excludes foetal deaths.

4.1.1.3 *FOETAL DEATH* is death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation the foetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Late foetal deaths are those of twenty-eight or more completed weeks of gestation. These are synonymous with the events reported under the pre-1950 term stillbirth.

*ABORTION* is defined, with reference to the woman, as any interruption of pregnancy before 28 weeks of gestation with a dead foetus. There are two major categories of abortion: spontaneous and induced. Induced abortions are those initiated by deliberate action undertaken with the intention of terminating pregnancy; all other abortions are considered as spontaneous.

4.1.1.4 *MARRIAGE* is the act, ceremony or process by which the legal relationship of husband and wife is constituted. The legality of the union may be established by civil, religious, or other means as recognized by the laws of each country.

4.1.1.5 *DIVORCE* is a final legal dissolution of a marriage, that is, that separation of husband and wife which confers on the parties the right to remarriage under civil, religious and/or other provisions, according to the laws of each country.

#### 4.1.2 Problems relating to standard definitions

A basic problem affecting international comparability of vital statistics is deviation from standard definitions of vital events. An example of this can be seen in the cases of live births and foetal deaths.<sup>17</sup> In some countries or areas, an infant must survive for at least 24 hours before it can be inscribed in the live-birth register. Infants who die before the expiration of the 24-hour period are classified as late foetal deaths and, barring special tabulation procedures, they would not be counted as either live births or as deaths. Similarly, in several other countries or areas, those infants who are born alive but who die before registration of their birth are also considered as late foetal deaths.

Unless special tabulation procedures are adopted in such cases, the live-birth and death statistics will both be deficient by the number of these infants, while the incidence of late foetal deaths will be increased by the same amount. Hence the infant mortality rate is underestimated. Although both components (infant deaths

<sup>17</sup> For more information on historical and legal background on the use of differing definitions of live births and foetal deaths, comparisons of definitions used as of 1 January 1950, and evaluation of the effects of these differences on the calculation of various rates, see *Handbook of Vital Statistics Methods*, chap. IV.