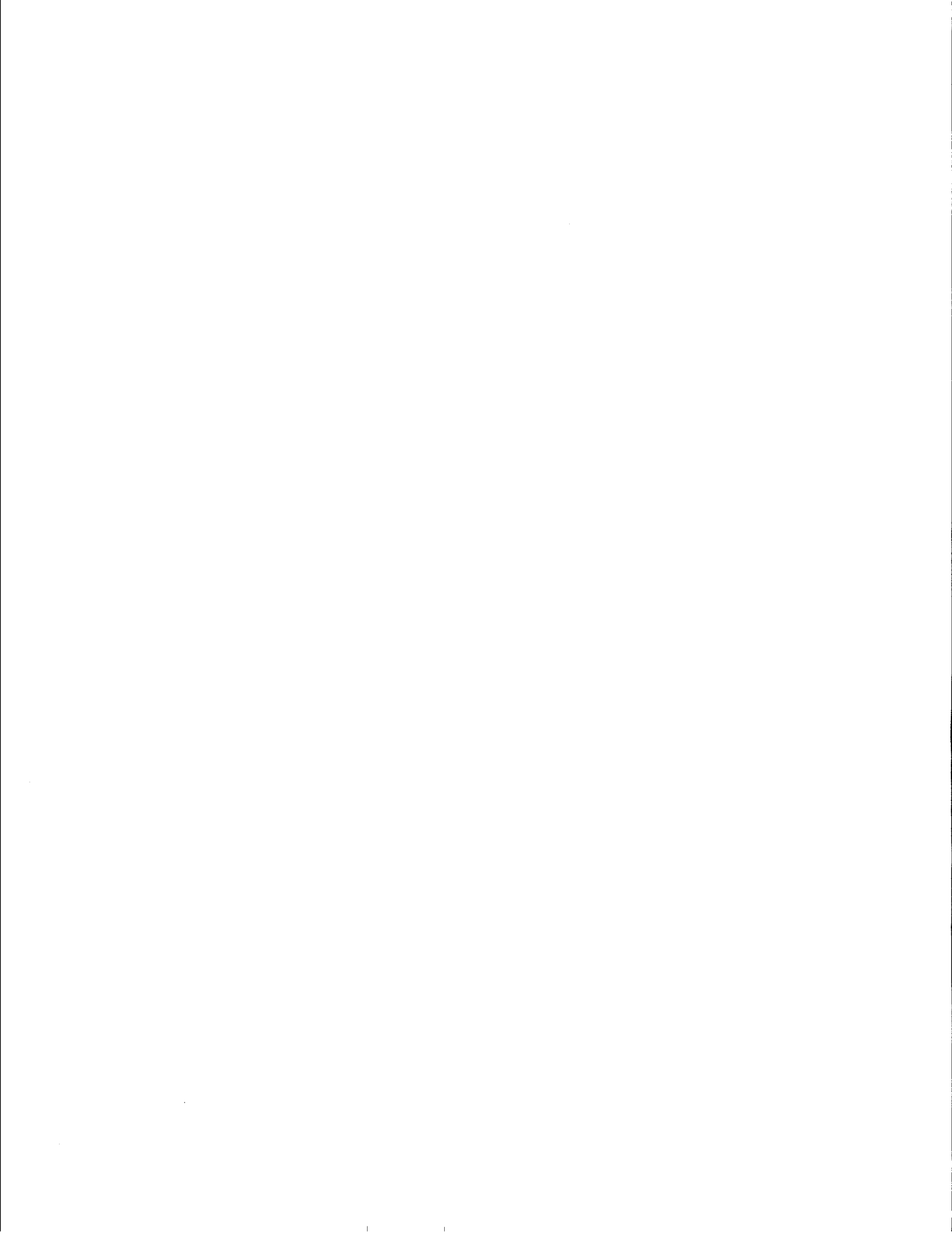


PREFACE

The present publication provides guidance for researchers preparing subnational population projections, that is, population projections for regions within countries. The most difficult issue in undertaking such projections is the preparation of baseline estimates and projection assumptions for interregional migrations. With particular emphasis on common data situations in developing countries, this publication overviews and suggests methods suited for preparing these migration data.

The publication reviews the different types of data generally available for estimating internal migration in developing countries, delineates the methods for transforming different types of data into the form necessary for subnational population projections, discusses the formulation of migration assumptions and compares the advantages and disadvantages of different data sources and methods for preparing migration input for subnational projections.

Grateful acknowledgement is due to Alden Speare of Brown University, who prepared this report on behalf of the United Nations Secretariat.



CONTENTS

Page

Preface	iii
Explanatory notes	vii

INTRODUCTION	1
------------------------	---

Chapter

I. REVIEW OF SOURCES OF DATA FOR MIGRATION PROJECTIONS	3
A. Censuses	3
B. Surveys	4
C. Registration data	4
II. MEASUREMENT OF THE VOLUME OF MIGRATION	6
A. Migration data from a census or survey question on residence at a fixed prior time	6
B. Migration estimated from census questions on previous place of residence and duration of residence	10
C. Estimation of net migration by census survival-ratio method	14
III. ESTIMATION OF THE DISTRIBUTION OF MIGRANTS BY AGE AND SEX	19
A. Age and sex distributions from a census with a question on place of residence at a fixed prior date	19
B. Age distributions from census data on place of previous residence and duration of residence	21
C. Age distributions from surveys	24
D. Age distributions from registers	25
E. Use of model migration schedules	25
IV. PROJECTION OF BASELINE MIGRATION INTO THE FUTURE	29
A. Alternative strategies for projecting migration	29
B. Adjustment of separate regional projections for national consistency	31
V. RECOMMENDATIONS FOR DATA COLLECTION	34

ANNEXES

I. Example of modified multiregional projections	37
--	----

<i>No.</i>	<i>Page</i>
II. Model migration age schedules	41
References.	45

TABLES

1. Interregional migration in five years before 1980 census, population aged 5 years or over, Indonesia	8
2. Numbers of in-migrants and out-migrants for provinces of Argentina based on place of residence in 1975 and 1980, according to 1980 census	9
3. Female migrants to the province of East Java, Indonesia, by province of previous residence and duration, 1971	11
4. Estimation of lifetime return migration for provinces and regions of Indonesia, 1971	13
5. Adjustment of migration based on last residence, Indonesia, 1966-1971	14
6. Estimation of net migration of females, Manila, 1960-1970	16
7. Estimated five-year net migration of females, Manila, 1965-1970	17
8. In-migrants and out-migrants, by age and sex, Buenos Aires, 1975-1980, according to census of Argentina	20
9. Use of model age migration schedule to divide broad age groups, male migration to Buenos Aires, 1980	20
10. Female migrants to the province of East Java, Indonesia, by age and duration of residence in 1971	21
11. In-migration with durations from zero to four years, by age and sex, for major destinations of migrants from East Java, according to 1971 census of Indonesia	22
12. Calculation of gross and net migration for females by age, East Java, Indonesia, 1971	23
13. Mobility by region and age, United States of America, 1980-1985	24
14. Estimates and projections of the population of the United States of America by region, 1988-2010	30
15. Interregional migration in five years before and after the 1980 census in Indonesia, population aged 5 or over	32
16. Adjustment of projected in-migrants and out-migrants; regions of Indonesia	33

ANNEX TABLES

A.1 Application of model migration schedules to Indonesian females	37
A.2 Multiregional projections for females in three regions of Indonesia, 1980-1985	38
A.3 Five-year model migration rates for males	42
A.4 Five-year model migration rates for females	43

FIGURE

Model migration rates by age, males	27
---	----

Explanatory notes

Symbols of United Nations documents are composed of capital letters combined with figures.

The following symbols have been used in the tables throughout the report:

Two dots (..) indicate that the data are not available or are not separately reported.

An em dash (--) indicates that the amount is nil or negligible.

A hyphen (-) indicates that the item is not applicable.

A minus sign (-) before a number indicates a decrease.

A point (.) is used to indicate decimals.

A slash (/) indicates a crop year or financial year, e.g., 1988/89.

Use of a hyphen (-) between dates representing years (e.g., 1984-1985), signifies the full period involved, including the beginning and end years.

Details and percentages in tables do not necessarily add to totals because of rounding.

References to "dollars" (\$) indicates United States dollars, unless otherwise stated.

The term "billion" signifies a thousand million.