

FOREWORD

Countries have always been involved in fierce economic competition, more so even than in war, though often including it! In the modern world this can be seen as having started with the first industrial revolution, and the accompanying amoral colonial conquests which gave old and well established countries access to riches all kinds belonging to others in less developed and/or newly discovered countries. Exploitation by any definition by countries of the generic North, of countries of the generic South! The recent and current industrial revolution, based not on coal or the steam engine, but on high technological advances centered on new electronic devices and computers have amplified the growth of life qualities in the North, generally by the formation of country cartels – the Economic European Community being a good example. The success of well-developed countries is largely to be attributed to the progress made towards sustainable development and management of society, economy and the environment. For countries of the South, massive poverty, inadequate education, healthcare facilities and low standards of living remain as the major stumbling blocks on the paths towards any real indigenous development. While the North mostly made full use of Science and Technology for its own development, the South lagged still further behind and now urgently needs to come up with vigorous scientific and technological programs of its own. No amount of external general ‘aid’ – with all its qualifications and special provisions – can possibly hide the need for integrated and systematic efforts to be made from within the South itself. My own opinion is that it is a moral duty on the North, however, directly to assist the South, without attached political strings, to fill the huge scientific divide separating the developing countries from the developed. In doing so the dignified deployment of extremely fine technological and scientific minds from the South itself must be a key element.

In this book Dr. Hameed Ahmed Khan and his colleagues specifically address the question of how the road to sustained development should be embarked upon, implemented and maintained. The key element of thought and practice is that whilst assistance and advice is critical, the motive force and effort must come from within. The reader will find that a striking match of scientific expertise with strategic administrative planning is vital to the cause, and this is a continuing underlying theme. Beginning from progress in the past the book comprehensively discusses current scenarios and points clearly to distinct sectors of science and technology from which sustainable development in the South will inevitably come. How the latest developments in various scientific and technological advances will be utilized is clearly set out, with corresponding concrete recommendations. In my opinion the book presents modern concerns that relate primarily to the issues of the South. Latest advancements made in various S&T fields are incorporated with tact and practicality, followed by concrete recommendations. It is my own opinion that when the reader views these recommendations with objectivity, it will be clearly seen that there is a definite plan outlined for proper effective realization of a sensible and practicable path

to real sustainable development. This is something which has long been sorely needed. Now it is necessary for the North, and time for the North, to join in as honest practicing partner, and to share as much of what has been learned as is sensibly possible and practical. It shouldn't be, but apparently is necessary to add that all of this must be carried out in a milieu in which all participants are equal humans in every possible sense.

The holistic view of the many and varied aspects of sustainable development which is a basic element of this book is extremely welcome. Triggering discussion from the commitments made at Rio Earth Conference (1992) and the follow-up actions until the Johannesburg World Summit (2002) the book presents an optimistic point of view in meeting the global challenges successfully. Here it is relevant to quote from the book directly. Thus, "the world surely can undo the failures that the decade after the Rio Summit witnessed by translating their words into action and by making good on their commitments. Doubtless, the path of global negotiations to world-wide problems is indeed a difficult one and there are no early successes. In fact, coming to a national resolve and undertaking national action is a primer to the success of international treaties. This has shifted the onus for action for most of the problems from the supra-national to the national and even to the local level".

The specific details of various technologies which present the power to transform the way we live today, and the way they can positively affect a proper growth pattern, are clearly outlined. The book advocates an aggressive approach in building capacities in such technologies and their application for developmental purposes. Included are clean air technologies, energy technologies, biotechnology and information-communication technology. It requires both courage and a strong considered commitment to speak in favor of fostering the use of nuclear energy today, especially in the wake of growing concerns of its misuse. Nevertheless I am myself in total sympathy and empathy with the case presented for making use of nuclear energy for developmental purposes, whilst being glad for the inclusion of a discussion of concepts both in favour and against it. The author writes "Success of the MDG's (Millennium Development Goals) and WSSD (World Summit on Sustainable Development) plan of action largely depends upon abundant clean energy availability. As hydro and renewables have been proved to have limited potential in the near future, the only alternative left for filling the clean energy supply-demand gap will be the nuclear energy which is a proven and reliable source of clean energy".

One of the most important aspects needing full attention at institutional and governmental levels is the creation of an enabling environment for regional cooperation science and technology. For this reason the last section of the book lays out guidelines for harnessing cooperation amongst all the stakeholders - especially between the countries of the South. Regional cooperation in science and technology should not be considered as either a free liberty or an exception. The fact remains, however, that by a process of quite natural evolution they have become imperative in the wake of global challenges set out by the World Trade Organization (WTO) and the

corresponding emerging so-called New World Order.

For concerned unblinkered scientists, for technologists, for students, and for members of the general public, and last but not the least for national politicians and diplomats everywhere – North and South – this book is the most up to date and conscientious presentation available. The message is clear. Countries of the South want and deserve, as a natural concomitant to independence, the kind of world environment which recognizes their community energy and vitality, their independence, and their wish fully to partake in the necessary establishment over time of a more comprehensive and understanding worldwide mankind. This is not a lofty ideal. It is perfectly achievable. What is required is widespread personal commitment and personal action!

Dr. Hameed Ahmed Khan is a distinguished leader and an adroit exponent of new ways. He has served both Pakistan and the world, first as an authoritative fundamental scientist, and then as an applied technologist, and as a distinguished leader of many national and international bodies. His professional and personal life is one of devotion to those less fortunate. As an individual scientist and citizen of Pakistan he is in the central genre described by that Pakistani Nobel Laureate Abdus Salam, who in Trieste coined the generic words North and South in order collectively to describe the developed and less developed countries, respectively. In a sense Hameed Khan is an Abdus Salam reincarnated for the present and a true disciple. From the word disciple comes the word 'discipline'. Hameed Khan has brought that human and discipline understanding to the Third World, which he thereby distinguishes, and to the position of Chief Executive Officer of COMSATS – Commission on Science and Technology for Sustainable Development in the South – and he has brought it to this book! It is a book one should read, think about, and act upon!

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