

Third World Academy of Sciences

# Computers and Informatics in Developing Countries

Edited by Mohan Munasinghe

Butterworths

---

## Contents

Foreword	ix
Acknowledgements	xi
Contributors	xiii
1. Introduction	1
2. Computer and Informatics Policy and Issues for Third World Development <i>Mohan Munasinghe</i>	8
3. Scope for South-North Collaboration in the Area of Computers and Informatics <i>Ines Wesley-Tanaskovic</i>	41
4. Review of Selected Donor Agency Policies on Computers and Informatics in Third World Countries <i>Michael Dow</i>	45
5. Application of Information Technology to Development <i>M.V. Pitke</i>	64
6. Educational Computing Technology Transfer: What ICCI Should Do <i>Alvaro Galvis</i>	71
7. Networking and Development <i>Herbert Budd</i>	87
8. International Data Communication and Third World Applications: The IDRC Experience <i>David Balson, Robert Valantin and Martha Stone</i>	94
9. Computers and Informatics in Indonesia: Present and Future Prospects <i>A.J. Surjadi and J.F.P. Luhukay</i>	114
Annex 1: Conference Programme	123
Annex 2: List of Participants and Contributors	125

---

## Foreword

Over 3.5 billion people live in the Third World today, most of them experiencing great hardship. At the same time, the rapid advances made by modern science and technology have provided us with the means of alleviating many of the problems faced by the developing countries. The science of today provides the basic foundation on which the technology of tomorrow must be built, which in turn is the essential prerequisite for economic development and progress.

The growing economic disparity between the developing and developed worlds may be explained, to a large extent, by the corresponding science and technology gap between these two groups of countries. Both sets of countries devote comparable fractions of their gross national product (GNP) to areas like defense, health and education. However, there is a startling difference when support for basic science is considered. Whereas the industrialized countries spend about 4% of their educational budgets for science and technology, the Third World collectively allocates less than 0.5% of their educational spending for this purpose. If the developing countries could achieve the 4% target, about \$3.5 billion would become available for science and technology, which in turn will help to accelerate development.

Both individually and collectively, the South must actively participate in and contribute to the worldwide progress in areas like microelectronics and biotechnology. The Third World Academy of Sciences (TWAS) is involved in creating a framework for the developing countries to provide inputs and sit at the global negotiating tables where major scientific policies and projects are discussed, instead of playing the role of mere spectators.

One such key initiative is the international roundtable conference held in 1987, on which this volume is based. It was the logical follow-up to a proposal made by Professor Mohan Munasinghe at the TWAS first General Conference in Trieste in 1985 and unanimously endorsed at the gathering -- to promote the creation of a new international centre for computers and informatics (ICCI). The results of the roundtable conference, based on the deliberations of a distinguished group of international experts, has provided authoritative confirmation of the need for such a centre, based on the network principle. The TWAS, together with our co-sponsor -- the United Nations University, continues to support the efforts of the expert group, as they pursue this important endeavour.

*Professor Abdus Salam*  
*President*  
*Third World Academy of Sciences*