

PREFACE

'Sustainable Development' is described as development in which total "welfare" is not decreasing over time. Just as economic development is sustainable, provided economic (or man-made) capital is non-decreasing, similarly sustainable development requires total capital -- that is, economic capital, human and social capital and environmental capital -- to be non-decreasing. "Capital" in this context refers both to the stock and to the quality of the resources -- for example, the skills, health and knowledge of the population, and the quality of environment and other natural resources.

A factor that is of utmost importance and must be realized is that, for assured smooth sailing in the direction of sustainable development, the human capital has to be equipped with modern science and latest technologies in order to cope with the challenges that are multifaceted and global in nature. Science and technology provides the developing countries with the much-needed vehicle to speed up their growth and development, and also to sustain the same pattern. Countries like China, Malaysia and South Korea, which had taken concrete steps to incorporate science and technology in their developmental processes and agenda, are now economically better off within a short span of half a century. It is in this perspective that the developing countries can make apt use of the frontier sciences and technologies for continuous growth and development and can avoid compromise on any of other capital.

COMSATS - the Commission on Science and Technology for Sustainable Development in the South—which was established to serve the developing countries of the South with S&T-led initiatives, has been making humble efforts for the last ten years in promoting the cause of sustainable development. This manuscript titled 'The Road to Sustainable Development' is an effort in the same direction. The book comprehensively takes stock of the role that science and technology has to play for achieving the goals of sustainable development. Though the road to sustainable development is intricate and requires focus and concerted effort to cover safe distances, the book shows the way by highlighting the role of some important frontier science and technologies.

Leading the discussion from the Resolutions of the Earth-Summit in Rio in 1991, and making an appraisal of what had been achieved till the follow-up meeting in Johannesburg in 2002, the book uncovers myths and realities about sustainable development and discusses various aspects of development. In the later sections, the book provides insight into various frontier sciences and technologies that possess revolutionary powers and can lead the way towards sustainable development. These include renewable and nuclear energy technologies, biotechnology and biodiversity in the field of bio-sciences, and information communication technologies. In the concluding sections, a range of global developmental tools in the form of regional

cooperation are discussed and a suggestive roadmap, especially for the developing countries is provided in order to ensure involvement of all the stakeholders. I am very grateful to the team of authors that contributed chapters to this book, and took pain and time out in making the book a worthwhile resource on sustainable development. Most of the authors, besides me, belong to COMSATS headquarters, who have ample experience with COMSATS in working in its various thrust areas. I am also grateful to the team of COMSATS who made possible the publication of this very useful book and would like to make particular mention of Dr. M. M. Qurashi, Mr. Irfan Hayee, Mr. Imran Chaudhry and Ms. Nageena Safdar for this.

I conclude with the hope that the readers of this book will have an enlightening experience, after going through various chapters and I would welcome any suggestions and comments which shall help us bring an even better publication next time.

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