

THE MANAGEMENT OF TECHNOLOGICAL CHANGE

PREFACE

Commonwealth Heads of Government, at their meeting in New Delhi in 1983, endorsed a recommendation from Commonwealth Employment and Labour Ministers that a Commonwealth Working Group be set up to examine member countries' experience in managing technological change. The Group, which was chaired by Prof.M.G.K. Menon of India, submitted its report, "Technological Change: Enhancing the Benefits", to Commonwealth Governments in August 1985. It was made available to the wider international community during the following month, and considered at the Commonwealth Heads of Government Meeting in The Bahamas in October.

The Commonwealth Secretariat, in servicing the Group, commissioned reports and provided other documentation to help its members to fulfil their task. The Group duly examined the impact of adopting new technologies, particularly microelectronics, on the economies of Commonwealth countries, identified policies to facilitate adjustment to those technologies, and suggested arrangements for sharing Commonwealth experience to enable member countries to derive maximum benefits from new technologies.

In view of the interest in the Group's Report, it has been decided to make a selection of the background papers done for its members available to the general public.

Chapter I contains a report on "The Impact and Policy Implications of Microelectronics" by Kurt Hoffman of the Science Policy Research Unit, University of Sussex. Mr.Hoffman, who has written extensively on this subject, first surveys developments in microelectronics and considers their national and international impacts; he then reviews the nature and orientation of existing policy mechanisms towards microelectronics, and finally suggests some policy options in this respect which are available to countries at different stages of economic development. The study is directed towards the developing countries, but it necessarily draws heavily on the experience of the advanced industrial economies. Particular attention is drawn to the pervasive effects of microelectronics technology on every country's economy and society. In some areas of this technology Mr.Hoffman foresees considerable difficulties for developing countries; but in others there seem to be great opportunities. Even the present situation is in many respects unclear,however, and in a technology as dynamic as microelectronics, the future is very much an unknown quantity. Only one thing seems certain: that microelectronics technology has the potential to alter the lifestyle of all mankind, for better or for worse.

In Chapter II, N.P. Singh concentrates on the institutional framework and policy development process of technology policy formulation in developing countries. Mr. Singh, who as Secretary to the Technology Policy Implementation Committee of the Government of India is writing in a personal capacity, first surveys the present position of technology policies in a selection of Commonwealth developing countries, reviewing and then assessing these countries' policy objectives, criteria and institutional framework. The second part of his report makes suggestions for future improvements, not only in technology policies but also in related economic, social and environmental policies and in other measures.

In Chapter III, John Evans of the European Trade Union Institute, Brussels discusses employment and labour questions. The first part of Mr. Evans' paper examines the impact of technological change on employment - on its level, quality and nature, including such aspects as health and safety at the workplace; the second part considers agreements for negotiating technological change, reviewing the various interests involved and practical experiences gained, and suggesting the modalities of a model agreement.

Technology selection is vital to economic and social development, and in Chapter IV, James Pickett, Director of the David Livingstone Institute of the University of Strathclyde, examines some of the elements involved in the choice of industrial techniques in developing countries. Prof. Pickett sets out to consider whether the range of existing industrial techniques is sufficiently large and dense to enable optimal choices to be made, and in so doing discusses some aspects of the policies needed to enhance technical progress. An addendum considers the consequences of improved choice and of emerging techniques.

Chapter V also relates to the choice of industrial technologies, but this time looked at more from the standpoint of an aid agency. Written by a member of staff of the Industrial Development Unit (IDU) of the Commonwealth Fund for Technical Cooperation, the note first provides some background on the role of technology transfer in IDU-assisted projects. It then considers the criteria for selecting technologies for commercial projects in developing countries and the importance of enhancing these countries' scientific and technological capabilities. There follows a brief review of trends in world industry and of their implications for developing countries' technology. A concluding section details three cases of IDU assistance in the provision of advanced technology.

The final chapter concerns biotechnology and the third world. Written by R.N. Azad when he was Assistant Director of the Food Production and Rural Development Division of the Commonwealth Secretariat, the paper first surveys the areas of potential application of biotechnology, and its economic and social aspects. This is followed by consideration of the potential for biotechnology in developing countries and some of the policy issues involved. In a concluding passage Dr. Azad

emphasises the vast potential that biotechnology holds for developing countries, and puts in a plea for greater international support to realise this potential.

On behalf of the Secretariat and the Commonwealth Working Group I would like to express my gratitude to the authors for their willing response to requests to write papers and for the useful contribution this effort made to the analyses and recommendations contained in the Group's Report.

It should be noted that the views expressed in the papers are those of the authors and do not necessarily reflect those of members of the Working Group, the Commonwealth Secretariat or Commonwealth Governments.

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