

ISSUES OF DEVELOPMENT: TOWARDS A NEW ROLE FOR SCIENCE AND TECHNOLOGY

Science, Technology and Global Problems

Edited by

MAURICE GOLDSMITH, *Science Policy Foundation, London*
and

ALEXANDER KING, *International Federation of Institutes for
Advanced Study, Paris*



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**Proceedings of an International Symposium
on Science and Technology for Development,
Singapore, January 1979**

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Contents

Introduction M. GOLDSMITH and A. KING	ix
List of Participants	xiii
Acknowledgements	xxiii
OVERVIEWS	
Science and Technology: Resources for Human and Economic Development T. MALONE	1
Science and Technology for Development A. KING and A. LEMMA	7
Address by Dr. F. Mayor DEPUTY DIRECTOR GENERAL, UNESCO	33
Declaration of the Symposium on Science and Technology for Development (SINGAPORE 22-26 JANUARY 1979)	39
International Cooperation in Science and Technology for Development D. A. BEKOE	41
Recommendations for a Continuing Programme by the Scientific Non- governmental Organizations and on Institutional Arrangements T. R. ODHIAMBO	47
Note on the Structure of the Symposium	51
INDIGENOUS DEVELOPMENT	
Development of an Indigenous Capacity for Science and Technology - Discussion Report B. AWE	53

Science, Technology and Development in a New Social Order A. RAHMAN	57
Development of Indigenous Science and Technology Competence and Infrastructure - The Philippine Experience M. S. MAGNO	71
Science and Technology for Mass Based Development P. van RENSBURG	89
Science and Technology in Developing Countries: Obstacles to Progress D. H. IRVINE	99
International Transfer of Technology, Technological Dependence and Development Strategies: Issues for Debate at UNCSTD D. ERNST	105
Transfer of Technology and the Selectivity of Appropriate Science and Technology K. BEHBEHANI and M. S. MARZOUK	119
EDUCATION AND TRAINING	
Education and Training: Discussion Report S. RAMAKRISHNA and F. STAICU	123
Some Aspects of Education and Training for Development with Special Reference to River Basin Management D. HUGHES-EVANS and T. HARVEY	127
Non-formal Education for Technological Development R. KUMAR	135
Science Education and Development S. RADHAKRISHNA	141
INFORMATION AND COMMUNICATION	
Information and Communication: Discussion Report C. KEREN	151
The Technology of Communication Media and the Challenge of Development H. R. CASSIRER	155
FOOD, POPULATION AND EMPLOYMENT	
Population and Employment: Discussion Report R. REVELL	163
Food and Employment: Discussion Report J. D. DRILON JR. and O. GALAL	167
Food and Population: Discussion Report J. H. HULSE and R. de ZEEUW	171

Bioresource Potential: Discussion Report C. G. HEDEN and Y. YUTHAVONG	175
Food and Agricultural Research: its Past and Future Contribution to Agriculture, Social and Economic Development H. HULSE and O. E. PEARSON	179
Some Aspects of the World Food Problem W. TIMS and D. de ZEEUW	197
ROLE OF SCIENTISTS AND TECHNOLOGISTS	
Role of Scientists and Technologists in the Development Process: Discussion Report Y. NAYUDAMMA	205
Science and Technology Policies and Institutions: Discussion Report H-K. KIM and F. R. SAGASTI	209
The Role of Social Scientists in the Development Process: Discussion Report S. SZALAI and R. LAMBERT	213
The Role of the Basic Sciences in the Development Process: Discussion Report D. A. BEKOE	217
The Transdisciplinary Nature of Development Processes: Discussion Report L. K. TATT	219
The Role of Scientists and Technologists in Development of the Less Developed Countries M. INNAS ALI	221
CHEMRAWN: Chemical Research Applied to World Needs B. W. ROSSITER	225
The Role of Social Scientists in the Development Process R. D. LAMBERT	231
SOCIO-CULTURAL RELATIONS	
Research and Development (including Management and Linkages with Education, Government and Production Systems): Discussion Report J. AYALA and H. CHARLES	235
Technology/Engineering (Including Technology Transfer): Discussion Report J. PICKETT and B. C. SEKHAR	239
Social, Political, Economic, Cultural and other Contexts of Development: Discussion Report P. FIGANIOL	243

Leadership for Human Dignity: The Development Challenge to Scientific Professionals E. CANTORE	247
INTERNATIONAL COOPERATION	
Proposal for a Review of Existing Capabilities and Experience in Scientific and Technological Cooperation Between Developing and Industrialized Countries K. GOTTSTEIN	259
Proposal to Help Developing Countries to Articulate their Real Needs and Wants S. SZALAI	261
Cooperation between the Scientists of Developing and Developed Countries I. MALECKI	263
Author Index	271
Subject Index	273

Introduction

MAURICE GOLDSMITH AND ALEXANDER KING

In the past two decades, great changes have taken place outside the important, but numerically small industrialized countries. Decolonization has been largely achieved but many fear that a political dependence has been replaced by an economic and technological neo-colonialism. We all agree that the disparities in wealth between the rich and the poor nations are intolerable, and that the existence of nearly a billion underprivileged and hungry people calls for rapid remedy.

Hence, the aid programmes and the United Nations Development Decades seek by the injection of capital and technology to reduce the gap. It seemed self-evident that the technology which had developed in the industrialized countries and greatly enhanced material well-being could transform life in the developing countries - and in a very short time.

Alas, the rich have become richer, and the disparities seem to widen. Of course, there have been considerable gains within the developing world. Countries such as Brazil, with great natural resources and considerable infrastructure, are on the threshold of the developed world; first Japan, and later other countries of Asia such as Korea and Singapore, have established modern, science-based industries and general prosperity. The Third World, as a whole, has had higher rates of economic growth than the developed countries in recent years, but they start from a low base line, and much of the benefit has been absorbed by population increase and the purchase of arms.

It was against this background that the United Nations decided to convene a major inter-governmental conference on science and technology for development (UNCSTD) to take place in Vienna in August 1979. This follows a series of world meetings which began with the Stockholm Conference on Environment. UNCSTD is to be welcomed if it succeeds in demonstrating the potentialities of science and technology, their limitations, and the conditions for their rapid and effective application in the service of humankind. The conference is conceived, not merely as an end in itself, but as the culmination of preparatory activities now nearing completion. For example, each member of the United Nations has been requested to prepare a position paper expressing its views on how science and technology can be better evolved and applied for national purposes; and regional meetings have taken place to integrate the views and needs of the individual countries of the region.

The present moment is thus particularly propitious for a reassessment of the role of science and technology in promoting development, of how the world repertory of knowledge can be utilized effectively for the general good, and how the international arrangements of science can be improved.

There is much to be done. Well over 90% of the world's research and development is undertaken in developed countries. Thus, only a marginal proportion occurs in the Third World, with even smaller amounts of development of original technology. International cooperation in research, for which there were ambitious schemes in the immediate post-war period, has been singularly unimpressive, with the exception of a few inter-European schemes. The science programmes of the Specialized Agencies of the United Nations, while useful, are somewhat feeble and disparate, and there is an obvious need for coordination and common planning both between, and within, the various units of the United Nations family.

Within the aid programmes, science and technology has been mainly of an auxiliary, problem-solving type. The main emphasis has been on the transfer of specific technological processes from the industrialized countries. There has not been sufficient concern for the building-up in each receiving country of an indigenous competence to ensure that the imported technologies were the most appropriate to meet local economic and social needs, that there was sufficient skilled manpower to assure their assimilation, and to prepare the ground for original innovation in the future. In many of the developed countries the scientific elements of aids have remained somewhat remote from the main national activities, and seldom have been intimately articulated within the national science policy.

When plans for UNCSTD began to mature, and independent scientists in many countries were involved in the elaboration of national position papers, many began to realize that their knowledge and experiences were being insufficiently utilized. A few individuals concluded that an overt and coherent demonstration of concern by the world scientific community was essential, and that the worldwide interest at the moment provided a unique opportunity to suggest that the world of science, with its understanding of the promise and constraints of research and development, its knowledge of the multi-faceted nature of the technological innovation process, and its awareness of the vastly different tempo of research from that of politics, might offer to the governments a new partnership for world development.

The International Council of Scientific Unions, which had already gained experience of development needs through its COSTED committee, called a series of *ad hoc* meetings of representatives of many of the Non-Governmental Organizations (NGOs) to consider whether an international symposium on science and technology for development could be useful, possibly leading to continued activities after the Vienna Conference. As a result, a Steering Committee was set up consisting of:

Chairman: Thomas F. Malone; Convenor: Maurice Goldsmith;
Vice-Chairmen: Alexander King, Thomas Odhiambo, Lee Kum
Tatt; and, B. Awe, M. Kassas, A.A. Kokoshin, K. Husimi,
Y. Nayudamma, V.L. Urquidi.

The Committee made preparations for the Symposium. This was conceived as a contribution to UNCSTD, but considered as valid and necessary in its own right. Nineteen NGOs representing science in the broadest sense, the natural sciences and engineering, the social sciences and the humanities, gave moral support. This was itself a unique move, since never before had these bodies, so representative of the world intellectual community, united in a common undertaking. Singapore was selected as the location of the symposium, to provide on-the-spot evidence of how some countries in the Third World have been able successfully to struggle out of the morass of underdevelopment.

The Symposium took place in conditions of great harmony: there was no North/South confrontation, and little or no ideological dispute since all the participants, irrespective of background, were united by a common resolve to use their collective knowledge in an attack on the problems of world development. They were unanimous in their intention to continue collaboration with each other, with their various governments, and with the international agencies, hopefully in a new and more effective system

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