

NISTEP Report No. 37

Science and Technology Indicators: 1994

A Systematic Analysis of Science and Technology Activities in Japan
January 1995

Science and Technology Indicator Project Team

National Institute of Science and Technology Policy (NISTEP)

Science and Technology Agency, Japan

Translation from Japanese version

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Preface

The National Institute of Science and Technology Policy developed indicators showing the state of science and technology in Japan and presented these in September 1991 as NISTEP Report No. 19, "Systematic Science and Technology Indicators". These indicators systematically organized the scientific and technological activities of Japan and this report was the first to make the overall state of these activities quantitatively comprehensible. It has been more than three years since that report, and it was decided to release a 1994 report on scientific and technological indicators on the basis of research results since the prior report. This new report maintains the indicator structure of the previous report while adding new indicators and updating data on existing indicators. As a result, there have been some changes made to Chapter 2 ("Education and Human Resource Development for Science and Technology"), Chapter 7 ("Public Opinion on Science and Technology"), and Chapter 9 ("Regional R&D

Activities”). The issue of composite indicators came up as a future consideration during the preparation of the earlier report, and an outline of a test of certain composite indicators has been given in Chapter 10.

Science and technology indicators cover a wide range of fields, and in compiling them, a project team was formed comprising research fellows from groups within our own institute as well as guest research fellows. This team discussed the overall structure and characteristics of the indicators and chose to delegate the explanation of individual indicators to specific team members. Our institute is grateful to Professor Fujio Niwa of Saitama University, presently affiliated with our institute and in charge of generating the indicators for the previous report, for his invaluable guidance in developing this report’s indicators.

We hope that, in the ever-changing world of science and technology, this report will be of some assistance in considering future directions for science and technology in Japan.

January 1995

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Explanatory Notes

1. All descriptions, figures, tables, etc., except for diagrams whose source has been

specifically mentioned, are the work of the National Institute of Science and

Technology Policy.

2. Information sources for indicators listed below figures and tables in this report are

defined as follows:

Sources: Original source for indicator data or original provider of data.

In this report, figures and tables have been prepared on the basis of data from these sources; the expressions "prepared from" or "compiled from" will be used when considerable processing of data has been carried out.

Duplication: Figures duplicated from other publications.

3. Commentary on the text is marked by (1) within the text, and the commentary itself is given later in an appropriate spot.

4. References are given at the end of the chapter. References are marked by [1] within the text.

5. For yearly data, survey times and periods may differ by country or type of statistics.

Distinctions between calendar and fiscal years are not necessarily made in the same manner as in the original source but rather expressed in a way appropriate for showing the characteristics of the data and for international comparisons.

6. Germany in this report, in the absence of any specific mention, refers to West Germany until 1990 and to the reunified Germany from 1991.