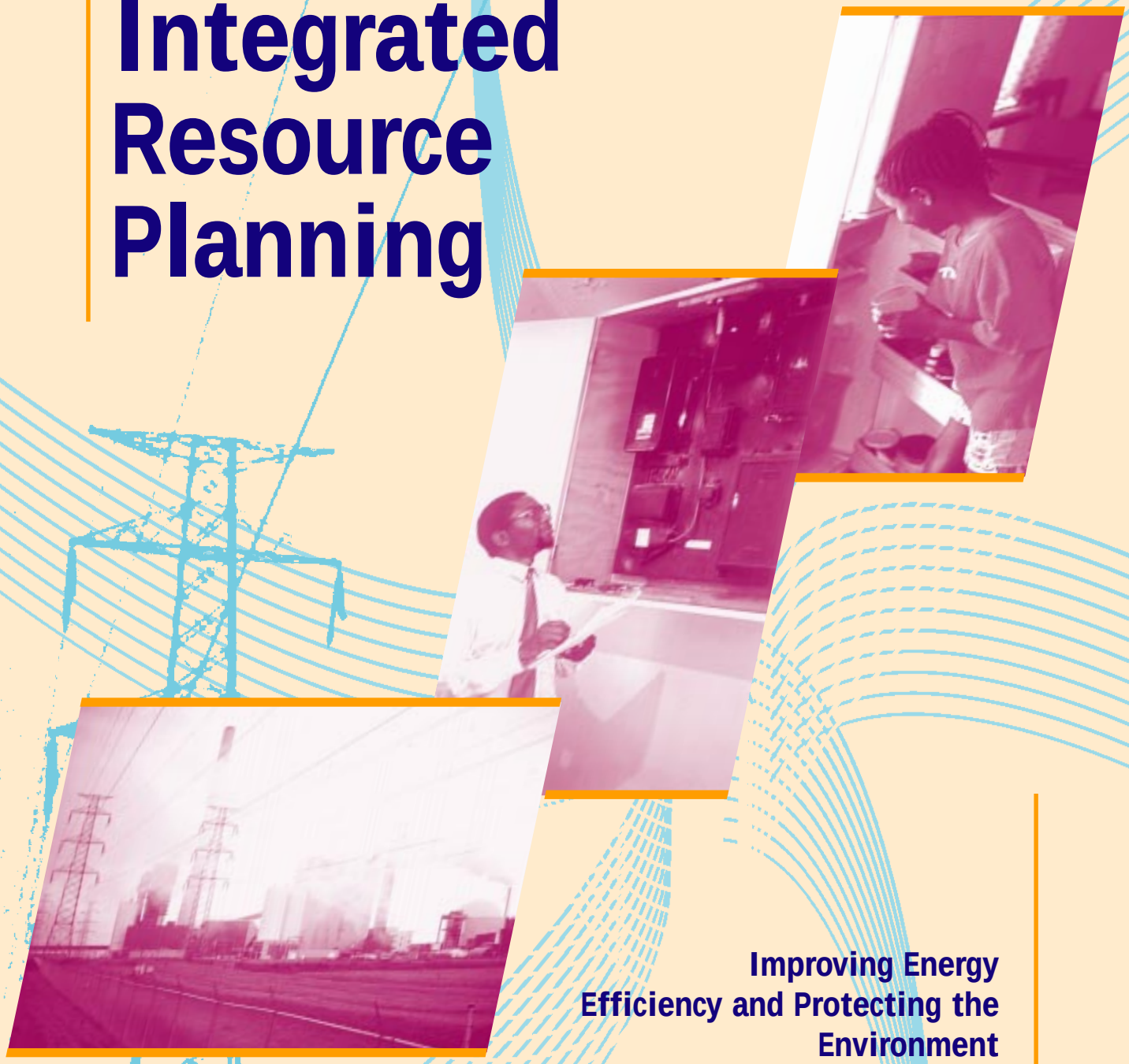
Tools and Methods for

Integrated Resource Planning



Improving Energy Efficiency and Protecting the Environment

Joel N. Swisher
Gilberto de Martino Jannuzzi
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UNEP

UNEP Collaborating Centre on Energy and Environment
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IMPROVING ENERGY EFFICIENCY AND PROTECTING THE ENVIRONMENT

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Foreword

The improvement in the efficiency of energy use ("energy conservation") in the OECD countries after the first oil crisis in 1973 was one of the powerful instruments used to reduce the industrialized countries' dependence on oil imports. As a result, gross domestic product (GDP) continued to grow while energy consumption remained approximately constant in the period 1973-1988. The old cherished idea that economic growth and energy consumption go hand-in-hand was shattered, and the "delinking" of them became the object of many studies and the basis of energy policies in numerous countries.

In this book, Joel Swisher, Gilberto Jannuzzi, and Robert Redlinger have assembled all the necessary information for graduate students and utility managers to learn the techniques for doing their own calculations and analyzing the cost effectiveness of energy conservation measures against supply-side options. The book addresses "tools and methods for integrated resource planning" with particular attention toward improving energy efficiency in developing countries. It discusses IRP (integrated resource planning), DSM (demand-side management), environmental externalities, the competitiveness of renewables, barriers to energy efficiency, and the like. It is not merely a recitation of well-known ideas and proposals, but rather goes into the details of calculating savings, cost-effectiveness, comparing options, etc., with all the algorithms and spreadsheets necessary.

This book will prove very useful to anyone in the energy field interested in looking into the details of calculations and learning how to do it themselves.

Professor José Goldemberg
Universidade de São Paulo, Brazil
August, 1997