

# UNESCO/GAB

Toolkit on Gender Indicators in Engineering, Science and Technology

Sophia Huyer and Gunnar Westholm

# Table of Contents

Foreword

Introduction

Chapter One

Introductory Overview: Gender Indicators for EST

#### Introduction

- A. Women's Contributions to Science and Technology for Development
  - 1. Why gender? Women's contributions to national development
  - 2. Undervaluing women's work
  - 3. Women's contributions in other sectors
  - 4. Why gender, science and development?
  - 5. Why the toolkit is needed: no data, no visibility; no visibility, no priority
- B. Gendering Statistics and Indicators in Engineering Science and Technology
  - 1. Science and technology statistics
  - 2. Sources of data on women's participation in S&T
  - 3. Defining science and technology activities and personnel for statistical purposes
  - 4. Science and technology professions
  - 5. S&T development and transfer: meeting the needs of society

## Chapter Two

The Leaky Pipeline: Gender Issues in Engineering, Science and Technology

Introduction: A Gender Perspective

A. The Leaky Pipeline

- 1. Socio-cultural attitudes
- 2. Education
- 3. Academic Positions

B. International Initiatives in Gender, Engineering, Science and Technology

Chapter Three

# Measuring Science And Technology Activities: Principal International Guidelines

#### Introduction

A. Science and Technology Activities (STA)

1. Research and (Experimental) Development (R&D)

2. Scientific and Technical Education and Training (STET) at Broadly the Third Level

3. Scientific and Technological Services (STS)

B. S&T as Fields of Study (Fields of Education)/Fields of Science
1. The International Standard Classification of Education —
ISCED

## Chapter Four

## Measuring Science And Technology Personnel: Measurements and Classifications

A. Principal International Guidelines for Measuring S&T Personnel

1. UNESCO: Science and Technology Personnel

2. OECD Frascati Manual: R&D Personnel

3. OECD/Eurostat Canberra Manual: Human Resources for S&T

B. Categories of S&T Personnel

1. Principal Aggregates of S&T Personnel

C. Some Basic Concepts for S&T Personnel Data and Indicators

D. The International Standard Classification of Occupations (ISCO)

E. Breakdown of S&T Personnel by Occupation, Education and Qualification

1. Occupation Classes

2. Education/Formal Qualification

F. Measuring the Activities of Science and Technology Personnel

1. Stocks and Flows of S&T Personnel

2. Status of the S&T Labour Force

- 3. Other Variables for the Collection of S&T Data
- 4. Gender Statistics and Indicators

#### Chapter Five

#### Collecting Gender-Disaggregated Data: Case Studies and Models

# Introduction

- A. Gender Indicators
  - 1. Indicators of Participation

2. Selecting indicators

B. Developing gender-disaggregated indicators in S&T

C. Education Statistics and Indicators

- 1. The Basic UNESCO Education and R&D Statistics
- 2. OECD Education Statistics and Indicators
- D. Gender data and indicators at higher levels

1. Undergraduate retention of women students

- 2. Participation of women in science and technology careers
- 3. Women's Participation in Science and Technology Decision

Making

- E. Indicators and statistics on women's contributions to agricultural production
  - 1. Farming systems or whole farm research
  - 2. Resources: Access and Control
  - 3. Benefits
- F. Collecting data on women's participation in the informal sector
  - 1. Informal Sector
  - 2. Home-based work
  - 3. Street vendors

#### References

Appendix Sources of Gender-Disaggregated Data in Engineering, Science and Technology

- A. United Nations and International Government Organisations
- B. Regional Agencies
- C. Standard National Sources with Breakdowns by Gender
  - 1. Overview: Types of Available Data
  - 2. Special Gender Indicators
- D. Web Sites and Internet Resources
- E. Research Institutions and Programmes
  - United States Primary Non-NSF Sources
     United States Primary NSF Sources

  - 3. International
- E. Women's Science and Engineering Organisations
  - 1. International
  - 2. Regional
  - 3. National
- F. Women Inventors' Associations