

BANGLADESH ENVIRONMENT 2002

- A compilation of technical papers of the 2nd International Conference on Bangladesh Environment (ICBEN-2002).



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BANGLADESH ENVIRONMENT 2002

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PREFACE

Bangladesh Environment 2002 is a collection of selected technical papers that will be presented at the second International Conference on Bangladesh Environment (ICBEN 2002) to be held in Dhaka during December 19-21, 2002. The papers are expected to be a snapshot of Bangladesh environment at the present time, as understood by the experts from all over the world who have assembled here in Dhaka to present their findings.

The first conference, ICBEN 2000, held in January 14-15, 2000 brought together many Bangladeshi residents and nonresidents in an effort to halt and reverse the alarming environmental degradation in Bangladesh. It culminated in the formation of BAPA (Bangladesh Poribesh Andalon), which has been at the forefront of environmental movement in Bangladesh since. Bangladesh Environment 2000, was published as an outcome of the first conference.

In the intervening years, there have been a few positive changes. The move towards unleaded gasoline, banning of polythene bags, phasing out of old and Two Stroke Engine Vehicles (TSEV), and measures against illegal encroachments on the Buriganga river are some of the remarkable achievements. Growing environmental awareness and mobilization of pro-environment forces have made the difference. Yet, much remains to be done. Air and water remain dangerously polluted. Arsenic continues to take a painful human toll. Indiscriminate disposal of industrial effluents, sewage, household and medical wastes poses major hazards. Water logging and shrinking of forests and bio-diversity remain major concerns. Possible global warming and climate change looms on the horizon as serious long-term problems. The papers in these volumes expose the nature of these problems and highlight on some technically feasible solutions.

It is our hope that the publication of this conference will stimulate a more vigorous dialog among the conference participants and help the environmental activists, civil society, policy planners and decision-makers to understand the gravity of the environmental problems.

We acknowledge help from many in Bangladesh and abroad, including the many referees who went through the papers carefully and suggested changes and improvements. BAPA, BEN (Bangladesh Environment Network) and ITN (International Training Network) Centre at BUET have provided us with logistic and financial help in bringing out these volumes. Finally, we thank the contributors who have contributed to these volumes. Their timely contributions make this publication possible.

Editors

FOREWORD

The first International Conference on Bangladesh Environment (ICBEN-2000) was held in Dhaka on 14-15 January 2000. Selected papers presented in the conference were included in the proceedings volume, which was published a few months after the conference. This is one of the few publications dealing with a broad spectrum of environmental issues, both at the national and global levels, which Bangladesh has to deal with. One of the major outputs of ICBEN-2000 was the adoption of the Dhaka Declaration. The formation of Bangladesh Poribesh Andolon (Bangladesh Environment Movement), popularly known as BAPA, as an umbrella civil society organization has added impetus to a large number of activities targeted towards stopping environmental degradation and improvement of overall environment.

I am very happy to note the significant progress which has been made in identifying the problems, raising public awareness and adoption of measures relating to implementation of some of the recommendations in the Dhaka Declaration. The second International Conference on Bangladesh Environment (ICBEN-2002) is being organized by BAPA with special assistance from Bangladesh Environment Network, Department of Geography and Environment of Dhaka University and Bangladesh University of Engineering and Technology on 19-21 December 2002. In response to our invitation, a large number of authors from different parts of the world have submitted papers for the scientific sessions of ICBEN-2002. These are being published prior to the conference in two volumes and reflect not only the wide array of topics but also the progress that has been achieved in our understanding of the environmental problems confronting Bangladesh. I hope this publication will be useful not only for the scientists, engineers and social scientists working on environment related topics, but also to the policy makers and members of public interested in Bangladesh environment.

The Scientific Subcommittee of ICBEN-2002, under the leadership of Prof. M. Feroze Ahmed and Prof. Saleh A. Tanveer, has worked very hard to compile, edit and make arrangements for publication of the two volumes before the conference. On behalf of the Organizing Committee, I would like to thank all the authors, editors and the members of Scientific Subcommittee for their sincere efforts.

Prof. Jamilur Reza Choudhury
Chairman, Organizing Committee,
ICBEN-2002

BANGLADESH ENVIRONMENT NETWORK
A Network to Assist Bangladesh in Protecting Her Environment
Internet Address: <http://www.BEN-Center.org>

FOREWORD

It is very pleasing to see that the papers to be presented at the *Second International Conference on Bangladesh Environment (ICBEN-2002)* are coming out in a printed volumes even before the start of the conference. This speaks very highly of the conference organizers. Having this volume available at the start of the conference will help significantly in raising the quality and level of participation and discussion in the conference sessions.

On behalf of *Bangladesh Environment Network (BEN)*, a network of pro-environment non-resident Bangladeshis (NRB) and supporting members of the international community, I would like to congratulate all whose papers are appearing in this volume. These papers have gone through a rigorous referee process, testifying to their quality. The papers cover all major topics related to Bangladesh environment. The present volume will therefore serve as the latest compendium on Bangladesh environment, just as *Bangladesh Environment 2000* (compilation of papers presented at the First ICBEN held in January 2000) did a couple of years ago.

It is very pleasing to see that a significant proportion of papers in this volumes is by non-resident Bangladeshis. This cooperation between resident Bangladeshis (RB) and NRBs is a novelty. For a long time NRBs have been playing an important role in the economy of Bangladesh through their remittances. Taking advantage of revolutionary changes in communications technology, they can now play a direct role in helping Bangladesh solve her various problems. The ICBEN process is an example of this possibility. We hope that with time, the RB-NRB cooperation will deepen and expand and will prove effective in confronting Bangladesh's various problems as it is already doing so in protecting Bangladesh's environment.

I would like to thank Prof. Feroze Ahmed of BUET and Prof. Saleh Tanveer of Ohio State University, the co-conveners of the Scientific Subcommittee of ICBEN-2002, and their associates for their hard work in editing this publication. ICBEN is unique in being able to unite experts as well as activists under one umbrella. This ensures that instead of languishing at some corner, the knowledge and ideas contained in this publication will find easier conduit to the practice of environmental protection. Looking forward to that outcome and wishing success to ICBEN-2002,

Dr. Nazrul Islam

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