

Foreword

In his address to the sixth General Assembly of the Scientific Committee on Problems in the Environment (SCOPE) held in Washington, DC in September 1985, Dr Mostapha K. Tolba, Executive Director of UNEP, stated:

Environmentalists and scientists addressing environmental issues have a duty to demonstrate and to keep demonstrating the advantages that accrue to all nations from environmentally sound sustainable development.

Since its initiation in 1974, SCOPE's Project on Biogeochemical Cycles has been addressing important environmental issues. Initially, the activities focused on the cycles of carbon, nitrogen, sulphur and phosphorus separately. However, realizing that these cycles are inexorably tied together in one integrated system of cycles comprising many mechanisms of mutual interaction, a study of these interactions was started and has proved to be both interesting and fruitful. In 1982, the fifth General Assembly of SCOPE recommended that a scientific advisory committee be appointed to provide for intercommunication between the various biochemical cycling projects. Shortly thereafter, the Executive Committee endorsed a project on Global and Regional Cycling of Toxic Metals. This was in response of our need to understand better the pathways and cycles of potentially toxic elements such as arsenic, cadmium, lead and mercury in the environment. We are grateful to Professor T. C. Hutchinson for agreeing to chair the Subcommittee on Metal Cycling which organized the first SCOPE Metal Cycling Workshop, held in Toronto in September 1984. The workshop concentrated on four significant environmental pollutants—arsenic, cadmium, lead and mercury—and found major gaps in our understanding of global and regional fluxes in all four elements. In particular, the scarcity of data from developing countries was noted despite the fact that all four elements have been recognized as significant environmental pollutants for at least two decades. The present report was prepared from the draft contributions prepared for and critically discussed at the Toronto workshop.

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Obviously, this is only the start of SCOPE efforts in this important area. It is particularly important that this work be extended and that information be obtained on regional and global models of environmental fluxes of these and other potential pollutants. More emphasis will have to be placed on the tropical and subtropical climates and environments which may greatly accelerate the rates of cycling of these elements and the change in chemical form, fluxes and residence time. SCOPE will be actively pursuing funding to accomplish this task and will attempt to focus attention on this area in the future.

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