

Preface

The Program on Science and Human Rights of the American Association for the Advancement of Science (AAAS) has prepared the *Manual on Environmental Health Indicators and Benchmarks: Human Rights Perspective*, which was drafted in close cooperation with the Global Children's Health and Environment Fund and the National Council for Science and the Environment. The Manual is intended to be a compilation of a recommended set of environmental health indicators and benchmarks, selected from a human rights perspective, which provides a basis for determining the state of public health in urban and rural communities around the world. It is especially written for individuals in human rights, public health and environmental organizations residing in developing countries who are interested in organizing community-based projects for assessing the nature and extent of human health risks from a polluted and degraded environment.

The Manual is divided into several chapters covering a number of topics, which include: (a) a survey of existing environmental, public health and other related indicators and benchmarks, (b) a discussion of the selection process used in arriving at the recommended set of environmental health indicators and benchmarks, and (c) a presentation of background information on a number of major environmental health issues, such as air quality, water and sanitation, vector-borne diseases and food security and safety, along with specific sets of recommended environmental health indicators and benchmarks in each subject area. In addition, the Manual contains a collection of appended materials, such as tables and charts, annotated outline of environmental documents, treaties and conventions, summary descriptions of hazardous environmental agents, selected bibliographies and reference sources, and other relevant documentations and technical information.

The Manual's *Chapter I* ("Introduction") delineates the basic objectives and content of the document. Based on human rights consideration, this chapter discusses the major focus of this Manual in its selection of environmental health indicators and benchmarks that attempt to assess the impact of a polluted environment on the most vulnerable members of a community, such as infants and young children, the elderly and those that are infirm or chronically ill. In addition, it describes the linkage between environment, public health and human rights, including a brief outline of relevant human rights conventions and treaties that incorporate the principle of human rights to life and health.

Chapter II ("Environmental Health Indicators and Benchmarks") of the Manual includes a listing of leading international agencies and intergovernmental bodies, national regulatory agencies and non-governmental organizations, whose existing data base of environmental and public health indicators and benchmarks were reviewed and collated in the preparation of the Guidance Manual.

Chapter III ("Selection of Recommended Indicators and Benchmarks") of the Manual describes the screening process and selection criteria used to arrive at a recommended set of environmental health indicators and benchmarks. It discusses the differences between preventative and remedial indicators and explains the basis for dividing the set of recommended indicators and benchmarks into three separate categories. These include primary, secondary and tertiary indicators and benchmarks, along with supplemental use of modifying factors, such as geographic location or climate type of each region where the indicator's database is being generated and compiled. The chapter concludes with a discussion on developing a set of environmental health performance-based indices, a simple and transparent policy tool designed for both decision-makers and members of the public.

Chapter IV ("Environmental Health Structural and Process Indicators") discusses the development of structural and process indicators, along with an outline for conducting a pre-project screen, in order to assess the capacity of national, regional and/or local governments to meet constitutional mandates and carry out legislative directives to monitor regulatory laws and meet national standards and international guidelines on environmental health.

Chapter V ("Air Quality") presents background information on the adverse human health impact of a number of major air pollutants. These include carbon monoxide, sulfur oxides, nitrogen dioxides, ozone, particulate matter, lead, and hazardous contaminants found in the outdoor and indoor air of urban and rural areas in developing regions. It discusses the special vulnerability to the harmful effects of air pollutants on young children, the chronically ill and elderly members of urban and rural communities around the world. Number of recommended indicators and benchmarks on air quality: 6 Primary, 6 Secondary, 5 Tertiary, 3 Modifying Factors.

Chapter VI ("Water Quality and Sanitation") delineates the serious health impacts of microbial and chemical contaminants in drinking water found in many regions of the world. It discusses the basis for developing existing international and national drinking water standards and guidelines and how they can be employed as environmental health indicators and benchmarks. In addition, it outlines how improved sanitation and water treatment facilities can improve the status of public health in developing regions. Number of recommended water quality indicators and benchmarks on water quality and sanitation: 6 Primary, 4 Secondary, 3 Tertiary, 4 Modifying Factors.

Chapter VII (“Vector-Borne Diseases”) provides an overview of the public health problem in developing regions associated with serious bacterial and viral diseases that are transmitted by various vectors, such as insects and animal and human parasites. Background information on a number of serious vector borne diseases found in tropical areas, such as dengue fever, malaria, schistosomiasis, are presented in this chapter. In addition, it outlines certain practical measures and behavioral changes that could be taken to prevent such disease vectors in proliferating in developing regions. Number of recommended environmental health indicators and benchmarks on disease vectors: 5 *Primary*, 4 *Secondary*, 1 *Tertiary*, 2 *Modifying Factors*.

Chapter VIII (“Food Security and Safety”) discusses the chief causes of food insecurity and scarcity in many regions of the world, which are: (a) lack of agricultural resources, (b) poor land and water management strategies, and (c) inequities in food distribution. It also presents the public health problems associated with food safety that are the result of excessive pesticide, hormone and antibiotic uses, bacterial and fungal infections, and decreased levels of vitamins, trace minerals and other nutrients in processed foods. Number of recommended environmental indicators and benchmarks on food security and safety: 6 *Primary*, 3 *Secondary*, 3 *Tertiary*, 2 *Modifying Factors*.

In the Manual’s *Appendices* and *Tables* the following items are included: (a) a list of major national and international documents, treaties and conventions on environment and public health; (b) a summary discussion on atmospheric pollutants and air quality standards; (c) an overview of bacterial and chemical contaminants found in water and drinking water standards; (d) a selected bibliography of important references, technical reports and official governmental documents on environmental health; (e) a listing of key resources and websites on the internet; (f) a tabulated spreadsheet on the existing data base of over 700 demographic, environmental and public health indicators and benchmarks, along with references and web links; and (g) a summary table that lists the selection criteria’s scores of each indicators that were reviewed and collated in arriving at the set of recommended environmental health indicators and benchmarks.