3. Terms of reference

3.1. SCIENTIFIC COMMITTEE ON PROBLEMS OF THE ENVIRONMENT (SCOPE)

3.1.1. Origin

The 12 th General Assembly of the International Council of Scientific Unions (ICSU) meeting in Paris 1968, resolved that the International Union of Biological Sciences (IUBS), the International Union of Geodesy and Geophysics (IUGG), in consultation with the Special Committee for the International Biological Programme (SCIBP), should set up an "ad hoc Committee on Problems of the Human Environment". The ad hoc Committee recommended the creation of a Scientific Committe on Problems of the Environment (SCOPE). The proposed Committee was set up by the Executive of ICSU (Erevan 1969) and originally comprised eleven members together with representatives from the nine ICSU Unions that wished to participate. SCOPE first met in Madrid in September 1970 and decided to initiate four working groups, one of which was a Commission to Monitor the Environment. The establishment of SCOPE was confirmed at the 13th General Assembly of ICSU (Madrid 1970) and extended to include one representative each from India, South-East Asia and Africa.

3.1.2. Objectives

SCOPE was established for the following purposes: (a) To advance knowledge of the influence of man and his activities upon his environment, as well as the effects of these alterations upon man, his health and his welfare – with particular attention to those influences and effects which are either global or shared in common by several nations, and (b) To serve as a non-governmental, inter-diciplinary and international council of scientists and as a non-governmental source of advice for the benefit of governments and inter-governmental agencies with respect to environmental problems.

Toward these ends, the functions of SCOPE shall include: (a) Advancing studies of fundamental environmental processes, particularly those necessary to achieve a better understanding of the interactions between man and his environment, (b) Devising techniques for environmental measurements with international comparability of data, and exercising scientific leadership in the design of a plan for co-operative environmental monitoring, (c) Gathering, analyzing and evaluating information concerning global and regional environmental phenomena and trends, and the effects of environment on man, (d) Developing collaborative programmes among the Scientific Unions, National Members and Committees of ICSU and other appropriate organizations including those concerned with the social sciences, in order to promote the above mentioned activities, (e) Projecting

current environmental trends into the future on the basis of alternative hypotheses of future human activity, population, use of natural resources and energy requirements, (f) Identifying or devising measures to minimize the adverse effects of the interaction of man and his environment, (g) Acting, on behalf of ICSU, in serving as a means of communication with other organizations, such as United Nations agencies, on environmental questions of broader purview than those of individual Unions and Committees of ICSU and (h) Promoting education in, and understanding of, environmental problems.

SCOPE originally selected four tasks for study, namely (i) Materials which may significantly alter the biosphere and the environment – their determination and biological assessment, (ii) A case study of the toxicology of chlorinated aromatic compounds, (iii) The scientific basis for the creation and management of artificial ecosystems and (iv) The planning of a global monitoring system.

The development of SCOPE is envisaged to broadly follow the lines of the Scientific Committee for Antarctic Research (SCAR) or the Scientific Committee for Oceanic Research (SCOR).

With its purposes and functions as described above SCOPE is most anxious to co-operate fully with other non-governmental organizations and with inter-governmental organizations and agencies.

All SCOPE activities have to be based on national participation and accordingly the President of ICSU invited national members of ICSU to designate an appropriate national committee for liaison with SCOPE.

3.1.3. Membership

(Union affiliation within parentheses)

Dr J.E. Smith, Plymouth Marine Laboratory, PLYMOUTH, U.K. (Chairman)

Professor F.di Castri, Institute of Ecology, Universidad Austral de Chile, VALDIVIA, Chile. (Vice Chairman)

Dr T.F. Malone, Graduate School, University of Connecticut, STORRS, U.S.A. (IUGG) (Secretary)

Professor F. Bourlière, Faculté de Médicine, PARIS, France.

Professor D.S. Farner, Department of Zoology, University of Washington, SEATTLE, U.S.A. (IUBS)

Professor F.J. Fenner, John Curtin School of Medical Research, Australian National University, CANBERRA, Australia

Dr F.N. Frenkiel, Naval Ship Research and Development Center, WASHINGTON D.C., U.S.A. (IUTAM)

Dr J.C. Frye, Illinois State Geological Survey, URBANA, U.S.A. (IGU)

Dr W. Gallay, The E.B. Eddy Co., HULL, Canada (IUPAC)

Professor K. Grasshoff, Institut für Meereskunde, KIEL, Federal Republic of Germany

Dr R.W.J. Keay, The Royal Society, LONDON, U.K.

Professor T. Kira, Department of Biology, Osaka City University, OSAKA, Japan

Professor S. Krishnaswamy, Department of Biological Sciences, Madurai University, MADURAI, India

Professor V.N. Kunin, Academy of Sciences, MOSCOW, USSR

Professor A. Lara, Centro de Investigaciones Fisicas, Consejaro Nacional de Educacion, MADRID, Spain. (IUPAP)

Professor C.Levinthal, Department of Biological Sciences, Columbia University, NEW YORK, U.S.A. (IUPAB)

Dr B. Lundholm, Ecological Reserach Committee, STOCKHOLM, Sweden.

Dr R.E. Munn, Meteorological Service of Canada, TORONTO, Canada.

Professor Otto Seomarwoto, National Biological Institut of Indonesia, BOGOR, Indonsia.

Professor F.A. Stafleu, International Bureau for Plant Taxonomy, UTRECHT, The Netherlands. (ICSU)

Professor F.J. Stare, Laboratory of Nutrition, Harvard School of Public Health, CAMBRIDGE, U.S.A. (IUNS)

Professor P.F. Straub, Institute of Biochemistry, Hungarian Academy of Sciences, BUDAPEST, Hungary. (IUB)

Professor T. Tashev, Institute de Nutrition, Academie Bulgare des Sciences, SOFIA, Bulgaria.

Professor R. Truhaut, Faculté de Pharmacie, PARIS, France.

Professor David Wasawo, Department of Zoology, University College of Nairobi, NAIROBI, Kenya.

Professor J.S. Weiner, London School of Hygiene and Tropical Medicine, LONDON, U.K. (IUPS)

Professor G.F. White, Institute of Behavioral Science, University of Colorado, BOULDER, U.S.A. (IGU)

3.2. SCOPE COMMISSION ON MONITORING

3.2.1. Origin

The third General Assembly of the International Biological Programme (Varna, April 1968) appointed an ad hoc committee to investigate and report on the need for environmental monitoring. This Report with three technical annexures, was presented to SCIBP at the fourth General Assembly of IBP (Rome, October 1970) where it was agreed that SCIBP should transfer to SCOPE its responsibility for the consideration of matters relating to global environmental monitoring. SCOPE had already set up a Commission on Monitoring at its first meeting in Madrid, September 1970.

3.2.2. Function

The functions of the Commission on Monitoring are as follows:

a) To initiate investigations into the methodology of monitoring,

including the selection of suitable parameters, to ensure comparability of methods and co-ordination of monitoring systems;

b) to design an integrated, appropriate broad-based monitoring system for air, water, soils and biota, including man, taking into consideration already existing activities;

c) to set priorities on parameters to be initially measured commensurate with the urgency of the environmental problems to which they pertain;

d) to investigate the usefulness of studying past changes in selected parameters in order to establish baseline values and to investigate the possibilities of establishing environmental archives;

e) a prime component of the system should be a network of background (baseline) stations, far from population centers, and designed to monitor integrated values of global importance. However, the problems of cities and other areas of major development should not be neglected, and the Commission should consider the development of impact stations and other methods of monitoring those situations where human impact is critical;

f) the potential for future development of special monitoring techniques, such as those of remote sensing, should be carefully considered.

3.2.3. Membership

Dr. Bengt Lundholm, (chairman) Swedish Natural
Science Research Council,
Sveavägen 166, 8th floor,
S–113 46 Stockholm, Sweden.

Professor W. Frank Blair, USNC IBP,
P.O. Box 7366, Univ. Sta Austin,
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Dr. W. Gallay, The E.B. Eddy Co. Hull P., Quebec, Canada.

Prof. Dr. K. Grasshoff, Inst. Für Meereskunde
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Prof. V.N. Kunin, USSR Academy of Sciences,
Leninskiy Prospect 14,
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Dr. R.E. Munn, Micro-Meteorological
Research Unit,
Meteorological Service of Canada,
315 Bloor Street, W.,
Toronto 5, Ont., Canada.

Dr. N.N. Smirnov, Department of General
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Moscow V–71, USSR.

3.3. REQUEST TO SCOPE FROM THE UN CONFERENCE ON THE HUMAN ENVIRONMENT, STOCKHOLM 1972.

In December 1970 the Secretary–General of the UN Conference on the Human Environment (Stockholm 1972) requested that the SCOPE Commission on Monitoring "prepare a report recommending the design, the parameters and technical organization needed for a coherent global environmental monitoring system making maximum use of available capabilities of existing and planned national, regional and international networks, together with such data collection and processing centres as may be required".

3.4. SCOPE'S ACCEPTANCE OF THE UN REQUEST.

This request was accepted by SCOPE at its second meeting (London, January 1971) and the following recommendation adopted:

"The Committee, having considered the possibilities of designing a coherent global monitoring system which would include existing and planned international, regional and national networks, and convinced that such an integrated system is feasible, desirable and deserving of the strong support of the science community, asks the Commission on Global Monitoring to take the necessary action, in consultation with the international, regional and national bodies concerned, to prepare a design for such a system, including the principles for the list of variables to be studied, including the location of baseline and background stations and the needs for data collection and analysis centres. *Recommends* that the Secretary take the necessary steps to obtain financial and other support to enable the Commission to complete this design prior to the third meeting of SCOPE, so that it may, with the approval of SCOPE, be submitted to the Secretary-General of the UN Conference on the Human Environment."