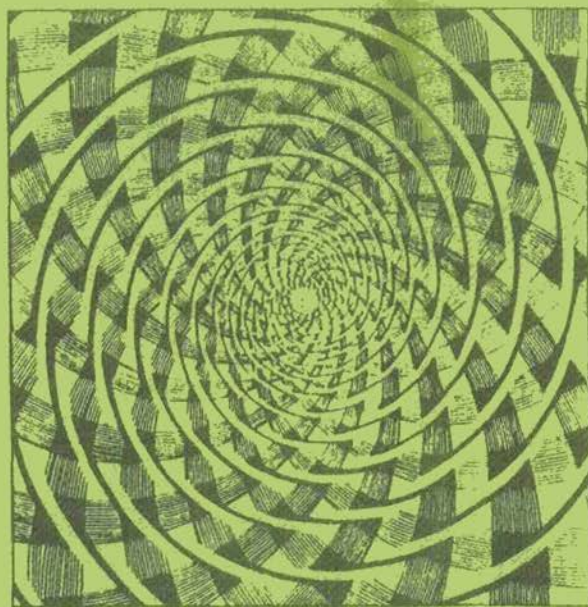


EARTHWATCH  
GLOBAL ENVIRONMENT MONITORING SYSTEM

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DIRECTORY OF ORGANIZATIONS  
AND INSTITUTES ACTIVE IN  
ENVIRONMENTAL MONITORING



UNITED NATIONS ENVIRONMENT PROGRAMME



# DIRECTORY OF ORGANIZATIONS AND INSTITUTES ACTIVE IN ENVIRONMENTAL MONITORING

Second edition  
December 1993

Researched, compiled and written  
by  
Andrew J. Hicks

This directory was compiled as part of the  
development of the HEM information system  
(HEMIS)

UNEP-Harmonization of Environmental Measurement (HEM) Office  
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*c/o*



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## Introduction

The Harmonization of Environmental Measurement (HEM) programme was implemented as a response to the report of the Environment Experts of the Economic Summit (G -7) in December 1986.

Following this report, in 1987 the Economic Summit in Venice called upon the United Nations Environment Programme (UNEP), to initiate a forum for information exchange within the framework of Earthwatch. Consequently, HEM was formed under the auspices of UNEP's Global Environmental Monitoring System (GEMS) and established in Munich with funds from the Governments of the Federal Republic of Germany, Norway, the State of Bavaria and UNEP itself.

From its initiation, HEM was intended to build on and continue the work of the Secretariat of the Environment Experts of the Economic Summit. HEM's role is to enhance the compatibility and quality of information on the state of the environment world-wide in order to improve the provision to policy making bodies, international programmes and the scientific community of the harmonized information required for the sound management of environmental resources.

The development of the Harmonization of Environmental Measurement Information System (HEMIS), is an important step towards fulfilling this role. The system is being developed to facilitate the transfer of information on environmental institutes and organizations, their activities and their implementation strategies. As a step towards this goal, the HEMDisk has been devised which allows HEMIS to be available to the largest community possible.

A fundamental part of the HEMDisk information, (together with UNEP-HEM publications "A Survey of Environmental Monitoring and Information Management Programmes of International Organizations" and "A Survey of Organizations and Laboratories Manufacturing, Supplying or Using Reference Materials for Environmental Measurement"), is the Directory of Organizations and Institutes Active in Environmental Monitoring. This was initially transferred to publication format in April 1992 and included 148 entries from 35 countries. The updating of the Directory began in April 1993 and has seen the entries increase in number to 266 from 49 countries. Those from the original Directory have been updated according to any changes in scope or direction since the initial publication. Drafts of each entry were distributed to their respective organization for counter-checking by October 1993 and appropriate changes were amended. 120 organizations counter-checked their entries and the remaining entries were assumed to be correct as we had requested that the organizations involved need not return their entry if they were satisfied with its content.

The questionnaire itself included standardized sections for the fields; "Type of Institution", "Main Activities of the Organization" and "Activities Related to Monitoring and Research in the Sectors". While realizing that each organization has its own specific area of research and work, the HEM office felt it important that a consistency was shown in these areas to allow for easier comparison and recognition for the Directory user.

The "Keywords" section is also subject to standardization according to INFOTERRA keywords. These are standardized in order that the sectors can be readily 'translated' by the user and are therefore relevant for inclusion in this publication, which was designed to be implemented more as a reference volume than a technical thesaurus. In addition, the UNEP-HEM office has included certain keywords which it felt were important and acceptable enough to complement the INFOTERRA list. These are indicated with the prefix; 00000.

## Contents List of Organizations

### Prefix Key:

- 1: United Nations Organization**
- 2: Inter-Governmental Organization**
- 3: Governmental Organization**
- 4: Non-Governmental Organization**
- 5: Academic Organization**
- 6: Industrial or Commercial Organization**

### **Albania:**

- (3) Forests and Pastures Research Institute (IKPK)
- (3) Institute of Chemical Technology
- (3) Institute of Hydrometeorology (IHM)
- (3) University of Tirana, Faculty of Natural Sciences

### **Australia:**

- (4) Biodiversity Coalition
- (3) Botanic Gardens of Adelaide and State Herbarium
- (3) Bureau of Meteorology, Atmosphere Watch Section
- (3) Bureau of Meteorology, Hydrology Section
- (3) Commonwealth Environment Protection Agency (CEPA)
- (3) Commonwealth Scientific and Industrial Research Organization (CSIRO)
- (3) Cooperative Research Centre for the Antarctic and Southern Ocean Environment
- (3) Office of the Supervising Scientist for the Alligator Rivers Region (OSS)

### **Austria:**

- (3) Austrian Federal Environmental Agency
- (5) Centre for Environmental and Nature Protection (ZUN)
- (3) Institute of Environmental Medicine of the City of Vienna
- (4) International Friends of Nature (IFN)
- (4) International Institute for Applied Systems Analysis (IIASA)
- (4) International Union of Forestry Research Organizations (IUFRO)

### **Belgium:**

- (5) Catholic University of Louvain, Centre for Medical Informatics (CIM-UCL)
- (2) Commission of the European Communities (CEC-M&T-DG XII)
- (2) Environmental Programme for the Danube River Basin, Programme Coordination Unit (PCU)
- (4) European Chemical Industry Ecology and Toxicology Centre (ECETOC)
- (4) Global Legislators Organization for a Balanced Environment (GLOBE)
- (4) Union of International Associations (UIA)
- (4) Union of the Water Supply Associations from Countries of the European Communities (EUREAU)

**Botswana:**

- (3) Department of Water Affairs (DWA)
- (4) Forestry Association of Botswana (FAB)

**Canada:**

- (4) Atlantic Salmon Federation (ASF)
- (3) Bedford Institute of Oceanography, Marine Chemistry Division (BIO/MCD)
- (3) Health and Welfare Canada, Food Research Division
- (2) Northwest Atlantic Fisheries Organization (NAFO)
- (4) Western Canada Wilderness Committee (WCWC)
- (4) Wilderness is the Last Dream (WILD-WCWC)

**Chile:**

- (3) Chilean Nuclear Energy Commission
- (2) Permanent South Pacific Commission (CPPS)
- (5) University of Chile, Laboratory of Nuclear and Radiochemistry

**China:**

- (3) Institute of Environmental Protection and Monitoring, Ministry of Agriculture
- (5) Institute of High Energy Physics
- (6) Shanghai Petrochemical Complex, Environmental Protection Research Institute
- (3) Xinjiang Centre Station of Environmental Monitoring

**Colombia:**

- (4) International Centre of Tropical Agriculture (CIAT)
- (4) Latin American Federation of Young Environmentalists (FLAJA)

**Costa Rica:**

- (2) Tropical Agronomic Centre for Research and Education (CATIE)
- (5) University of Costa Rica, Research Centre for Environmental Pollution (UCR-CICA)

**Cote D'Ivoire**

- (2) African Development Bank. Environment and Social Policy Division (ADB)

**Croatia:**

- (6) Gisdata d.o.o.

**Denmark:**

- (3) National Agency for Environmental Protection (NAEP)
- (3) National Environmental Research Institute (NERI)
- (3) NERI Department of Emissions and Air Pollution (DEAP)
- (3) NERI Department of Environmental Chemistry (MIKE)
- (3) NERI Department of Freshwater Ecology (DOFE)
- (3) NERI Department of Marine Ecology and Microbiology (DMEM)
- (3) NERI Department of Terrestrial Ecology (DOTE)
- (3) NERI Department of Wildlife Ecology (DOWE)

**Egypt:**

- (3) Meteorological Authority

- (5) University of Alexandria, Institute of Graduate Studies and Research (UNARC)

**Finland:**

- (3) Finnish Meteorological Institute, Air Quality Department
- (4) Finnish Standards Association (SFS)
- (3) National Board of Waters and the Environment, Environmental Data Centre (EDC)
- (3) National Board of Waters and the Environment, Water and Environment Research Institute

**France:**

- (3) Air Service of the CNRS (CNRS/SA)
- (3) Centre for Low Radioactivities (CNRS/CEA)
- (2) Council of Europe, Centre Natropa
- (2) European Coastal Zone Association for Science and Technology (EUROCOAST)
- (5) European University for Industrial Chemistry (EHICS)
- (4) International Centre for Alpine Environment (ICALPE)
- (4) International Centre of Comparative Environmental Law (CIDCE)
- (4) International Council of Scientific Unions (ICSU)
- (4) International Social Sciences and Environment Network (RISE)
- (4) International Union of Geodesy and Geophysics (IUGG)
- (5) National Centre for Scientific Research (CNRS)
- (3) National Institute for Industrial Environment and Risks (INERIS)

**Germany:**

- (6) Aerospace Institute Berlin (WIB)
- (3) Alfred Wegener Institute for Polar and Marine Research (AWI)
- (3) Bavarian State Office for Environmental Protection (LfU)
- (4) Commission on Air Pollution Prevention in VDI and DIN (KRdL)
- (5) Engler Bunte Institute, University of Karlsruhe
- (3) Environmental Research Centre (UFZ)
- (2) European Experiment on Transport and Transformation of Environmentally Relevant Trace Constituents in the Troposphere over Europe (EUROTRAC)
- (3) Federal Environmental Agency, Pilotstation Frankfurt (UBA)
- (3) Federal Institute for Geosciences and Natural Resources (BGR)
- (3) Federal Institute for Hydrology (BfG)
- (3) Federal Maritime and Hydrographic Agency (BSH)
- (3) Federal Agency for Nature Conservation (BfN)
- (6) Federation of German Industries, Department of Environmental Policy (BDI)
- (4) Fraunhofer Institute for Atmospheric Environmental Research (IFU)
- (4) Fraunhofer Institute for Environmental Chemistry and Ecotoxicology (FhG-IUCT)
- (4) Fraunhofer Institute for Physical Measurement Techniques (FhG IPM)
- (3) German Aerospace Research Establishment, German Remote Sensing Data Centre (DLR-DFD)
- (3) German Aerospace Research Establishment, Institute for Optical Electronics (DLR)
- (3) German Aerospace Research Establishment, Institute for Physics of the Atmosphere (DLR)
- (3) German Aerospace Research Establishment, Institute for Radio Frequency Technology (DLR)
- (5) German Bunsen Society for Physical Chemistry

- (5) German Society for Mineralogy
- (3) Global Precipitation Climatology Centre (GPCC)
- (1) Global Run-Off Data Centre (GRDC)
- (4) Institute for European Environmental Policy (IEUP)
- (5) Institute of Space Science, Free University of Berlin
- (3) Nuclear Research Centre, Karlsruhe (KfK PEF)
- (4) Society of German Chemists (GDCh)
- (3) State Environmental Protection Agency, Baden Wuerttemberg (LfU)
- (5) University of Armed Forces Munich, Institute for Hydraulics (UniBwM)
- (4) World Economy, Ecology and Development Information Service Office (WEED)

**Greece:**

- (4) Hellenic Society for the Protection of Nature (HSPN)

**Guatemala:**

- (4) Mesoamerican Centre for the Study of Appropriate Technology (CEMAT)

**Hungary:**

- (3) Water Resources Research Centre (VITUKI)

**India:**

- (3) Bhabha Atomic Research Centre, Analytical Chemistry Division
- (3) Central Scientific Instruments Organization (CSIO)
- (5) Centre for Environmental Studies, School of Planning and Architecture (CES SPA)
- (4) International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
- (4) International Society for Tropical Ecology (ISTE)
- (3) Kerala State Pollution Control Board
- (3) Madhya Pradesh Pollution Control Board

**Israel:**

- (3) Dr. A. Felix Public Health Laboratory
- (3) Israel Oceanographic and Limnological Research (IOLR)

**Italy:**

- (6) Centre for Interdisciplinary Environmental Studies (CISA CIES)
- (6) ENEL-DCO Piacenza Laboratory (ENEL-DCO/LP)
- (3) Institute for Atmospheric Research, National Council for Research (CNR)
- (2) Joint Research Centre, Commission of the European Communities (JRC CEC)
- (4) Mario Negri Institute for Pharmacological Research
- (3) National Institute for Health
- (5) University of Venice, Department of Environmental Science.

**Japan:**

- (3) Centre for Global Environmental Research, National Institute for Environmental Studies (CGER NIES)
- (3) Environmental Pollution Research Centre of Ibaraki Prefecture
- (3) Government Industrial Research Institute (GIRIO)
- (4) International Society for Photogrammetry and Remote Sensing (ISPRS)
- (2) International Tropical Timber Organization (ITTO)

- (3) Japan Meteorological Agency (JMA)
- (3) Marine Pollution Research Laboratory, Maritime Safety Agency
- (3) National Institute for Environmental Studies (NIES)
- (3) National Institute for Resources and Environment (NIRE)
- (3) National Institute of Radiological Sciences
- (3) National Research Laboratory of Metrology
- (6) Research Centre for Environment and Development, Mitsubishi Research Institute

**Kenya:**

- (4) Association for Better Land Husbandry (ABLH)
- (4) East Africa Natural History Society (EANHS)
- (1) United Nations Environment Programme, Global Environment Monitoring System, Programme Activity Centre (UNEP GEMS/PAC)

**Luxembourg:**

- (3) Administration of the Environment (AE)
- (3) Conservation Service of the Nature Administration for Waters and Forests

**Malaysia:**

- (4) Asian Wetlands Bureau (AWB)

**Mali:**

- (2) Centre of Studies and Research on Population for Development, Sahel Institute (CERPOD)

**Mauritius:**

- (3) Meteorological Service (METEO VACOAS)

**Mexico:**

- (2) Inter-American Indian Institute (III)

**Netherlands:**

- (6) Delft Hydraulics
- (5) DLO Winand Staring Centre for Integrated Land, Soil and Water Research (SC-DLO)
- (4) Europa Nostra
- (4) European Environmental Research Organization (EERO)
- (4) Society for Medical and Biological Information Management (VMBI)
- (4) TNO Institute of Applied Geoscience (TNO)
- (4) TNO Institute of Environmental and Energy Technology (TNO)
- (4) TNO Institute of Environmental Sciences (TNO)
- (4) TNO Study Centre for Environmental Research (TNO-SCMO)
- (5) University of Utrecht, Department of Physical Geography (GISLA)



**Norway:**

- (5) Centre for International Climate and Energy Research (CICERO)
- (3) Directorate for Nature Management (DN)
- (3) Geological Survey of Norway (NGU)
- (3) Institute of Marine Research (IMR)
- (3) Norwegian Forest Research Institute (NISK)
- (4) Norwegian Institute for Air Research (NILU)
- (4) Norwegian Institute for Nature Research (NINA)
- (4) Norwegian Institute for Water Research (NIVA)
- (3) Norwegian Meteorological Institute (DNMI)
- (3) Norwegian Ocean Monitoring and Forecasting Centre (HOV)
- (3) State Pollution Control Authority (SFT)

**Oman:**

- (3) Department of Environmental Health, Ministry of Health
- (3) Ministry of Water Resources

**Peru:**

- (2) International Potato Centre (CIP)
- (1) Pan American Centre for Sanitary Engineering and Environmental Sciences (CEPIS)

**Philippines:**

- (3) Environmental Management Bureau, Department of Environment and Natural Resources
- (3) Environmental Management and Protected Areas Service, Department of Environment and Natural Resources
- (3) Environmental Management and Protected Areas Services (EMPAS)
- (3) Metropolitan Water Works and Sewerage System, Applied Research and Quality Control Department, Central Laboratory Division (MWSS ARQCD CLD)
- (3) National Power Corporation, Environmental Management Department (EMD NAPOCOR)
- (3) Natural Sciences Research Institute, University of the Philippines (NSRI)

**Poland:**

- (4) Green Brigades, Environmental Contact Office
- (3) Institute of Meteorology and Water Management Maritime Branch

**Portugal:**

- (3) General Direction of Environmental Quality
- (3) Institute for the Conservation of Nature (ICN)
- (3) Institute for Hydrography
- (3) National Institute for Meteorology and Geophysics
- (3) National Institute for Environmental Promotion
- (5) University of Aveiro, Department of the Environment

**Senegal:**

- (2) Gambia River Basin Development Organization (OMVG)

**Spain:**

- (2) International Commission for the Conservation of Atlantic Tunas (ICCAT)
- (3) National Centre for Environmental Health (CNSA)
- (3) Research Centre for Environmental Medicine (CSIC)
- (5) University of Salamanca, Department for Analytical Chemistry
- (2) World Tourism Organization (WTO OMT BTO)

**Sri Lanka:**

- (3) Central Environmental Authority
- (4) Wildlife and Nature Protection Society

**Sudan:**

- (3) Ministry of Defence, Meteorological Department

**Sweden:**

- (3) Geological Survey of Sweden (SGU)
- (4) Stockholm Environment Institute (SEI)
- (3) Swedish Environmental Protection Agency (SEPA)

**Switzerland:**

- (6) Business Council for Sustainable Development (BCSD)
- (4) Centre for Our Common Future
- (6) Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers (ETAD)
- (5) International Academy of Environment
- (4) International Association Against Noise (AICB)
- (4) International Association of Environmental Analytical Chemistry
- (5) International Association of Scientific Experts in Tourism (AIEST)
- (1) International Occupational Safety and Health Information Centre (CIS)
- (2) Ramsar Convention Bureau
- (4) Swiss Society of Environmental Science (SAGUF)
- (5) University of Bern, Group for Development and Environment (GDE)
- (4) World Conservation Union (IUCN)
- (1) World Health Organization, Prevention of Environmental Pollution (WHO PEP)
- (1) World Meteorological Organization (WMO)

**Syria:**

- (2) Arab Centre for the Studies of Arid Zones and Dry Lands (ACSAD)

**Thailand:**

- (5) Asian Institute of Technology, Environmental Engineering Division (AIT)
- (4) Asian Society for Environmental Protection (ASEP)
- (3) Environmental Research and Training Centre, Department of Environmental Quality Promotion (ERTC ONEB)
- (3) Ministry of Agriculture and Cooperatives, Department of Land Development, Land Use Planning Division

**United Kingdom:**

- (4) AEA Environment and Energy (AEA)
- (3) British Antarctic Survey (BAS)
- (4) British Standards Institution (BSI)
- (4) Commonwealth Human Ecology Council (CHEC)
- (2) Commonwealth Secretariat
- (3) Department of Transport, Transport and Road Research Laboratory (TRRL)
- (4) Earth Resources Centre, Greenpeace Exeter Research Laboratory
- (4) European Group for Ecological Action (ECOROPA)
- (1) Global Environment Monitoring System, Monitoring and Assessment Research Centre (GEMS MARC)
- (3) Institute of Terrestrial Ecology, Merlewood Research Station (ITE)
- (4) International Association on Water Quality (IAWQ)
- (4) International Organization of Consumers Unions (IOCU)
- (4) International Petroleum Industry Environmental Conservation Association (IPIECA)
- (4) International Society for the Prevention of Water Pollution (ISTPOWP)
- (4) International Waterfowl and Wetlands Research Bureau (IWRB)
- (2) International Whaling Commission (IWC)
- (5) Loughborough University of Technology, Water Engineering and Development Centre (WEDC)
- (3) Meteorological Office, Observation Provision Branch (Met. O. OP)
- (3) National Radiological Protection Board (NRPB)
- (2) North Atlantic Salmon Conservation Organization (NASCO)
- (2) Oslo and Paris Commissions (OSPARCOM)
- (4) Panos Institute (PANOS)
- (4) Royal Society for Nature Conservation, Wildlife Trusts Partnership (RSNC)
- (4) Royal Society of Chemistry (RSC)
- (4) Tidy Britain Group (TBG)
- (3) United Kingdom Global Environmental Research Office (UK GER)
- (3) Warren Spring Laboratory (WSL)

**United States:**

- (4) American Conference of Governmental Industrial Hygienists (ACGIH)
- (4) American Society for Testing and Materials (ASTM)
- (4) Antarctic and Southern Ocean Coalition (ASOC)
- (4) Environmental Assessment Association (EAA)
- (2) Inter American Tropical Tuna Commission (IATTC)
- (4) International Association for Environmental Hydrology (IAEH)
- (4) International Association for Impact Assessment (IAIA)
- (4) International Society for Endangered Cats (ISEC)
- (4) John Hopkins University, Scientific Committee on Oceanic Research (SCOR)
- (4) North American Coalition on Religion and Ecology (NACRE)
- (5) Organization for Tropical Studies (OTS)
- (2) Organization of American States, Department of Regional Development and Environment (OAS DRDE)
- (4) Pesticide Action Network (PAN)
- (4) Soil and Water Conservation Society (SWCS)
- (1) United Nations Statistical Office, Environment Statistics Section (UNSTAT)
- (3) United States Environmental Protection Agency, Environmental Monitoring and

**Assessment Programme (US EPA EMAP)**

- (3) United States Geological Survey (USGS)
- (3) United States Geological Survey, National Earthquake Information Centre (USGS NEIC)
- (4) Woods Hole Research Centre
- (4) World Association of Soil and Water Conservation (WASWC)
- (3) World Data Centre, National Geophysical Data Centre (WDC NGDC/NOAA NESDIS)
- (4) WorldWide Network, World Women in Environment and Development

**Uruguay:**

- (3) National Nuclear Technology Board, Laboratory for Nuclear Analysis Techniques
- (4) Uruguayan Association of Environmental Law (AUDA)

**Usbekistan:**

- (3) Uzbek Academy of Sciences, Institute of Nuclear Physics

**Western Samoa:**

- (2) South Pacific Regional Environmental Programme (SPREP)

## Preface to the Directory

This directory has been based on the responses received by the UNEP-HEM office to a questionnaire that was circulated in April 1993. The questionnaire was sent to known practitioners in the environmental monitoring field and also to those organizations brought to light by the organizations involved in the draft edition of this publication.

The questionnaire itself was developed primarily in order to gain general information on each organization and its activities and furthermore to allow the individual organizations to highlight and describe their particular efforts in the environmental monitoring field. With respect to these criteria, it would be beneficial to the user of this directory to clarify some of the categories that UNEP-HEM have employed.

In the field 'Type of Institution', the definitions that apply for each category are listed at the conclusion of the questionnaire, to aid both directory participant and user alike.

Similarly, the 'geographical scope' section of the questionnaire has been standardized in four categories and the explanation for each sector can also be found in the included questionnaire.

The 'sectors' field was originally divided in 20 separate categories. This was undertaken in order that standardization was attained, aiding comparison and appraisal procedures for the user. These categories are comparable to the INFOTERRA terminology and are also illustrated at the conclusion of the questionnaire.

In some of the entries under the field 'sectors', a category 'other' has been included. This was designed to give individual organizations the capacity to demonstrate their fields of monitoring, when they were not described adequately by the standard INFOTERRA terminology. Therefore, a clearer perception can be attained regarding each organization and its activities.

The field 'reference materials' refers specifically to a material or substance, one or more of whose property values are sufficiently homogenous and well established to be used for the calibration of an apparatus, the assessment of a measurement method, or for assigning values to materials. The questionnaire then allowed subsequent division of this category with regard to the role of reference materials within the individual organization.

The field 'QA/QC Procedures' (QA/QC = Quality Assurance/Quality Control) refers firstly to the set procedures undertaken by laboratory staff for continuous monitoring of operations and results, in order to decide whether the results are reliable enough to be released, known as QC. The sum total of a laboratory's activities aimed at achieving the required standard of analysis is referred to as QA.

Finally, the directory numbers themselves were assigned by the UNEP-HEM office largely as a sorting procedure. They do not reflect any particular characteristics of the individual organizations and were employed merely on the date of the return of the questionnaire.

However, the prefixed number to each three digit entry reflects the organizational structure of the relevant organization; number 1 is a United Nations organization, 2 is an inter-governmental organization, 3 is a governmental organization, 4 is a non-governmental organization, 5 is an academic organization and 6 is an industrial/commercial organization.

These prefixes have been included in order to ease the searching procedure and allow quick recognition by the directory user of the individual organization's structure.



**Questionnaire**

**on Organizations and Institutes Active in  
 Environmental Monitoring and/or Measurement.**

If possible, please give the information in English.

1. Full Name of the Organization:

Acronym/Abbreviation:

2. Address:

Country:

3. Contact person:

Function/Title:

4. Telephone:

Telefax:

Telex:

Electronic mail:

5. Type of Institution:

(see definitions page 5)

- United Nations Organization
- Intergovernmental Organization
- Governmental Organization
- Non-profit Organization
- Academic Organization
- Non-Governmental Organization
- International
- National
- Industrial or Commercial
- International
- National
- Other (please specify): \_\_\_\_\_

6. Main activities of the Organization:

- Policy development
- Management and Enforcement
- Coordination
- Education
- Scientific (please specify):
- Research
- Monitoring
- Assessment
- Data/Information management



GSF is the UNEP Supporting Organization for Harmonization of Environmental Measurement

UNEP-HEM office - c/o GSF (Research Centre for Environment and Health)  
 Ingolstädter Landstraße 1 · D-8042 Neuenberg near Munich · Telephone + 49 (0) 89 31 87 - 54 88  
 Telefax + 49 (0) 89 31 87 - 33 25 · e-mail unephem@gsf.de



7. **Geographical scope:**  
(see definitions page 5.)

- |             |                          |                       |
|-------------|--------------------------|-----------------------|
| Global      | <input type="checkbox"/> |                       |
| Regional    | <input type="checkbox"/> | Please specify: _____ |
| National    | <input type="checkbox"/> | Please specify: _____ |
| Subnational | <input type="checkbox"/> | Please specify: _____ |

8. **Personnel:** \_\_\_\_\_ **Budget:** \_\_\_\_\_  
(Please indicate the approximate number of fulltime personnel in your organization, and the annual total budget in US\$.)

9. **Please describe briefly the activities of your organization related to environmental monitoring and research:** (e.g. holding regular international meetings, issuing guidelines for measurement techniques and practices, publishing treatises etc.)

10. **Your activities are primarily related to monitoring/research in the following sectors:**  
A table with the relevant Infoterra thesaurus terms is attached on page 6 for reference.

Atmosphere	<input type="checkbox"/>	Biosphere	<input type="checkbox"/>
Outdoor air	<input type="checkbox"/>	Flora	<input type="checkbox"/>
Indoor air	<input type="checkbox"/>	Fauna	<input type="checkbox"/>
		Human	<input type="checkbox"/>
Hydrosphere	<input type="checkbox"/>	Cross media	<input type="checkbox"/>
Marine Water	<input type="checkbox"/>	Food	<input type="checkbox"/>
Fresh Water	<input type="checkbox"/>	Ecosystem	<input type="checkbox"/>
Snow/Ice	<input type="checkbox"/>	Environment and development	<input type="checkbox"/>
Lithosphere	<input type="checkbox"/>	Environment and social conditions	<input type="checkbox"/>
Sediment	<input type="checkbox"/>	Other (please specify: _____)	
Soil	<input type="checkbox"/>	_____	
Rock	<input type="checkbox"/>	_____	

**11. Is your organization concerned with reference materials in any way?**

Using  
Producing  
Certifying  
Supplying


**12. If possible please give an indication of the quality assurance (QA) arrangements for your measurements, for external data used, or for data produced by your activities:** (e.g. if you have a QA programme, if you participate in local/national/international QA programme, if you perform quality control (QC) procedures, if you participate in interlaboratory comparison exercises, etc)

**13. The objectives of the activities typically include:** (e.g. pollutant control monitoring, early warning or vigilance systems, observation of climate change, identification of pollution sources, verification of models etc.)

**14. Typical types of instrumentation involved are:**



15. Please give a short description of your main environmental databases:

16. Is your organization involved in any international scientific programmes?  
If yes, please specify:

17. Names (and addresses) of additional organizations active in this field and not mentioned in the directory are:

18. Additional comments:

Please attach brochures, annual reports etc. of your organization, if available.

Thank you for completing the questionnaire. Please return as soon as possible to:

UNEP-HEM office,  
c/o GSF, Ingolstädter Landstraße 1,  
DW-8042 Neuherberg,  
GERMANY

**Neue GSF-Adresse ab 1.7.1998:**  
Neuherberg, Postfach 1129  
85758 Oberschleißheim

## Definition of terms and categories:

1. **Organization:** *A company, corporation, firm, enterprise or institution, or part thereof, whether incorporated or not, public or private, that has its own functions and administration (ISO)*

For the purpose of this questionnaire, please report on significant subdivisions of large organizations at an intermediate level - that is, for example neither an entire government ministry, nor each separate small laboratory within one agency.

## 2. Types of organization:

- **United Nations Organization:** *Organization which is a part of the UN system*
- **Intergovernmental Organization:** *Organization controlled or directed by more than one government / nation, and not part of the UN system*
- **Governmental Organization:** *Government administration, department, ministry, agency, research centre, or part thereof, national or subnational, directly controlled and funded by government*
- **Non-Governmental Organization (NGO):** *Interest, voluntary, or research organization, non-profit; including professional association, independent research centre, scientific union, trade union, and similar*
- **Academic Organization:** *University, or similar/scholarly institution, non-profit, involved in education and research*
- **Industrial or commercial:** *Commercial private sector organization; enterprise, firm, corporation*
- **Other:** *Anything not covered by the above*

## 7. Geographical scope:

- Global:** *international, covering all main parts of the world*  
**Regional:** *international, covering (parts of) more than one country forming a natural or administrative region*  
**National:** *covering one country*  
**Subnational:** *covering specific natural or administrative parts of one country*

**10. Your activities are primarily related to monitoring/research in the following sectors:**

Note: For those familiar with the Infoterra thesaurus, the following are considered to be approximately equivalent terms:

THIS QUESTIONNAIRE:	INFO TERRA TERMS:
Atmosphere	
Outdoor air	Air pollution
Indoor air	Indoor air pollution
Hydrosphere	
Marine Water	Marine environment, Oceans and coastal areas
Fresh Water	Freshwater
Snow/Ice	Snow and ice
Lithosphere	
Sediment	Sedimentary basins, Sedimentation, Marine sediments
Soil	Soils
Rock	Mineral resources, Geology
Biosphere	
Flora	Flora
Fauna	Fauna
Human	Human biology, Human health, Human settlements
Cross media	
Food	Food
Ecosystem	Terrestrial ecosystems, Marine ecosystems, Freshwater ecosystems, and other more specific terms
Environment and development	Environment and development
Environment and social conditions	No general term applies

## Sample Entry Format

Directory Number:

Country:

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Name of Organization (Acronym):

Address:

Contact:

Telephone:

E-Mail:

Telefax:

Telex:

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Type of Organization:

Activities:

Geographical Scope:

Sectors:

(Other):

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Keywords:

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Activities Related to Measurements and Monitoring:

Scope of the Measurements:

QA/QC Activities:

Reference Materials:

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Instrumentation:

Databases:

Publications:

Programme Participation:

Meetings:

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Personnel:

Budget:

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## List of Instrumentation Abbreviations

AA	Atomic Absorption
AAS	Atomic Absorption Spectrometry
AES	Atomic Emission Spectroscopy
AOX	Adsorbable Organic Halides
BOD	Biological Oxygen Demand
CFC	Chlorofluorocarbon
COD	Chemical Oxygen Demand
CZE	Capillary Zone Electrophoresis
DMS	Dimethylsulphide
DOAS	Differential Optical Absorption Spectroscopy
DOC	Dissolved Organic Carbon
ECD	Electron Capture Detection
ELISA	Enzyme Linked Immunosorbent Assay
ERS	European Remote Sensing Satellite
FDP	Fast Digital Processor
FIA	Flame Ionization Absorption
FID	Flame Ionization Detection
FT-IR	Fourier Transform Infrared (Spectrometry)
GC	Gas Chromatography
GLC	Gas/Liquid chromatography
GLP	Gas Laser Photometry
GOES	Geo-stationary Operational Environmental Satellites
GIS	Geographical Information System
HPLC	High Performance Liquid Chromatography
HVS	High Volume Sampler
ICL	Instrument Calibration Laboratory
ICP	Inductively-coupled Plasma Source
IC	Ion Chromatograph
ID	Isotope Dilution
IR	Infrared (Spectrometry)
LC	Liquid Chromatography
LIDAR	Light Detection and Ranging
MS	Mass Spectrometry
NAA	Neutron Activation Analysis
ODP	Ozone Depletion Potential
PIXE	Particle Induced X-ray Emission
SFC	Super Critical Fluid
SPM	Suspended Particulate Matter
SQL	Space Qualified Laser
TDLS	Tunable Diode Laser Spectrometer
TDS	Total Dissolved Solids
TOC	Total Organic Carbon

TSP	Total Suspended Particulates
UV	Ultraviolet
VIS	Visible Spectroscopy
VOC	Volatile Organic Compound
XRF	X-ray Fluorescence Spectrophotometer

## List of Programme Abbreviations

AES	Atmospheric Environment Service (Canada)
AMAP	Arctic Monitoring and Assessment Programme
ASCII	American Standard Code for Information Interchange
ATMOS	Atmospheric Inputs of Pollutants to the North Sea
BAPMoN	Background Air Pollution Monitoring Network
BERM	Biological and Environmental Reference Materials
BIATEX	Biosphere-Atmosphere Exchange of Pollutants (EUROTRAC)
BLMP	Bund-Laender Mess-Programm (Germany)
CAMP	Coastal Area Management Programme
CEC	Commission of the European Communities
CGIAR	Consultative Group on International Agricultural Research
COARE	Coupled Ocean-Atmosphere Response Experiment
CORINE	Coordinated Information System on the State of the Environment and Natural Resources (CEC)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DIN	German Institute for Standardization
EASOE	European Arctic Stratospheric Ozone Experiment
EEA	European Environment Agency
EMEP	Cooperative Programme for the Monitoring and Evaluation of Long-Range Transmission of Air Pollutants in Europe
ENVISAT	Environmental Satellite
EPOCH	European Programme of Chemicals and Hazards
ESA	European Space Agency
ETEX	European Tracer Experiment
EUROCARE	European Cultural Heritage and Building Stock
EUROMAR	European Project on Marine Research and Technology (EUREKA)
EUROSILVA	Forest Physiology and Biology Project (EUREKA)
EUROTRAC	European Experiment on Transport and Transformation of Environmentally Relevant Trace Constituents in the Troposphere over Europe
FID	International Federation for Documentation (Den Haag)
GATT	General Agreement on Tariffs and Trade
GAW	Global Atmosphere Watch
GCOS	Global Climate Observing System
GEMS	Global Environmental Monitoring System
GESAMP	Group of Experts on the Scientific Aspects of Marine Pollution
GEWEX	Global Energy and Water Cycle Experiment
GIPME	Working Committee for the Global Investigation of Pollution in the Marine Environment

GLOBEC	Global Ocean Ecosystem Dynamics
GLOSS	Global Sea Level Observing System
GOEZS	Global Ocean Euphotic Zone Study (IGBP)
GOOS	Global Ocean Observing System
GO3OS	Global Ozone Observing System
GPC	Global Processing Centre
GRID	Global Resource Information Database
HALIPP	Heterogenous and Liquid Phase Processes
HEAL	Human Exposure Assessment Location Programme
HELCOM	Helsinki Commission
IAEA	International Atomic Energy Agency
ICES	International Council for the Exploration of the Sea
ICPIC	International Cleaner Production Information Clearing-house
IGAC	International Global Atmospheric Chemistry Programme
IGBP	International Geosphere-Biosphere Programme
IGOSS	Integrated Global Ocean Services System
IHP	International Hydrological Programme
IICA	Inter-American Institute for Co-operation on Agriculture
IMO	International Maritime Organization
INC	Inter-governmental Negotiating Committee
IODE	International Oceanographic Data Exchange
IPCC	Intergovernmental Panel on Climate Change
IUBS	International Union of Biological Sciences (ICSU)
IWRA	International Water Resources Association
JGOFS	Joint Global Ocean Flux Study
JMP	Joint Monitoring Programme
LANIS	Landscape Information System (Germany)
LOICZ	Land Ocean Interactions in the Coastal Zone (IGBP)
LRTAP	Long Range Transport of Atmospheric Pollutants
MARPOLMON	Marine Pollution Monitoring System (IOC)
MAST	Marine Science and Technology (EC)
MAB	Man and the Biosphere Programme
MED POL	Programme on Monitoring and Modelling of Pollution of the Mediterranean Sea Through the Atmosphere
NEA	Nuclear Energy Agency (OECD)
NOAA	National Oceanic and Atmospheric Administration
OAS	Organization of American States
OECD	Organization for Economic Co-operation and Development
PARCOM	Paris Commission
QUASIMEME	Quality Assurance of Information for Marine Environmental Monitoring in Europe (CEC BCR)
SCAR	Scientific Committee on Antarctic Research
SCOR	Scientific Committee on Oceanic Research
SCRIP	Soil Conservation Research Project
SESAME	Solid Earth Science and Application Missions for Europe
SPREP POL	South Pacific Regional Environmental Programme
STEP	Solar Terrestrial Energy Programme
STEP	Science and Technology for Environment Protection (CEC)
TOGA	Tropical Ocean and Global Atmosphere (WCRP)



TOR	Tropospheric Ozone Research (EUROTRAC)
TRACT	Transport of Pollutants Over Complex Terrain (EUROTRAC)
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WESTPAC	Western Pacific Experiment (IOC)
WCRP	World Climate Research Programme
WMO	World Meteorological Organization
WOCAT	World Overview of Conservation Activities and Techniques
WOCE	World Ocean Circulation Experiment
WWF	World Wide Fund for Nature
WWW	World Weather Watch

## Participation in International Monitoring and Research Programmes

### *Climate & Atmosphere Programmes:*

#### **GCOS (WMO/UNEP/Unesco-IOC/ICSU)**

- Fraunhofer IfU (Germany)
- GPCP (Germany)

#### **BAPMoN (UNEP/WMO/GCOS)**

- Japan Meteorological Agency
- National Institute of Meteorology and Geophysics (Portugal)
- CNSA (Spain)
- Bureau of Meteorology AWS (Australia)

#### **GAW (WMO/GCOS)**

- Meteorological Authority (Egypt)
- Fraunhofer IfU (Germany)
- Japan Meteorological Agency
- UNEP GEMS-PAC (Kenya)
- National Institute of Meteorology and Geophysics (Portugal)
- Meteorological Office O.P. Branch (UK)
- Bureau of Meteorology AWS (Australia)

#### **GO3OS (WMO/GCOS)**

- Japan Meteorological Agency
- National Institute for Meteorology and Geophysics (Portugal)
- Bureau of Meteorology
- Atmosphere Watch Section (Australia)

#### **IPCC (UNEP/WMO)**

- IIASA (Austria)
- CICERO (Norway)

#### **WCRP (WMO/UNEP/Unesco-IOC/ICSU)**

- Antarctic CRC (Australia)
- SCOR (USA)
- BAS (UK)
- GPCP (Germany)
- IUGG ICSU

#### **WOCE (WCRP)**

- Antarctic CRC (Australia)
- SCOR (USA)
- IMR (Norway)
- WMO (Switzerland)

#### **TOGA (WCRP)**

- SCOR (USA)
- METEO VACOAS (Philippines)
- SPREP (Western Samoa)
- WMO (Switzerland)

#### **ICP (UN ECE)**

- Environmental Data Centre (Finland)
- SEPA (Sweden)
- NERI (Denmark)

#### **EMEP (UN-ECE)**

- NILU (Norway)
- SFT (Sweden)
- CNSA (Spain)
- Federal Environment Agency (Austria)
- Federal Environment Agency (Germany)

#### **EUROTAC (EUREKA Initiative)**

- EHICS (France)
- Fraunhofer IfU (Germany)
- TNO Department of Environmental Science (Netherlands)
- NERI (Denmark)

*Ocean Programmes:*

**GIPME**

- Bedford Institute of Oceanography (Canada)
- BSH (Germany)
- Japan Meteorological Agency

**MEDPOL (UNEP)**

- Dr. A Felix Health Lab. (Israel)
- UNARC (Egypt)
- University of Tirana (Albania)
- Institute of Chemical Technology (Albania)
- IHM (Albania)

**EUROMAR (EUREKA Initiative)**

- SFT (Norway)

**PARCOM**

- NILU (Norway)
- SEPA (Sweden)
- NERI DOFE (Norway)
- NERI DMEM (Norway)

**HELCOM**

- Environmental Data Centre (Finland)
- WERI (Finland)
- BSH (Germany)
- SEPA (Sweden)
- NERI DOFE (Denmark)
- NERI DMEM (Denmark)
- OSPARCOM (UK)

*Other Programmes:*

**GEMS (UNEP/WHO/WMO)**

- National Board of Waters and Environment (Canada)
- GRDC (Germany)
- CNSA (Spain)
- WHO PEP (Switzerland)
- UNEP GEMS MARC (UK)
- CGER/NIES (Japan)
- EMPAS Department of Natural Resources (Philippines)

**CORINE (EC)**

- BfN (Germany)
- ICN (Portugal)
- SEPA (Sweden)

**AMAP**

- NILU (Norway)
- SEPA (Sweden)
- NERI (Denmark)
- SFT (Norway)

**IGBP (ICSU)**

- SCOR (USA)
- BAS (UK)
- TNO Department of Environmental Science (Netherlands)
- CNRS (France)
- IUFRO (Austria)
- IUGG ICSU (France)

**STEP (EC)**

- KfK PEP (Germany)
- FhG IUCT (Germany)
- FhG IfU (Germany)
- CNSA (Spain)
- ICALPE (France)
- NERI MIKE (Norway)

**EUREKA Initiative**

- EUROSILVA
  - Fraunhofer IfU (Germany)
- EUROCARE
  - NILU (Norway)

## Country-listed Organization's Activities in Different Monitoring Sectors

**Explanation:**

A: atmosphere; B: outdoor air; C: indoor air; D: hydrosphere; E: marine water; F: fresh water;  
 G: snow/ice; H: lithosphere; I: sediment; J: soil; K: rock; L: biosphere; M: flora; N: fauna;  
 O: human; P: cross media; Q: food; R: ecosystem; S: environment & development;  
 T: environment & social conditions

Country	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Albania (4)	1	2	1	0	2	2	0	1	2	2	0	1	1	1	0	0	0	0	0	0
Australia (8)	2	4	1	1	2	3	1	1	3	2	0	3	3	2	4	2	1	3	3	3
Austria (6)	2	3	1	0	0	3	1	1	1	2	0	2	2	1	0	2	0	1	1	1
Belgium (8)	1	0	0	1	1	1	0	1	1	1	0	1	0	0	1	0	2	1	3	1
Botswana (2)	0	0	0	0	0	1	0	0	1	0	0	0	2	0	0	0	0	1	2	1
Canada (6)	1	0	0	3	5	4	1	0	1	0	0	3	2	4	3	1	2	5	2	1
Chile (3)	0	3	1	1	2	0	0	0	1	1	0	2	0	1	0	0	0	0	1	1
China (4)	0	4	3	0	2	4	0	0	2	3	0	3	0	0	0	3	0	0	0	0
Colombia (2)	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	2	2	1
Costa Rica (2)	0	1	0	0	0	1	0	0	1	1	0	1	1	1	0	0	0	1	0	0
Croatia (1)	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Denmark (8)	3	3	0	4	3	3	1	3	2	3	0	7	6	6	3	5	0	7	5	1
Egypt (2)	2	2	1	1	1	1	0	1	1	1	1	1	0	0	1	2	1	1	2	1
Finland (4)	0	2	0	0	2	2	0	0	2	1	0	2	1	1	0	1	0	0	1	0
France (12)	3	4	2	4	4	6	2	4	3	5	2	4	4	4	2	4	1	4	3	2
Germany (31)	9	19	8	9	9	15	3	10	12	16	1	9	7	5	1	6	2	8	7	1
Greece (1)	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
Guatemala (1)	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1
Hungary (1)	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
India (7)	2	5	2	2	2	6	0	2	2	4	1	4	2	1	1	2	1	2	3	0
Ivory Coast (1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Israel (2)	0	0	0	0	2	2	0	0	1	0	0	1	0	0	0	0	1	0	0	0
Italy (7)	3	5	4	1	4	4	0	2	3	3	0	4	1	1	0	2	2	1	1	0

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**Forests and Pastures Research Institute (IKPK)**

**Rruga "Niko Avrimi"**  
**Tirana**  
**Albania**

**Contact:** Dr. Parim Carcani, Director of Agricultural Sciences

**Telephone:** +355 42 33343

**Telefax:** +355 42 27665

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
National  
Albania

**Activities:**  
Research  
Monitoring

**Sectors:**  
Lithosphere, Soil, Biosphere, Flora, Fauna

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**Keywords:**  
12328 FOREST CONSERVATION  
12335 FOREST FIRES  
12370 TEMPERATE FORESTS & WOODLANDS  
12744 HUNTING  
12760 NATIONAL PARKS AND RESERVES  
15114 FOREST MANAGEMENT  
15121 FOREST POLICY  
25230 FOREST RESOURCE ASSESSMENT

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**Activities Related to Measurements and Monitoring:**

- Guidelines for the protection against forest fire.
- Guidelines for forest management.
- Guidelines for forest inventories.
- Guidelines for protecting forest areas against erosion.
- Guidelines for protection against forest diseases and other detrimental problems.

**Scope of the Measurements/Activities:**

Studies on increasing productivity of degraded oak woods and shrub lands.  
Conservation of oak coppice forest in high oak forests.  
Studies on seed strands of Black Pine and White Fir with the creation of seed orchards of Black Pine. This includes methods of reproduction to improve coniferous and broad leafed trees.  
Tests on the origin of exotic species with rapid growth features and the possibilities of their introduction to Albania.  
Tests to protect against Chestnut cancer.  
Studies on the problems of National Parks management and the management of biogenetic and hunting reserves.  
Researching the problems of treating Mediterranean shrubs for grazing goals and the problems of conservation and productivity of natural pastures.

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**Instrumentation:**

Biological Thermostat, Phytopathological microscope, Stereo-microscope, Analytical Weighing Balance, Cooled Incubator, Pharmaceutical Refrigerator, Precision pH Meter, Digital Flame Photometer, Muffle Furnace and Electric Analytical Weighing Balance.

**Databases:**

IKPK have environmental databases in the following fields:

- Forest diseases and threats.
- Soil erosion.
- Forest fires.
- Hunting reserves.
- National Parks.
- Biogenetic Reserves.
- Forest inventory and management.
- Natural pastures.

**Programme Participation:**

World Bank Project for Albanian Forest Development.

**Meetings:**

Conference on the Environmental situation in Europe, December 1991.  
Specialization on Environmental Protection meeting, May/June 1992.

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Personnel: 50

Budget: 50000 US\$

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**Institute of Chemical Technology**

**Bloku Vasil SHANTO**  
Tirana  
Albania

**Contact:** Mr. Emil Gjika

**Telephone:** +355 42 234 66

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**Type of Organization**

Governmental Organization  
National

**Geographical Scope:**

National  
Albania

**Activities:**

Research  
Monitoring

**Sectors:**

Atmosphere, Outdoor air, Indoor air

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**Keywords:**

18112 CHEMICAL INDUSTRY  
22100 POLLUTANTS  
22130 INDUSTRIAL EMISSIONS  
22134 INORGANIC POLLUTANTS  
25124 IDENTIFICATION OF POLLUTANTS

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**Activities Related to Measurements and Monitoring:**

Inventory of pollution in the chemical industry.  
Analysing gaseous, liquid and solid pollutants (mainly inorganic substances).

**Scope of the Measurements/Activities:**

Determination of the levels of pollution from the chemical industry and subsequent pollution abatement.

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**Instrumentation:**

Spectrophotometer, pH Meter, Karl-Fischer Apparatus, Analytical Balance.

**Databases:**

Non-systematic data on pollution from the chemical industry.

**Programme Participation:**

MED POL.

**Publications:**

Bulletin of Chemical Technology.

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**Institute of Hydrometeorology (IHM)**

**Rruga Kongresi Permetit, 26  
Tirana  
Albania**

**Contact: Mr. Miron Nuri, Director**

**Telephone: + 355 42 23518**

**Telefax: + 355 42 23518**

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**Type of Organization:**

Governmental Organization  
National

**Geographical Scope:**

National  
Albania

**Activities:**

Monitoring  
Assessment  
Data/Information management  
Research

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment  
Other: Air and water quality monitoring, pollution control, water analyses

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**Keywords:**

10400 CLIMATE AND CLIMATE CHANGE  
13188 WATER RESOURCES CONSERVATION  
13378 WATER POLLUTION  
14142 MARINE POLLUTION  
22100 POLLUTANTS  
25270 WATER QUALITY

---

**Activities Related to Measurements and Monitoring:**

Conduction of analyses of field measurements and laboratory data.  
Conduction of training for laboratory analyses.  
Research in the field of climatic change and water environment.

**Scope of the Measurements/Activities:**

Identification of pollution sources.  
Observation of climatic change.  
Pollution control monitoring (for limited substances).

**Reference materials:**

User

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**Instrumentation:**

pH Meter, Conductimeter, Salinometer, Analytical Weighing Balance,  
Autoclave, BOD Incubator and Microscopes.

**Databases:**

Water quality data in rivers (Annual).  
Water quality data in coastal waters (Seasonally).

**Programme Participation:**

Coastal Area Management Programme (CAMP). MED-POL Blue-Plan.

**Publications:**

Optimal Observation Network of Air Quality 1989.  
Monitoring of the quality of waters in the rivers of Albania 1990.

**Meetings:**

Physical and chemical qualities of water in the rivers of Albania. Conference on environmental protection (Varna, Bulgaria, 1988).  
Participation in the training course on the protection of the Adriatic Sea from pollution (Italy, 1989).  
Training course for the determination of pollutants in sea water (Italy, 1991).

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**Faculty of Natural Sciences**

University of Tirana  
Tirana  
Albania

Contact: Dr. Niko Peja, Chief of Zoological and Ecological Chair

Telephone: +355 42 276 69

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Albania

**Activities:**

Education  
Research  
Monitoring  
Assessment

**Sectors:**

Marine water, Fresh water, Sediment, Soil  
Other: Ground Water, Biological Matrices

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**Keywords:**

12760 NATIONAL PARKS AND RESERVES  
15145 NATURE CONSERVATION  
22100 POLLUTANTS  
23156 POLLUTANT EFFECTS  
25100 POLLUTANT MONITORING  
25220 ENVIRONMENTAL MONITORING

---

**Activities Related to Measurements and Monitoring:**

The study of fauna in Albania: animals, birds, reptiles, amphibians, insects and fauna of the soil.

The Environmental impact assessment of several factors in the dynamic population of nature.

**Scope of the Measurements/Activities:**

Observation of population changes in the natural environment.  
Pollutant control monitoring.  
The study of flora in Albania.  
The determination of endemic and threatened plant species.  
The study of flora and plants in the National Park of Llogara-Vlore.

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**Instrumentation:**

Atomic Absorption Spectrophotometer, Gas Chromatography,  
UV Spectrophotometer, pH Meter, Analytical Weighing Balance,  
Mercury Analyses and Bacteriological Microscope.

**Programme Participation:**

MED-POL. INTERREG.

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**Biodiversity Coalition**

Tasmania 7112  
Australia

Contact: Mr. Alistair Graham, Coordinator

Telephone: + 61 2 951745

E-Mail: pegasus:biodiversity

Telefax: + 61 2 951964

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Other: Policy and legislation development

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**Keywords:**

12700 BIOLOGICAL DIVERSITY AND PROTECTED AREAS

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**Activities Related to Measurements and Monitoring:**

Publishing occasional newsletters and participating in networks to facilitate national policy development to implement the biodiversity campaign.

**Scope of the Measurements/Activities:**

Implementation of the Convention on Biological Diversity.

**Reference materials:**

User

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**Databases:**

Mailing lists of individuals, NGO's and agencies active on biodiversity issues.

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**Personnel:** 1

**Budget:** 20 000 US\$

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**Botanic Gardens of Adelaide and State Herbarium**

c/o Botanic Garden, North Terrace  
Adelaide S.A. 5000  
Australia

Contact: Dr. Brian Morley, Director

Telephone: +61 8 228 2320

Telefax: +61 8 223 1809

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Management and Enforcement  
Education  
Research  
Monitoring  
Data/Information management

**Sectors:**

Biosphere, Flora, Cross media, Environment and social conditions

---

**Keywords:**

12732 ENDANGERED PLANT SPECIES  
12824 FUNGI AND YEASTS  
14106 ALGAL BLOOM  
15145 NATURE CONSERVATION  
28169 PLANT GENETICS  
28170 PLANT PHYSIOLOGY

---

**Activities Related to Measurements and Monitoring:**

Maintaining a living plant database including ex-situ collections of rare and endangered plant species.  
Research conservation status of plants.  
Monitoring the re-introduction of rare plants back in to native habitats.  
Survey and publication of state floras and checklist.  
Important Australian marine algal and fungal herbaria.

**Scope of the Measurements/Activities:**

To document and increase understanding, knowledge and enjoyment of all aspects of the plant kingdom, including fungi and fossils, with particular reference to the flora of South Australia.

To preserve, maintain and manage scientific and educational collections of living and dried plant specimens in gardens herbaria and museums.

To provide open access to information which will be the basis for maintenance of biodiversity and help to reduce the rate of destruction of plant species and their ecosystems.

To publish, articulate, display and interpret for the community, including governments, information on all aspects of the plant kingdom.

To maintain a fundamental role as a regional centre of excellence in plant science and garden curation while providing support for national and international collaboration.

**QA/QC Activities:**

No formal QA programmes, but output is a statutory obligation of state government and world class standards apply.

**Reference materials:**

User; Producer; Certifier; Supplier

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**Instrumentation:**

Many instruments, but too many to specify

**Databases:**

Plant record system utilising a Hewlett Packard 9000 Series computer and TITAN software complete and ongoing

Herbarium database (ADHERB), with 800 000 specimen entries is in the process of being created on the IBM RT computer.

**Programme Participation:**

IUCN/BGC IIABG coordination. WWF Australia.

**Publications:**

Journal of the Adelaide Botanic Gardens

Annual report of the Board of the Botanical Gardens, Adelaide.

Many specific papers and reports on issues and individual species in the plant kingdom.

**Meetings:**

Monthly meeting of the Board of the Botanical Gardens of Adelaide and State Herbarium.

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**Personnel:** 123

**Budget:** 5.5 MIL Australian \$

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**Bureau of Meteorology  
Atmosphere Watch Section**

Melbourne VICTORIA 3001  
Australia

Contact: Mr. P. Price, Head

Telephone: +61 03 669 4111      E-Mail: P.Price@bom.gov.au  
Telefax:      +61 03 669 4736

---

**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
National  
Australia

**Activities:**  
Research  
Monitoring  
Data/Information management

**Sectors:**  
Atmosphere, Outdoor air

---

**Keywords:**  
10170 OZONE LAYER  
10280 SOLAR RADIATION  
10300 AIR POLLUTION  
10320 AIR POLLUTANTS  
25215 BASELINE MONITORING  
25220 ENVIRONMENTAL MONITORING  
28157 METEOROLOGY

---

**Activities Related to Measurements and Monitoring:**  
Global background air pollution monitoring at Cape Grim Baseline Air Pollution Station in Northwest Tasmania.  
Regional background air pollution monitoring at two sites in Australia.  
Stratospheric ozone monitoring.



Solar radiation monitoring.  
Archiving and quality controlling data.  
Publishing treatises and results.  
Holding and attending meetings.

**Scope of the Measurements/Activities:**

Monitoring of the constituents of the unpolluted background air.  
Monitoring of regional air quality, through analysis of precipitation.  
Monitoring of stratospheric ozone levels and solar radiation.

**QA/QC Activities:**

Regular instrument inter-comparisons.  
Maintenance of certified standards.

**Reference materials:**

User; Producer

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**Instrumentation:**

Gas chromatographs and other chemical analysis equipment.  
Alpha detectors (radon).  
Thermoelectron (surface ozone).  
Aethelometer (particulate carbon).  
Infra red gas analysis (CO<sub>2</sub>)  
Pollack particle detector (condensation nuclei).  
Dobson spectrophotometer (ozone).  
Ozone sonde.  
Pyroheli- and Pyranometer.

**Databases:**

Cape Grim Baseline Air Pollution Station database.  
Ozone and Radiation databases.

**Programme Participation:**

The World Meteorological Organization's Global Atmosphere Watch, Background Air Pollution Monitoring Network and Global Ozone Observing System. Baseline Surface Radiation Network, as a part of the World Climate Research Programme (WCRP).

**Publications:**

Treatises and Results of tests relating to meteorology and the atmosphere.

**Meetings:**

Meetings on meteorology and the atmosphere.

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Personnel: 23

Budget: 2.3 MIL US\$

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**Bureau of Meteorology  
Hydrology Section**

Melbourne Victoria 3001  
Australia

Contact: Mr. Bruce Stewart, Superintendent of Hydrology

Telephone: + 61 3 669 4522

E-Mail: b.stewart.@bom.gov.au

Telefax: + 61 3 669 4725

Telex: AA 30601

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Australia

**Activities:**

Assessment

**Sectors:**

Hydrosphere, Fresh water

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**Keywords:**

13188 WATER RESOURCES CONSERVATION  
13196 WATER RESOURCES DEVELOPMENT  
13378 WATER POLLUTION  
25270 WATER QUALITY  
25372 STREAM MEASUREMENTS  
28147 HYDROLOGY

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**Activities Related to Measurements and Monitoring:**

Analysis of data from benchmark water resource stations.  
Publishing results.  
Holding and attending meetings.

**Scope of the Measurements/Activities:**

Observation and assessment of climate variability and change.  
Ensuring climate considerations are included in environmental monitoring activities.

**QA/QC Activities:**

QA programme is carried out by water agencies collecting the river flow data. Some additional internal consistency checks and inter-station comparisons are carried out.

**Reference materials:**

User; Producer

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**Databases:**

Stream flow data from network of benchmark water resource stations.

**Programme Participation:**

World Meteorological Organization Operational Hydrology Programme.  
UNESCO International Hydrology Programme.

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**Personnel: 50**

**Budget: 2.7 MIL US\$**

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**Commonwealth Environment Protection Agency  
(CEPA)**

Queen Victoria Terrace  
ACT 2600  
Australia

Contact: Mr. Tony Fleming, Director of Monitoring and Reporting Section

Telephone: +61 06 274 1072  
Telefax: +61 06 274 1230

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**Type of Organization:**

Governmental Organization  
International

**Geographical Scope:**

National  
Australia

**Activities:**

Policy development  
Coordination  
Data/Information management

**Sectors:**

Cross media, Environment and development, Environment and social  
conditions,  
Human, Biosphere

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**Keywords:**

15000 ENVIRONMENT AND DEVELOPMENT  
15107 ENVIRONMENTAL MANAGEMENT  
15244 ENVIRONMENTAL POLICY  
25000 MONITORING AND ENVIRONMENTAL DATA  
25225 ENVIRONMENTAL STATISTICS

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**Activities Related to Measurements and Monitoring:**

State of the Environment Reporting aims to:

- Describe the Australian environment.
- Monitor and report on change in environmental quality over time.
- Identify the agents responsible for the changes.

- Monitor and report on the effectiveness of policies and programmes responding to change, including progress towards achieving targets.
- Report on future implications of any identified trends.

**Scope of the Measurements/Activities:**

SoE's purpose is to provide information to:

- Increase public understanding of the state of the environment.
- Improve the quality of public debate on environmental issues.
- Improve the quality of decisions which may effect the environment.
- Meet international reporting obligations (e.g. to OECD and the UN Commission for Sustainable Development).

**QA/QC Activities:**

There is an SoE Advisory Committee, comprising experts from both inside and outside of Government, which advises CEPA on the development of the SoE reporting system.

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**Instrumentation:**

Series of reports, particularly the comprehensive National Report on the State of the Environment.

A sophisticated data management system underpinning the State of the Environment Reporting.

CEPA-selected core set of environmental indicators illustrating certain environmental parameters for identification.

**Databases:**

CEPA has set out to establish a GIS/RDMS combination database suitable for aggregation of State/regional datasets to the national level. This database is to be compatible with the Environmental Resources Information Network (ERIN).

**Programme Participation:**

ANZECC's Standing Committee on Environment Protection.

**Publications:**

"Development of a National State of the Environment Reporting System", outlining a framework for national SoE reporting.  
Annual Report of CEPA activities.

**Meetings:**

OECD country review of Australia's environmental performance, at which the first CEPA National Report should be shown, in 1996.

Workshop held in February 1993 on issues raised in the SoE Discussion Paper.

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**Commonwealth Scientific and Industrial Research Organization  
(CSIRO)**

407 Royal Parade  
Parkville 3052  
Australia

Contact: Dr. John Stocker, Chief Executive Officer

Telephone: +61 03 662 7111

Telefax: +61 03 662 7196

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Australia

**Activities:**

Policy development

Assessment

Research

Education

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil,  
Environment and development, Environment and social conditions, Human,  
Ecosystem

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**Keywords:**

10418 CLIMATIC CHANGE

12132 LAND RESTORATION

12700 BIOLOGICAL DIVERSITY AND PROTECTED AREAS

12786 WILDLIFE CONSERVATION

13196 WATER RESOURCES DEVELOPMENT

13480 WATER TREATMENT

17154 FISHERIES MANAGEMENT

18148 MINING

20230 ENERGY CONSERVATION

22130 INDUSTRIAL EMISSIONS

22472 WASTE DISPOSAL  
22472 WASTE DISPOSAL  
25100 POLLUTANT MONITORING  
25342 MODELLING AND SIMULATION

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**Activities related to Measurements and Monitoring:**

1. Climate Change

A number of divisions of CSIRO are researching the greenhouse effect, the chemistry of the atmosphere, the role of the oceans, general circulation modelling, impacts etc.

2. Waste Emissions

Various divisions are involved in assessing environmental impacts of emissions from industry, mining, energy production, transport, etc.

**Scope of the Measurements/Activities:**

Observation of changes to atmosphere composition

Pollution control monitoring

Identification of sources of pollution

Transport and dispersion of pollution

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**Instrumentation:**

Sophisticated detection and analysis equipment and high level computer modelling.

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**Cooperative Research Centre for the Antarctic and Southern  
Ocean Environment (Antarcrc CRC)**

Hobart Tasmania 7001  
Australia

Contact: Mr. R. Cameron-Tucker, Executive Officer

Telephone: + 61 02 202 380      E-Mail: R.CameronTucker@antcrc.utas.edu.au  
Telefax:      + 61 02 202 973

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**Geographical Scope:**  
Global

**Activities:**  
Policy development  
Coordination  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**  
Atmosphere, Outdoor air, Marine water, Snow/Ice, Lithosphere, Sediment,  
Biosphere, Flora, Fauna, Human, Ecosystem, Environment and development

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**Keywords:**  
10300 AIR POLLUTION  
12760 NATIONAL PARKS AND RESERVES  
13378 WATER POLLUTION  
15100 RESOURCES MANAGEMENT  
15107 ENVIRONMENTAL MANAGEMENT  
15128 LAND USE PLANNING  
15145 NATURE CONSERVATION  
15163 RESOURCE APPRAISAL  
15244 ENVIRONMENTAL POLICY  
15264 POLICY PLANNING  
16118 HISTORICAL SITES AND MONUMENTS  
16428 HUMAN POPULATION  
16464 SOCIAL AND CULTURAL INDICATORS  
16525 DISTRICT HEATING  
20116 ENERGY RESOURCES  
20124 FUEL WOOD  
20230 ENERGY CONSERVATION



20250 ENERGY UTILIZATION PATTERNS  
22472 WASTE DISPOSAL  
25220 ENVIRONMENTAL MONITORING  
27110 DATA PROCESSING  
27140 ENVIRONMENTAL TRAINING  
27170 PUBLIC INFORMATION  
30020 DEVELOPING COUNTRIES  
30030 DEVELOPED COUNTRIES  
30105 EAST AFRICA  
30305 EASTERN ASIA  
30601 ANTARCTIC OCEAN

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**Activities Related to Measurements and Monitoring:**

Attending and holding international meetings, publishing treatises and participating in scientific projects.

**Scope of the Measurements/Activities:**

Observation of climate change.

Verification of models.

**QA/QC Activities:**

Participation in international programmes.

Participation in joint laboratory exercises/workshops/seminar series.

**Reference materials:**

User; Producer

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**Instrumentation:**

Computer modelling.

Analysis of ice cores and sediment cores.

Production of culture strains from Antarctic microbes.

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**Programme Participation:**

International Radiation Commission. WOCE. SCAR (GOSEAC). SCAR (GLOCHANT). International Commission on Polar Meteorology. WCRP International Programme for Arctic Buoys. SCAR Working Group on Physics and Chemistry of the Atmosphere. Antarctic Seismic Data Library System

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**Office of the Supervising Scientist for the Alligator Rivers  
Region (OSS)**

Level 2 Tourism House  
40 Blackall Street  
Barton ACT 2600  
Australia

Contact: Dr. Glen Riley, Acting Supervising Scientist

Telephone: +06 274 1222

Telefax: +06 273 5019

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Subnational  
Alligator River Region, Northern Territory

**Activities:**

Research  
Monitoring  
Assessment

**Sectors:**

Outdoor air, Fresh water, Sediment, Soil, Flora, Fauna, Human, Food,  
Ecosystem

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**Keywords:**

13156 RIVERS  
13300 POLLUTION AND DEGRADATION OF FRESHWATER  
13313 RIVER POLLUTION  
18145 MINERAL INDUSTRY  
18148 MINING  
22372 RADIATION PROTECTION  
25000 MONITORING AND ENVIRONMENTAL DATA

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**Activities Related to Measurements and Monitoring:**

The major role of OSS is to ensure that the environmental protection regime and regulatory arrangements for uranium mining in the Alligator River Region of the Northern Territory meet the highest standards for protection of the environment by the Australian government and the community.

The main functions are:

- to develop, coordinate and manage programmes of research in to the effects on the environment of mining operations.
- to develop standards, practices and procedures that will protect the environment, including people, from the effects of mining operations.
- to develop measures for the protection and restoration of the environment.
- to coordinate and supervise the implementation of environmental requirements.
- to advise the Commonwealth Environment Minister on the environmental effects of mining in the Alligator River Region and on other matters relating to the functions of the Supervising Scientist.

**Scope of the Measurements/Activities:**

Research, monitoring and assessment to ensure ecosystem integrity.  
Development of standards, practices and procedures to protect and restore the environment, associated with the effects of mining operations.  
Undertaking research in to the effects of mining operations on the environment as a basis for sound management decision making.  
Environmental monitoring.  
Radiological monitoring.

**QA/QC Activities:**

Interlaboratory comparisons.  
Round robin tests.  
IAEA round robins.  
The OSS has developed biological testing procedures using the purple spotted gudgeon (*Mogurnda mogurnda*), green hydra (*Hydra viridissima*) and the water flea (*Moinodaphnia macleayi*).

**Reference materials:**

User

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**Instrumentation:**

AAS, Carbon rod AAS, ICPMS, HPLC, TOC analyzer.  
Alpha and Gamma spectrometry.  
Radon, Radon Daughter metrological monitoring.

**Databases:**

Surface water quality.  
Ground water quality and levels.  
Aquatic organisms.  
Radionuclides in air, water and soil.

**Programme Participation:**

IAEA meetings on protection standards for radiation.

**Publications:**

OSS Brochure  
Annual Report.  
Research Plan 1992-93.  
Journal from the OSS.

**Meetings:**

Participation in IAEA sponsored meetings on radiation protection and standards for the uranium mining industry.

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**Personnel: 63**

**Budget: 7.36 MIL.AUS\$**

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**Austrian Federal Environmental Agency**

Spittelauer Laende 5  
Vienna A-1090  
Austria

Contact: Dr. Wolfgang Struwe, Director

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Telefax: +43 1 31 304-400

---

**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Austria

**Activities:**

Policy development  
Management and Enforcement  
Coordination

**Sectors:**

Atmosphere, Outdoor air

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**Keywords:**

10300 AIR POLLUTION  
13378 WATER POLLUTION  
22300 POLLUTION ABATEMENT  
25148 POLLUTANT DISTRIBUTION  
25172 POLLUTANT SOURCE IDENTIFICATION  
25180 POLLUTION MONITORING

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**Activities Related to Measurements and Monitoring:**

Pollution control monitoring.  
Background air monitoring network  
Emission measurements

**Scope of the Measurements/Activities:**

Issuing guidelines for measurement techniques and practices  
Air pollutant control monitoring  
Early warning system for the ozone  
Climate change (CO<sub>2</sub>)

**QA/QC Activities:**

Interlaboratory comparison (EMEP).  
Regular check of ozone reference standard at STUDSVIK/Sweden.  
Intercomparison of CO<sub>2</sub> standards.

**Reference materials:**

Certifier

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**Instrumentation:**

Air pollution monitors.  
O<sub>3</sub>: UV absorption.  
CO: IR, gas, filter correlation.  
SO<sub>2</sub>: DOAS (opsis).  
NO<sub>2</sub>: DOAS (opsis).  
PM: TEOM.  
CO<sub>2</sub>: IR.

**Databases:**

Database for ambient air concentration, which is measured in the network.

**Programme Participation:**

EMEP TOR.

**Publications:**

Series of "Monographion", "Reports" (German).  
Series of "Conference Papers" (German or English).

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**Personnel:** 200

**Budget:** 5 MIL US\$

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**Centre for Environmental and Nature Protection (ZUN)**

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Vienna A-1180  
Austria

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Telefax: +43 222 47 654 extension 2304

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Regional  
Europe

**Activities:**

Monitoring  
Assessment

**Sectors:**

Biosphere, Flora  
Other: Forest decline, Wood anatomy, Applied plant physiology

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**Keywords:**

10110 AIR QUALITY  
12321 DEFORESTATION  
17280 FOREST PRODUCTS  
20255 AIR POLLUTANTS  
23156 POLLUTANT EFFECTS  
25000 MONITORING AND ENVIRONMENTAL DATA  
25108 BIOLOGICAL INDICATORS  
25220 ENVIRONMENTAL MONITORING  
27130 ENVIRONMENTAL EDUCATION  
27140 ENVIRONMENTAL TRAINING  
27170 PUBLIC INFORMATION  
29317 ENGLISH  
29326 GERMAN  
30400 EUROPE  
30401 WESTERN EUROPE

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**Activities Related to Measurements and Monitoring:**

Biometrical measurements of spruce needles and shoots  
Fluoride in plants, Fluoride measurement techniques  
Measurement of anatomical wood parameters

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**Meetings:**

Air Pollution and Interactions between Organisms in Forest Ecosystems, 15th  
International Meeting of Specialists in Air Pollution Effects on Forest  
Ecosystems, Tharandt/Dresden, 11.09.1992.

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**Institute of Environmental Medicine of the City Council  
of Vienna**

Feldgasse 9  
Vienna A-1080  
Austria

Contact: Prof. Dr. Renate Walter

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
Subnational  
Vienna

**Activities:**  
Monitoring  
Assessment  
Policy development  
Research

**Sectors:**  
Fresh water, Sediment

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**Keywords:**  
10300 AIR POLLUTION  
13180 SURFACE WATERS  
13420 DRINKING WATER  
22176 SEWAGE  
23000 HUMAN HEALTH  
23454 MEDICAL TREATMENT AND HEALTH CARE  
25124 IDENTIFICATION OF POLLUTANTS  
25220 ENVIRONMENTAL MONITORING  
25270 WATER QUALITY  
27130 ENVIRONMENTAL EDUCATION  
27140 ENVIRONMENTAL TRAINING  
28106 ANALYTICAL CHEMISTRY  
28113 BACTERIOLOGY  
28151 LIMNOLOGY  
28158 MICROBIOLOGY

28174 TOXICOLOGY  
28176 VIROLOGY  
29317 ENGLISH  
29323 FRENCH  
29326 GERMAN  
30406 AUSTRIA

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**Activities Related to Measurements and Monitoring:**

Experts from the institute participate in national and international harmonizing efforts.

**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Identification of pollution sources  
Establishment of a base-line for indoor pollution

**Reference materials:**

Advisory service; Consultancy service

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**Instrumentation:**

Gas chromatography, ELISA, Fish test, Daphnia test, mass spectrometry, microtox, biotests, microscopy, atomic adsorption, C-cintigraphy (radiology), bacteriology, virology, parasitology, air pump, noise measuring device, etc.

**Meetings:**

4th International Symposium: "Contamination of the Environment by Viruses and Methods of Control". (September 3-4, 1993, Vienna).

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**International Friends of Nature (IFN)**

Diefenbachgasse 36  
Vienna A-1150  
Austria

Contact: Mr. Manfred Pils, General Secretary

Telephone: 892 38 77

Telefax: 812 97 89

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Coordination  
Education

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**Keywords:**

15145 NATURE CONSERVATION

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Country	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Japan (12)	3	9	1	3	10	6	0	1	5	3	1	3	2	1	0	4	2	3	2	2
Kenya (3)	1	1	0	1	0	1	1	1	0	1	0	2	3	3	2	1	1	2	2	1
Luxembourg (2)	1	1	0	1	0	2	0	0	0	0	0	0	1	1	0	1	0	1	1	0
Malaysia (1)	0	0	0	1	1	1	0	1	1	0	0	1	1	1	0	1	0	1	1	1
Mali (1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
Mauritius (1)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexico (1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Netherlands (10)	1	6	1	2	3	7	0	2	5	5	0	2	1	1	0	1	0	2	0	0
Norway (11)	1	6	0	3	6	4	2	2	2	3	1	6	5	4	1	4	1	5	3	0
Oman (2)	0	0	0	1	1	2	0	1	1	0	1	0	0	0	0	0	1	0	0	0
Peru (2)	1	1	0	1	1	1	0	1	0	1	0	2	1	1	1	2	1	2	2	2
Philippines (6)	3	4	3	4	3	6	0	3	4	2	0	4	4	3	1	3	3	4	2	2
Poland (2)	0	2	1	0	2	2	0	0	2	1	0	2	0	0	0	2	1	0	0	0
Portugal (6)	1	2	0	1	4	2	0	1	3	1	2	2	1	1	0	1	0	1	1	0
Senegal (1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spain (5)	1	1	1	3	1	3	1	0	1	1	0	1	1	0	1	2	3	1	0	0
Sri Lanka (2)	0	1	2	0	1	2	0	0	1	1	0	1	1	1	0	0	0	0	1	1
Sudan (1)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sweden (3)	1	3	0	1	2	3	0	1	3	3	1	1	1	1	0	1	0	1	1	0
Switzerland (14)	1	4	1	3	3	7	0	2	3	4	0	5	3	3	5	3	1	4	9	6
Syria (1)	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Thailand (4)	1	1	1	2	1	2	0	1	1	2	0	1	0	0	1	1	1	1	2	1
UK (27)	7	13	6	7	13	12	2	3	6	7	3	12	6	1	7	5	7	8	11	6
USA (22)	1	5	3	4	6	8	2	5	7	10	4	6	3	5	2	5	2	4	4	3
Uruguay (2)	0	1	1	0	1	1	0	0	1	1	0	1	0	0	0	0	1	0	1	1
Uzbekistan (1)	0	1	0	0	0	1	0	0	1	1	0	1	1	0	1	0	0	0	0	0
West Samoa (1)	1	1	0	1	1	1	0	1	1	0	0	1	1	1	1	1	0	1	1	1
<b>Total (266)</b>	<b>55</b>	<b>24</b>	<b>46</b>	<b>66</b>	<b>04</b>	<b>36</b>	<b>17</b>	<b>52</b>	<b>88</b>	<b>95</b>	<b>18</b>	<b>03</b>	<b>69</b>	<b>66</b>	<b>39</b>	<b>69</b>	<b>41</b>	<b>79</b>	<b>84</b>	<b>45</b>

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**International Institute for Applied Systems Analysis (IIASA)**

**Laxenburg A-2361  
Austria**

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**Telefax:** +43 2236 71 313

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Research  
Data/Information management  
Policy development

**Sectors:**

Outdoor air, Indoor air, Fresh water, Soil, Cross media

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**Keywords:**

10140 CARBON DIOXIDE  
10454 GREENHOUSE EFFECT  
25245 LONG-TERM TRENDS AND FORECASTING  
25342 MODELLING AND SIMULATION  
28121 CARTOGRAPHY

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**Activities Related to Measurements and Monitoring:**

Observation of climate changes; Identification of pollution sources; effective set of the measures definition, which could be applied to the various sources of emission; industrial metabolism and river basins.

**Scope of the Measurements/Activities:**

Research focuses on:

- Impact of climate change on some of the large river basins of the world and on surface water quality.
- Long term trends in pollution in the Rhine basin for 6 major chemical pollutants.

- Calculations of long range atmospheric transport of pollutants, based on EMEP data.
- 

**Instrumentation:**

A set of hydrological models.

A 2-Dimensional energy balance model that will carry out computations of solar and long wave radiation fluxes as well as eddy, mean meridional and convective and energy transports.

**Databases:**

A database of long term historical observations for a number of large watersheds to transform chemical pollution deposition data in to a map of potential "Chemical Time Bombs" in the Rhine Basin and the effects of climate change on European forests.

**Programme Participation:**

IPCC

**Publications:**

Books, Research Reports, Working Papers, Annual Report and the quarterly journal "Options".

**Meetings:**

Some 30-40 international conferences, Workshops and Seminars, both at IIASA and abroad.

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**Personnel:** 200 (60-70 multi-disciplinary research staff)

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**International Union of Forestry Research Organizations  
(IUFRO)**

**Seckendorff-Gudent-Weg 8  
Vienna A-1131  
Austria**

**Contact: Mr. Heinrich Schmutzenhofer, Secretary**

**Telephone: +43 1 87 70 151      E-Mail: x0221daa@awiuni11.bitnet  
Telefax: +43 1 87 79 355      Telex:75312646 iusc a**

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Research  
Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Fresh water, Snow/Ice, Lithosphere, Soil,  
Biosphere, Flora, Fauna, Cross media, Ecosystem, Environment and  
development,  
Environment and social conditions

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**Keywords:**

10300 AIR POLLUTION  
10418 CLIMATIC CHANGE  
12156 SOIL CONSERVATION  
12300 TROPICAL FOREST AND WOODLAND ECOSYSTEMS  
12321 DEFORESTATION  
12335 FOREST FIRES  
12788 WILDLIFE HABITATS  
15114 FOREST MANAGEMENT  
17280 FOREST PRODUCTS  
20108 BIOMASS ENERGY  
26136 FORESTRY LEGISLATION  
28105 AGROFORESTRY

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**Activities Related to Measurements and Monitoring:**

Regular international meetings, issuing guidelines for measurement techniques and publishing treatises are undertaken, both in project groups and in task forces.

Special Programme for Developing Countries.

Task Force on Forest, Climate Change and Air Pollution.

**Scope of the Measurements/Activities:**

Pollutant control monitoring.

**QA/QC Activities:**

IUFRO receive data from IUFRO member organizations.

**Reference materials:**

User; Producer; Supplier

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**Databases:**

Centrally located IUFRO databases. No databases are held at the Secretariat.

**Programme Participation:**

IGBP

**Publications:**

IUFRO Annual Report

Leaflets on the work of IUFRO

Quarterly IUFRO News (newsletter)

Papers from symposia and seminars

**Meetings:**

Every five years IUFRO organizes a World Congress, attended by as many as 2000 participants. The Congresses include scientific and technical sessions, posters and field excursions.

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**Catholic University of Louvain (UCL)  
Centre for Medical Informatics (CIM)**

**Av. Hippocrate 10  
Brussels B-1200  
Belgium**

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Regional

Europe

**Activities:**

Research

Data/Information management

Other: medicine, hospital care

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**Keywords:**

15100 RESOURCES MANAGEMENT

23000 HUMAN HEALTH

23224 HUMAN DISEASES

26200 INTERNATIONAL ENVIRONMENTAL RELATIONS

26232 INTERNATIONAL STANDARDISATION

27110 DATA PROCESSING

28129 EPIDEMIOLOGY

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**Activities Related to Measurements and Monitoring:**

Quality control of health care

Frequency of diseases (epidemiology)

Resources utilization

Hospital financing

Clinical research

**Scope of the Measurements/Activities:**

Project leader for HOSCOM (Hospital Comparisons of medical and financial data by patient) in Europe.

Research and development project supported by AIM (Advanced Informatics in Medicine) ( DG XIII f, of the Commission of the European Communities)

The aim of the project is to obtain a minimum of basic data set (MBDS) for medical (diagnoses and procedures) and financial data (use of resources, cost weights) by patient stay in all European hospitals, based on the concept issued by the CIM-UCL in 1981, recommended by the CEC in 1982 and now applied in 11 out of 12 CEC countries.

The project tries to harmonize by consensus conferences as well as by direct comparisons of available data in a Euro-databank.

**QA/QC Activities:**

Coordination of quality assurance activities in Belgium for the WHO European Office.

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**Instrumentation:**

Computerized medical record summaries (standardized by item and coding)

**Databases:**

Medical record summaries and financial record summaries from voluntary hospitals in Belgium.

**Publications:**

Editorial, "The European Challenge in Health Information Systems", Le departement des sciences hospitalieres et medico-sociales de l'Universite Catholique de Louvain

**Meetings:**

HOSCOM (final report)

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**Commission of the European Communities (CEC)  
Measurements and Testing Programme (M&T - DG XII)**

Rue de la Loi 200  
Brussels B-1049  
Belgium

Contact: Dr. Quevauviller

Telephone: + 32 2 296 33 51

Telefax: + 32 2 295 80 72

Telex: 21877 COMEU B

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional

Europe

**Activities:**

Coordination

**Sectors:**

Food, Environment and development, Human

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**Keywords:**

25265 QUALITY CONTROL

25324 CALIBRATION OF MEASURING EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

Intercomparisons

Certification of reference materials

Quality assessment and quality control activities

**Scope of the Measurements/Activities:**

Improvement of the quality of measurement by organization of intercomparisons and reference material certification

**Reference materials:**

Producer; Certifier

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**Instrumentation:**

Support to development of new instrumentation.

**Programme Participation:**

QUASIMEME Sea quality monitoring programme

**Meetings:**

The BCR acted as co-sponsor of major international conferences within the second Framework Programme:

- 12th International Conference on Micro-Chemical Techniques
- BERM 5 Symposium

Workshops were also organized to discuss the state of the art e.g. the determination of chemical species in the environment (Aachen, Germany, 1992).

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**Environmental Programme for the Danube River Basin  
Programme Coordination Unit (PCU)**

200 Rue de la Loi  
Brussels 1049  
Belgium

Contact: Mr. David W. Rodda, Team Leader

Telephone: +32 2 296 9069

Telefax: +32 2 296 8825

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**Type of Organization:**

Inter-governmental Organization

**Activities:**

Coordination

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**Keywords:**

13378 WATER POLLUTION  
22364 POLLUTION CONTROL TECHNOLOGY  
25100 POLLUTANT MONITORING  
25180 POLLUTION MONITORING

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**Scope of the Measurements/Activities:**

Prevention, control or reduction of pollution (point and non-point source).  
Implementation and operation of an early warning system for the Danube catchment.  
Verification of models (Possible future requirements).  
Trend analysis to enable the effects of pollution prevention measures to be gauged.

**QA/QC Activities:**

The PCU is only a promoter or facilitator of QA among the relevant countries. It may therefore coordinate interlaboratory exercises, conduct intercalibration exercises and carry out training for laboratory analysis using experts or consultants for the various tasks.

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**Instrumentation:**

Instrumentation is currently being decided upon.

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**European Chemical Industry Ecology and Toxicology Centre  
(ECETOC)**

Avenue Louise 250  
Brussels B-1050  
Belgium

Contact: Dr. D.A. Stringer

Telephone: +02 649 94 80

Telefax: +02 649 27 24

Telex: APME B 61523

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Europe

**Activities:**

Research  
Assessment  
Data/Information management

**Sectors:**

Marine water, Fresh water, Sediment, Soil

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**Keywords:**

18112 CHEMICAL INDUSTRY  
22184 TOXIC SUBSTANCES  
25378 TOXICOLOGICAL TESTING  
28174 TOXICOLOGY

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**Activities Related to Measurements and Monitoring:**

ECETOC operates by means of task forces. Task force members are nominated by sponsoring companies and are drawn from company staff or academic consultants. Task force topics and terms of reference are selected by a Scientific Committee.

Topics selected can cover any point concerning the practices of the chemical

industry and their interaction with any environmental parameter.

Task forces review existing knowledge and compile critical reviews. These reviews may simply be an assessment of current knowledge, compilation of data, or development of new experimental techniques in members laboratories followed by ring testing.

**Scope of the Measurements/Activities:**

Maintenance of occupational health standards.

Pollutant control monitoring.

Identification of pollutant sources.

Verification of models.

**Reference materials:**

User

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**Global Legislators Organisation for a Balanced Environment  
(GLOBE)**

Rue du Taciturne 50  
Brussels B-1040  
Belgium

Contact: Mrs. Lena Lidahl, Assistant to the President

Telephone: + 32 2 230 6589  
Telefax: + 32 2 230 9530

E-Mail: tcn1296/tcn1297

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Policy development

**Sectors:**

Environment and development

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**Keywords:**

15170 RESOURCE CONSERVATION

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**Activities Related to Measurements and Monitoring:**

GLOBE members meet regularly on a national and regional level and twice a year on an international level to exchange information.

GLOBE supports groups working for global conservation. Groups jointly propose similar legislation in their countries and regions. At any moment GLOBE secretariats in Brussels, Tokyo, Washington DC and Moscow can send important legislation by electronic mail to any member who asks for it.

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**Meetings:**

Regular meetings on national and international levels, regarding global conservation.

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**Union of International Associations (UIA)**

**Rue Washington 40  
Brussels B-1050  
Belgium**

**Contact:** Mr. Anthony Judge, Assistant Secretary General

**Telephone:** + 32 2 640 18 08

**Telefax:** + 32 2 646 05 25

**Telex:** 65080 inac b

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Data/Information management

**Sectors:**

Atmosphere, Hydrosphere, Lithosphere, Biosphere, Food, Ecosystem,  
Environment and development, Environment and social conditions

Other: All sectors of monitoring are covered, however UIA would only claim  
technical expertise in the Cross Media section

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**Keywords:**

15244 ENVIRONMENTAL POLICY

25000 MONITORING AND ENVIRONMENTAL DATA

25225 ENVIRONMENTAL STATISTICS

27130 ENVIRONMENTAL EDUCATION

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**Activities Related to Measurements and Monitoring:**

Documentation of environmental problems as seen by the international  
community.

Analysis of UN-agency and other international organization materials.

Compilation and cross referencing of issues in a relational database printed  
occasionally as the "Encyclopedia of World Problems and Human Potential",  
Saur Verlag (last printed 1991 as 3rd. edition; 4th. edition in preparation for  
publication in 1994)

Non-systematic compilation of sources. Compilation has been cumulative  
since the commencement of the project in 1972. It has included library

research, bibliographic searches, appeals for problem documentation from the international organizations listed in the yearbook, books and articles encountered by various means and random acquisitions of material through other means.

A great strength of UIA's data lies in the inter-relationships recorded between environmental and other problems, including networks and nests of issues. A further noteworthy attribute is the relatively long time period of the project.

**Scope of the Measurements/Activities:**

Identification of inter-relationships between problems or issues of concern to the world community.

Documentation of the main aspects of such problems: their description, incidence, history, contradictory perspectives on them and inter-relationships.

Publication of the material for wider access.

Use of the material in relevant fora such as conferences and for further analysis, e.g. Use of the problem database in cross relating items listed for priority action by international organizations preparing for the Earth Summit.

**QA/QC Activities:**

QC procedures are embedded in the computer programmes which manage UIA's data. These ensure standard format of presentation of problem descriptions and largely error-free cross referencing. Also, UIA's search procedures have highly accurate indexing, language and sorting features.

Other QC features are repeated reading and checking of information, both by editorial and research personnel and by the users of the Encyclopedia.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Computers linked by database and text management software.

**Databases:**

Environmental data are a subset of data on problems in all fields of human activity, recognized by 13 000 international organizations in a parallel database. Both are on a local area network (Novell 3.11; DOS 3.31).

**Publications:**

Yearbook of International Organizations.

International Congress Calendar.

Encyclopedia of World Problems and Human Potential.

Transnational Associations journal.

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**Personnel: 15**

**Budget: 750 000 US\$**

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**Union of the Water Supply Associations from Countries of the European Communities (EUREAU)**

Ch. de Waterloo setwg 255 - B/6  
Brussels B-1060  
Belgium

Contact: Mr. F. Rillaerts, Secretary General

Telephone: + 32 2 537 43 02 / 56

Telefax: + 32 2 539 21 42

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Europe

**Activities:**

Coordination  
Policy development

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**Keywords:**

13450 RURAL WATER SUPPLY  
16390 URBAN WATER SUPPLY  
25172 POLLUTANT SOURCE IDENTIFICATION  
25180 POLLUTION MONITORING  
25270 WATER QUALITY

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**Activities Related to Measurements and Monitoring:**

Pollutant control monitoring  
Early warning and vigilance systems  
Identification of pollution sources

**Scope of the Measurements/Activities:**

Principal aims of the union are to assess and monitor the present and future problems of water supply within the community and to agree common views on the most effective way in which these problems should be countered. EUREAU also presents the common interests of its members to the European Communities and to other community organizations.

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**Department of Water Affairs (DWA)**

**GABORONE  
BOTSWANA**

Contact: Director

Telephone: + 267 352241

Telefax: + 267 374372

Telex: 2557 bd

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Botswana

**Activities:**

Policy development  
Management and Enforcement  
Monitoring  
Assessment

**Sectors:**

Fresh water, Sediment, Flora, Environment and development

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**Keywords:**

13378 WATER POLLUTION  
13420 DRINKING WATER  
13480 WATER TREATMENT  
15107 ENVIRONMENTAL MANAGEMENT  
22456 SEWAGE TREATMENT SYSTEMS  
23000 HUMAN HEALTH  
23156 POLLUTANT EFFECTS  
25180 POLLUTION MONITORING  
25220 ENVIRONMENTAL MONITORING  
25270 WATER QUALITY  
26116 ENVIRONMENTAL LAW  
26160 POLLUTION CONTROL REGULATIONS  
29317 ENGLISH  
30020 DEVELOPING COUNTRIES  
30100 AFRICA  
30104 SOUTHERN AFRICA  
30109 BOTSWANA

**Activities Related to Measurements and Monitoring:**

Implementation of the Aquatic Weed Control regulations through restriction of movement of boats and other aquatic equipment.

Occasional EIA (Environmentally Integrated Assessment) studies accompanying water development projects.

Southern African Regional Commission for the conservation and utilization of the soil, which is conducted annually.

**Scope of the Measurements/Activities:**

Pollutant control monitoring.

Identification of pollution sources.

Protection of water resources by demarcating areas.

**Reference materials:**

User

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**Instrumentation:**

Laboratory implements for analysis of water and effluent samples.

**Databases:**

Water quality data from various boreholes and streams etc. (stored as raw data)

**Programme Participation:**

Joint Permanent Water Committee between Botswana and Namibia on the Okovango, once or twice a year.

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**Personnel:** 350

**Budget:** 50 MIL. Botswana Pula

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**Forestry Association of Botswana (FAB)**

**GABORONE  
BOTSWANA**

**Contact:** Mrs. Keitirele Patricia Walker, Director

**Telephone:** + 267 351660

**Telefax:** + 267 300316

**Telex:**2942 rip bd

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National

**Activities:**

Education  
Research

**Sectors:**

Flora, Ecosystem, Environment and development, Environment and social conditions

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**Keywords:**

12307 AFFORESTATION & REAFFORESTATION  
12321 DEFORESTATION  
12363 REVEGETATION  
12724 BOTANICAL GARDENS  
17280 FOREST PRODUCTS  
25220 ENVIRONMENTAL MONITORING  
27130 ENVIRONMENTAL EDUCATION  
27140 ENVIRONMENTAL TRAINING  
27170 PUBLIC INFORMATION  
28105 AGROFORESTRY  
28133 FORESTRY  
29317 ENGLISH  
30104 SOUTHERN AFRICA  
30109 BOTSWANA

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**Activities Related to Measurements and Monitoring:**

Forestry Technology Transfer Report to facilitate public participation in tree planting, amongst individuals and households.

Tree seed collection and documentation.

Decentralisation of the tree seed nursery through the community secondary schools to facilitate access to tree seedlings in the rural community.

Political lobby for environmentally sound policy development.

Species eliminated trial research and publication.

**Scope of the Measurements/Activities:**

To increase awareness of the importance of tree planting and the conservation of natural woodlands and rangelands.

To promote forestry in research, extension and social forestry programmes, and also cooperate with organisations which are working in the same field.

To cooperate with government departments in planning and implementation of forestry proposals.

**Reference materials:**

User; Producer; Marketing; Supplier

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**Atlantic Salmon Federation (ASF)**

St. Andrews, New Brunswick E0G 2X0  
CANADA

Contact: Dr. John M. Anderson, Vice President, Operations

Telephone: +1 506 529 4581

Telefax: +1 506 529 4438

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
North American Salmon Range

**Activities:**

Education  
Research

**Sectors:**

Marine water, Fresh water, Ecosystem  
Other: Atlantic Salmon research and monitoring

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**Keywords:**

14360 FISH  
17151 FISH CULTURE  
17154 FISHERIES MANAGEMENT  
28108 ANIMAL GENETICS  
28135 GENETIC ENGINEERING

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**Activities Related to Measurements and Monitoring:**

The Atlantic Salmon Federation (ASF) is an international non-profit making organization which promotes the conservation and wise management of the Atlantic salmon and its environment.

The Salmon Genetics Research Programme (SGRP) is the application of genetics to better management of wild and aquaculture salmon stocks.

**Scope of the Measurements/Activities:**

Observation of climate change, in particular the water temperature of both marine and freshwater.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Temperature data from ship-borne recorders and from remote sensing satellites.

**Databases:**

Depends largely upon governmental agencies for environmental data.

**Programme Participation:**

Involved in promoting international scientific cooperation in research aimed at understanding the marine phase of the Atlantic salmon's lifecycle.

**Publications:**

Three, quarterly publications:  
-The Atlantic Salmon Journal  
-On the Rise  
-Salar

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**Personnel: 50**

**Budget: 4.5 MIL US\$**

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**Bedford Institute of Oceanography (BIO)  
Marine Chemistry Division (MCD)**

Dartmouth NS B2Y 4A2  
Canada

Contact: Mr. J.M. Bowers, Head of Marine chemistry division.

Telephone: +1 902 426 2371

E-Mail: bedford.inst

Telefax: +1 902 426 6695

Telex: 019 31552

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Canada

**Activities:**

Research

**Sectors:**

Marine water, Fresh water, Sediment, Fauna, Food, Ecosystem

Other: Monitoring and research in food sector particularly of fish

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**Keywords:**

14142 MARINE POLLUTION

15264 POLICY PLANNING

22124 HEAVY METALS

22190 TRACE ELEMENTS

22424 RADIOACTIVE WASTE MANAGEMENT

22472 WASTE DISPOSAL

25180 POLLUTION MONITORING

25220 ENVIRONMENTAL MONITORING

27110 DATA PROCESSING

28163 OCEANOGRAPHY

29317 ENGLISH

29323 FRENCH

30201 NORTH AMERICA

30400 EUROPE

30604 NORTH ATLANTIC OCEAN

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**Activities Related to Measurements and Monitoring:**

Assist National Research Council of Canada in the development of marine reference materials for analytical quality assurance purposes.  
Provide advice on sampling, analytical and sample storage techniques for the analysis of marine media.  
Research and monitoring marine and environmental chemistry, biological effects of contaminants and contaminants in fisheries.  
Assessment of conditions in regional marine areas of relevance to Canada.

**Scope of the Measurements/Activities:**

Marine biogeochemical research  
Climate-related oceanography  
Monitoring of contaminants in fish.  
Surveillance of chemical contaminants in Canadian marine waters (biota, sediment, water).  
Monitoring of nuclear power station discharges in to the marine environment.  
Application of tracers in oceanography and climate research.

**QA/QC Activities:**

Involved in the Canadian Marine Analytical Chemistry Standards Programme (MACSP), which develops and issues reference materials and standards for marine scientific applications.  
Participation in interlaboratory comparisons through ICES, EPA and IOC/UNESCO.  
Conducting internal QA/QC procedures.

**Reference materials:**

User; Certifier

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**Instrumentation:**

Atomic absorption spectroscopy  
Gamma spectrometry  
Alpha spectrometry  
Beta spectrometry  
Gas chromatography  
Gas chromatography-Mass spectrometry  
Isotope ratio mass spectrometry  
Polarography  
Liquid chromatography  
High performance liquid chromatography  
Inductively-coupled plasma mass spectrometry  
Fluorescence spectroscopy

**Databases:**

Oceanographic cruise database including physical and chemical measurements made on cruises.  
Contaminant database for levels of chemical contaminants in fish, sediments and water (currently under development).

**Programme Participation:**

IOC/GIPME Global Investigation of Pollution in the Marine Environment. ICES marine environmental quality activities. Development of Global Ocean Observing System, particularly the Health of the Ocean Module. IAEA activities of the Division of Nuclear Fuel Cycle and Waste Management. IMO London Convention 1972 (particularly radwaste issues). OECD/NEA Coordinated Research and Environmental Surveillance Programme (CRESP)

**Publications:**

Manuals on marine analytical techniques, e.g. for the composition of marine sediments, Elsevier Publishing Co.

**Meetings:**

Canadian Committee on Marine Analytical Chemistry (which oversees the MACSP programme), Halifax, November 15-16 1993.  
XVI London Convention Consultative Meeting, November 8-12, 1993.  
GESAMP Session, Jamaica, March 21-25 1994.

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**Personnel: 38**

**Budget: 4 MIL US\$**

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**Health and Welfare Canada  
Bureau of Chemical Safety  
Food Research Division, Food Directorate**

Tunney's Pasture  
Ottawa Ontario K1A 0L2  
Canada

Contact: Mr. Jos Mes

Telephone: +1 613 957 0978

Telefax: +1 613 957 1907

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Canada

**Activities:**

Assessment  
Monitoring  
Policy development  
Research

**Sectors:**

Biosphere, Food, Human

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**Keywords:**

17178 PESTICIDE CONTROL STANDARDS  
23000 HUMAN HEALTH  
23132 HUMAN EXPOSURE TO POLLUTANTS  
23418 FOOD  
23430 FOOD CONTAMINATION

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**Activities Related to Measurements and Monitoring:**

Establishment of guidelines for pesticides and environmental contaminants  
and carrying out relevant research and monitoring

**Scope of the Measurements/Activities:**

- To determine human body burden
- To initiate toxicity studies
- To establish guidelines

**Instrumentation:**

GC, GC/MS, GPC, Robot

**Meetings:**

Symposium on PCB toxicity in monkeys, September 1991

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**Northwest Atlantic Fisheries Organization (NAFO)**

Dartmouth Nova Scotia B2Y 3Y9  
CANADA

Contact: Mr. Tissa Amaratunga, Assistant Executive Secretary

Telephone: +1 902 469 9105

Telefax: +1 902 469 5729

Telex: 019 31475

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional

Northwest Atlantic

**Activities:**

Policy development

Management and Enforcement

Assessment

Data/Information management

**Sectors:**

Atmosphere, Hydrosphere, Marine water, Snow/Ice, Fauna, Ecosystem

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**Keywords:**

10100 ATMOSPHERIC COMPOSITION

14178 OCEAN TEMPERATURE

14360 FISH

25210 ATMOSPHERIC MONITORING

28163 OCEANOGRAPHY

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**Activities Related to Measurements and Monitoring:**

Annual Scientific Council Meeting with a Sub-committee of Environmental Science.

Have established standard oceanographic section.

Contracting party research programmes in ocean, ice and atmosphere in the region.

Central data reporting from Contracting Party institutes to the Scientific Council.



**Scope of the Measurements/Activities:**

Observation of environmental conditions in relation to fishery science and management.

**QA/QC Activities:**

QA by peer review among Contracting Party scientists.  
QC by Contracting Party inter-institute exchange and review.

**Reference materials:**

User; Producer

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**Instrumentation:**

Standard institutional oceanographic instruments including those developed and in current use in North America, Europe, Japan and Russia.

**Databases:**

Marine environmental Data Service (MEDS) of Canada and Integrated Global Ocean Service System (IGOSS) report more than 5000 oceanographic stations.

Drift buoy track data, averaging about 100 per hour.

Current meter and thermistor chain data in 1992 include 21 sites, 68 instruments and about 4500 mooring days.

In 1992, about 90 000 ocean wave spectra.

Many ocean cruise surveys.

In general, the database provides monthly, annual, decal and long term views.

**Programme Participation:**

The Northwest Atlantic Fisheries Organization consists of Bulgaria, Canada, Cuba, Denmark (for Faroe Isles and Greenland), EEC Member countries, Iceland, Japan, Norway, Poland, Romania, Russia, Korea, Latvia and Lithuania.

**Publications:**

Meetings and Decisions, 1979-1992.

Journal of Northwest Atlantic Fishery Science.

NAFO Annual Report; Scientific Council Studies and Reports;.Statistical Bulletin; List of Fishing Vessels; Index of Meeting Documents.

Inventory of Sampling Data.

**Meetings:**

Annual Scientific Council Meetings in June and September and a Scientific Symposium in September.

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**Personnel: 12**

**Budget: 750 000 US\$**

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**Western Canada Wilderness Committee (WCWC)**

20 Water Street  
Vancouver BC V6B 1A4  
Canada

Contact: Mr. Ian Parfitt, Director of Research and Mapping

Telephone: +1 604 683 8220

E-Mail: APC:Web:wc2wild

Telefax: +1 604 683 8229

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Canada

**Activities:**

Coordination  
Education  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Hydrosphere, Marine water, Fresh water, Biosphere, Flora, Fauna, Human,  
Ecosystem, Environment and development  
Other: Environment and social justice, Indigenous rights, Indigenous technical  
knowledge

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**Keywords:**

12328 FOREST CONSERVATION  
12370 TEMPERATE FORESTS & WOODLANDS  
12480 TEMPERATE ECOSYSTEMS  
12728 ECOLOGICAL BALANCE  
16430 HUMAN RIGHTS  
16500 ENVIRONMENTAL ASPECTS OF HUMAN SETTLEMENTS  
28133 FORESTRY

**Activities Related to Measurements and Monitoring:**

WCWC have built and now maintain research stations in primary temperate rain forest in BC. These stations include upper canopy platforms. New communities of species and more importantly, nesting habitats for threatened species have been discovered by scientists working at WCWC's stations. WCWC publish maps, reports and papers on a regular basis and popularize results through calendars, posters, books and freely distributed newspapers.

**Scope of the Measurements/Activities:**

Monitoring of:

- Remaining natural ecosystems (especially primary forest)
- Species that require temperate rain forest habitat
- Temperate rain forest ecology
- Threats to natural areas

**QA/QC Activities:**

Wide review by supporters, peer groups and the public.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Research stations with upper canopy platforms over 50 metres high in the temperate rain forest.  
Core sampling instruments to measure tree age.  
Insect traps for insect sampling.

**Programme Participation:**

Global Change Programme: Critical Zones.

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**Western Canada Wilderness Committee (WCWC)  
Wilderness is the Last Dream (WILD)**

20 Water Street  
Vancouver B.C. V6B 1A4  
Canada

Contact: Mr. Ian Parfitt, Director of Research and Mapping

Telephone: +1 604 669 9453/ 683 8220  
Telefax: +1 604 669 9455/ 683 8229

E-Mail: APC:Web:wc2wild

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Education  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Hydrosphere, Marine water, Fresh water, Biosphere, Flora, Fauna, Human,  
Cross media, Ecosystem, Environment and development, Environment and  
social conditions  
Other: Monitoring of natural areas and sustainable communities. Social  
justice and indigenous technical knowledge. Indigenous rights

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**Keywords:**

12328 FOREST CONSERVATION  
12700 BIOLOGICAL DIVERSITY AND PROTECTED AREAS  
12786 WILDLIFE CONSERVATION  
15145 NATURE CONSERVATION  
16430 HUMAN RIGHTS  
16500 ENVIRONMENTAL ASPECTS OF HUMAN SETTLEMENTS  
25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

International mapping conferences held in 1990 (Hawaii) and 1991 (Brazil):

- These conferences issued guidelines regarding mapping of natural ecosystems and sustainable communities in 1992. They were published with the conference proceedings.
- Producing standardized maps for ten Latin-American nations at present. These will be published.

**Scope of the Measurements/Activities:**

Mapping of:

- Remaining natural ecosystems
- Biogeography
- Protected Area Systems
- Threats to natural areas
- Traditional communities (especially indigenous peoples)

**QA/QC Activities:**

QA is based on a wide review of all published materials by reporters, partner groups and peers.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Maps  
Geographical Information Systems (GIS)

**Programme Participation:**

International Union for Conservation of Nature (IUCN), Global Change: Critical Zones.

**Meetings:**

Annual Conferences

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**Chilean Nuclear Energy Commission**

**Amunategui 95  
Santiago  
CHILE**

**Contact:** Dr. German Piderit Alvear, Executive Director

**Telephone:** +56 2 6990 070

**Telefax:** +56 2 6991 618

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Chile

**Activities:**

Coordination

Monitoring

Policy development

Research

**Sectors:**

Outdoor air, Marine water, Sediment, Soil, Biosphere

Other: Seafood as biomonitors

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**Keywords:**

10300 AIR POLLUTION

13378 WATER POLLUTION

14142 MARINE POLLUTION

15232 ENVIRONMENTAL IMPACT

16278 NUCLEAR RESEARCH AND POWER CENTRES

18106 APPROPRIATE TECHNOLOGY

21348 IONIZING RADIATION

21384 RADIOACTIVITY

22170 RADIOACTIVE SUBSTANCES

22182 THERMAL POLLUTION

23124 ENVIRONMENTAL HEALTH HAZARDS

23430 FOOD CONTAMINATION

24155 RADIOACTIVE CONTAMINATION

25156 POLLUTANT LEVELS

25188 RADIATION MONITORING

25220 ENVIRONMENTAL MONITORING  
25324 CALIBRATION OF MEASURING EQUIPMENT  
26116 ENVIRONMENTAL LAW  
26172 REGULATORY CONTROL  
26264 TECHNOLOGY TRANSFER  
29367 SPANISH  
30216 CHILE

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**Activities Related to Measurements and Monitoring:**

The Activation Analysis Laboratory is developing environmental studies using biological monitors as pollution detectors. For this purpose it has developed radiochemical separation methods to improve the detection limits. The laboratory also participates in four Coordinated Research Programmes of the IAEA in the field of Environmental Studies and in projects of the Chilean National Foundation of Science.

**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Observation of climate change  
Control of reference materials in intercomparison runs  
Identification of pollution sources

**Reference materials:**

User

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**Instrumentation:**

Neutron activation analysis (Instrumental and Radiochemical)  
X-Ray fluorescence  
Atomic absorption  
Electrochemical techniques  
Chromatography techniques

**Programme Participation:**

IAEA research programmes.,

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**Permanent South Pacific Commission (CPPS)**

Teatinos 20, Oficina 93  
Santiago 9  
CHILE

Contact: Mr. Hugo Llanos, Secretary General

Telephone: +56 2 6726652

Telefax: +56 2 6951100

Telex: 240982 cpps v cl

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional

South East Pacific

**Activities:**

Management and Enforcement

Coordination

**Sectors:**

Outdoor air, Hydrosphere, Marine water, Biosphere, Fauna, Environment and development, Environment and social conditions

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**Scope of the Measurements/Activities:**

Pollution control.

Climate change monitoring.

EIA's.

Protection of living sea resources.

Climatic variability monitoring.

**Reference materials:**

User; Producer

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**Instrumentation:**

Workshops; Seminars; Consultancies.

**Programme Participation:**

International Mussel Watch.

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**University of Chile  
Faculty of Chemical and Pharmaceutical Sciences  
Laboratory of Nuclear and Radiochemistry**

**Santiago  
CHILE**

**Contact:** Prof. Dr. M. Margarita Prendez

**Telephone:** +56 2 777 00 35/ +56 2 777 01 17

**Telefax:** +56 27 378 920

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Global

**Activities:**

Research  
Monitoring  
Assessment

**Sectors:**

Outdoor air, Indoor air

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**Keywords:**

10130 ATMOSPHERIC PARTICULATES  
25172 POLLUTANT SOURCE IDENTIFICATION  
28106 ANALYTICAL CHEMISTRY

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**Activities Related to Measurements and Monitoring:**

Particulate matter under 10 µm control monitoring  
Development and control of new analytical techniques  
Identification of pollution sources  
Verification of models

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**Instrumentation:**

Andersen Cascade Impactor.  
Atomic absorption spectrophotometry.  
Ionic Chromatography.

**Programme Participation:**

UNEP/WMO Ozone Depletion Assessments.

**Meetings:**

Congresso Meteo 92, 7-10 October, Spain.

2nd Conference on the Biogeochemistry of Trace Elements,

5-10 September, 1993, Taipei.

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**Ministry of Agriculture  
Institute of Environmental Protection and Monitoring**

31 FuKang Road, NanKai District  
Tian Jin 300191  
CHINA

Contact: Ms. Zhao ZiDing, Director

Telephone: +86 22 361247

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
National  
China

**Activities:**  
Policy development  
Monitoring

**Sectors:**  
Outdoor air, Fresh water, Soil, Biosphere, Food

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**Keywords:**  
10418 CLIMATIC CHANGE  
17000 AGRICULTURE  
17154 FISHERIES MANAGEMENT  
25172 POLLUTANT SOURCE IDENTIFICATION  
25180 POLLUTION MONITORING  
27140 ENVIRONMENTAL TRAINING  
28109 ANIMAL HUSBANDRY

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**Activities Related to Measurements and Monitoring:**  
Holding regular national meetings.  
Issuing guidelines and textbooks on measurement techniques and practice.  
Publishing agreements.  
Training operators and managers.

**Scope of the Measurements/Activities:**

- Pollutant control monitoring
  - Observation of climate change
  - Identification of pollution sources
  - Verification of models
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**Institute of High Energy Physics**

Beijing 100080  
China

Contact: Dr. Chai Chifang, Director of Nuclear Chemistry Department

Telephone: +861 256 3339

Telefax: +861 821 3374

Telex:22082 IHEPCN

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

National  
China

**Activities:**

Education  
Research  
Monitoring  
Assessment

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment, Soil, Cross media,  
Indoor air, Food  
Other: Ground water, Biological matrices

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**Keywords:**

10320 AIR POLLUTANTS  
13378 WATER POLLUTION  
22100 POLLUTANTS  
22190 TRACE ELEMENTS  
22192 TRACE MATERIALS AND RESIDUES  
25100 POLLUTANT MONITORING

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**Activities Related to Measurements and Monitoring:**

Use of NAA, PIXE, XRF and other techniques to study the background of trace elements in water, soil, atmospheric particles and biological samples.  
Survey of environmental quality in China.

**Scope of the Measurements/Activities:**

Pollution control monitoring.  
Identification of pollution sources.  
Development of reference materials.

**Reference materials:**

User; Producer; Supplier; Certifier

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**Instrumentation:**

Accelerators.  
Synchronous radiation device.  
Neutron activation analysis facilities.  
AAS, XRF and others.

**Meetings:**

Symposium on Environmental Science in China, Beijing, December 21-25  
1991.

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**Environmental Protection Research Institute of Shanghai  
Petrochemical Complex**

Jin-Yi Road, Jin-Shan-Wei  
Shanghai  
CHINA

Contact: Mr. Li-Tong Peng

Telephone: + 86 21 7931 215

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**Type of Organization:**

Industrial or Commercial  
National

**Geographical Scope:**

National  
China

**Activities:**

Research  
Monitoring

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Biosphere, Cross media  
Other: Industrial hygiene

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**Keywords:**

18154 PETROLEUM REFINING  
18160 PULP AND PAPER INDUSTRY  
22128 INDUSTRIAL EFFLUENTS  
25220 ENVIRONMENTAL MONITORING  
25265 QUALITY CONTROL  
25306 ANALYTICAL EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

The institute studies the application and development of environmental protection in the petrochemical field:  
Treatment and comprehensive utilization of "three wastes" in connection with petrochemical and chemical fibre industries;  
Research into analytical methods of environmental monitoring.  
- ecological survey

- monitoring of atmosphere, water quality, noise and industrial hygiene
- environmental assessment, etc.

**Scope of the Measurements/Activities:**

- Pollutant control monitoring for effluent (gas, water, etc.)
  - Survey of pollution sources for treatment engineering
  - Survey of pollution sources for environmental assessment
  - Research into analytical methods of environmental monitoring
- 

**Instrumentation:**

- Atomic absorption spectrophotometer
- Ultraviolet spectrophotometer
- Gas chromatograph
- Chromatograph - Mass spectrometer
- High performance Liquid Chromatograph
- Imported BOD analyzer
- TOC analyzer, etc.

**Meetings:**

- Appraisal conference on harmonization research projects for environmental measurement
  - Workshops on environmental measurement
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**Xinjiang Centre Station of Environmental Monitoring**

"Arid Environmental Monitoring" editorial office  
38 Beijing South Road  
Urumqi, Xinjiang  
CHINA

Contact: Mr. Zhongye Liu, Chief Editor

Telephone: + 86 991 338972

Telex: 79142 XJSC CN

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
China

**Activities:**

Assessment  
Monitoring

**Sectors:**

Outdoor air, Indoor air, Fresh water, Sediment, Soil, Biosphere, Cross media,  
Food

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**Keywords:**

10436 DROUGHT  
12213 ARID ZONES  
12291 SEMI-ARID LAND ECOSYSTEMS  
15232 ENVIRONMENTAL IMPACT  
15240 ENVIRONMENTAL IMPACT ASSESSMENT  
25220 ENVIRONMENTAL MONITORING  
27110 DATA PROCESSING  
29313 CHINESE  
29317 ENGLISH  
30305 EASTERN ASIA

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**Activities Related to Measurements and Monitoring:**

Responsible for environmental survey, monitoring and assessment in the arid and semi-arid region of Xinjiang.

An "Arid desert ecological environmental monitoring station" was set up in 1990.

Activities of screening monitoring index and investigating vegetables and soils were started in Sawan county, Xinjiang autonomous region, by 1991.

**Scope of the Measurements/Activities:**

Pollutant control monitoring, early warning, identification of pollution sources

**Reference materials:**

User; Certifier

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**Instrumentation:**

Atomic absorption spectrometer, ion chromatograph, polarograph, gas chromatograph, infra-red analyzer, multi-element analyzer, ultraviolet spectrophotometer, multichannel analyzer, COD/BOD survey instrument, alpha/beta/gamma survey instruments, spectrophotometer, computer.

**Meetings:**

Regular area meetings

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**International Centre of Tropical Agriculture (CIAT)**

Apartado Aereo  
Cali  
COLOMBIA

Contact: Mr. Gustavo A. Nores, Director General

Telephone: + 57 23 675050

E-Mail: CGNET 157:CGI301

Telefax: + 57 23 647243

Telex:05769 ciat co

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Research  
Data/Information management

**Sectors:**

Food, Ecosystem, Environment and development, Environment and social conditions

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**Keywords:**

15107 ENVIRONMENTAL MANAGEMENT  
15212 ECODEVELOPMENT  
15216 ECONOMIC DEVELOPMENT  
15284 SUSTAINABLE DEVELOPMENT  
17106 AGRICULTURAL MANAGEMENT  
1715 AGRICULTURAL PRODUCTION  
28103 AGRICULTURAL ECONOMICS  
28118 BIOTECHNOLOGY

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**Activities Related to Measurements and Monitoring:**

CIAT is dedicated to the alleviation of hunger and poverty in developing countries of the tropics by applying science to agriculture in order to increase production whilst sustaining the natural resource base.

CIAT is one of the 18 international centres sponsored by the Consultative Group on International Agricultural Research (CGIAR).

**Reference materials:**

User; Producer; Supplier

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**Latin American Federation of Young Environmentalists  
(FLAJA)**

Carrera 21 No.38-56.  
Bogota  
COLOMBIA

Contact: Mr. L. Yolanda Diaz, General Co-ordinator

Telephone: +248 6072

Telex: +248 6072

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Latin America

**Activities:**

Education

**Sectors:**

Marine water, Fresh water, Human, Ecosystem, Environment and  
development

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**Keywords:**

25220 ENVIRONMENTAL MONITORING  
27000 ENVIRONMENTAL AWARENESS  
27130 ENVIRONMENTAL EDUCATION  
27140 ENVIRONMENTAL TRAINING

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**Activities Related to Measurements and Monitoring:**

FLAJA is composed of Latin American environmental youth groups, with the objective of concerning young people about the environment. Each group is free to choose the specific activity they wish to develop, such as education or information.

**Scope of the Measurements/Activities:**

Give solutions to environmental problems. Concern the youth about environmental issues. Encourage the emergence of young environmental leaders.

**Reference materials:**

User; Producer

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**Programme Participation:**

Seminars on environmental pollution, hydrographic bowls, rivers and the development of Agenda 21.

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**The Tropical Agronomic Centre for Research and Education  
(CATIE)**

Turrialba 7170  
Costa Rica

Contact: Dr. Rubeu Guevara, General Director

Telephone: +506 56 64 31

Telefax: +506 56 15 33

Telex: 8005 Catie CR

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional

Tropics

**Activities:**

Research

**Sectors:**

Ecosystem, Flora, Fauna

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**Keywords:**

12384 TROPICAL ECOSYSTEMS

12600 WETLANDS ECOSYSTEMS

15100 RESOURCES MANAGEMENT

15114 FOREST MANAGEMENT

15284 SUSTAINABLE DEVELOPMENT

17109 AGRICULTURAL METHODS

28109 ANIMAL HUSBANDRY

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**Activities Related to Measurements and Monitoring:**

CATIE was created by IICA, OAS and the Government of Costa Rica. It is principally concerned with developing and promoting technologies for sustainable development in the tropics. It is active in the fields of Natural Resource Management and Conservation, and Sustainable Production Systems in agriculture, forestry and animal husbandry.

**Scope of the Measurements/Activities:**

Development of techniques for economic evaluation of ecosystem functions.

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**Meetings:**

Workshop on ecology and economics (Jan. 1991)

Workshop on economic evaluation of wetlands (March 1991)

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**University of Costa Rica  
Research Centre for Environmental Pollution (UCR CICA)**

San Pedro Montes de Oca  
San Jose  
Costa Rica

Contact: Mr. Alexis Rodriguez U.

Telephone: +09 506 53 13 63

Telefax: +09 506 25 98 66

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Regional  
Latin America

**Activities:**

Assessment  
Monitoring

**Sectors:**

Outdoor air, Fresh water, Sediment, Soil, Biosphere

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**Keywords:**

10120 ATMOSPHERIC CHEMISTRY AND COMPOSITION  
22190 TRACE ELEMENTS  
25172 POLLUTANT SOURCE IDENTIFICATION  
25235 FRESHWATER MONITORING

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**Activities Related to Measurements and Monitoring:**

Establishment of an international network aiming at improving and harmonizing analytical methodologies in a Latin American context:  
The Latin America Environmental Analytical Chemistry Network

**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Identification of pollution sources  
Change of trace contaminants in the environment

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**Instrumentation:**

Gas Chromatography  
HPLC  
Liquid scintillation counter

**Meetings:**

First International Seminar on Environmental Chemistry of the Atmosphere,  
Mexico D.F., 1991

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**African Development Bank (ADB)  
Environment and Social Policy Division**

Abidjan 01  
Cote d'Ivoire

Contact: Mr. Lual Deng, Division Chief

Telephone: + 225 20 48 99

Telefax: + 225 20 49 07

Telex: 2371723498

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional  
Africa

**Activities:**

Policy development  
Management and Enforcement  
Research  
Assessment  
Data/Information management

**Sectors:**

Environment and development, Environment and social conditions

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**Keywords:**

15000 ENVIRONMENT AND DEVELOPMENT  
15216 ECONOMIC DEVELOPMENT  
15220 ECONOMIC PLANNING  
15224 ENVIRONMENTAL ACCOUNTING  
15236 ENVIRONMENTAL IMPACT ASSESSMENT  
16468 SOCIO-ECONOMIC FACTORS

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**Activities Related to Measurements and Monitoring:**

Issuing environmental guidelines and policy papers.  
Undertaking environmental impact assessments.  
Environmental screening and classification of projects in the bank's lending programme.  
Organizing workshops and international meetings within the fields of environment, health and social policy.

**Scope of the Measurements/Activities:**

Environmental screening.

**Reference materials:**

User

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**Meetings:**

Organization of international meetings within the fields of environment, health and social policy.

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**Commission of the European Communities (CEC)  
Joint Research Centre (JRC)  
Central Laboratory of Air Pollution (CLAP)**

Centro Comune di Ricerca TP050  
Ispra I-21020  
Italy

Contact: Dr. M. Payrissat, Head of CLAP

Telephone: +39 332 78 91 18 / 78 58 41      E-Mail: m.payrissat@ei.jrc.it  
Telefax: +39 332 78 52 36

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**Type of Organization:**

Intergovernmental Organisation

**Geographical Scope:**

Regional  
Europe

**Activities:**

Policy development  
Assessment

**Sectors:**

Outdoor air, Atmosphere, Environment and development

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**Keywords:**

00000 HARMONIZATION  
10110 AIR QUALITY  
10300 AIR POLLUTION  
25180 POLLUTION MONITORING  
25265 QUALITY CONTROL  
26160 POLLUTION CONTROL REGULATIONS

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**Activities Related to Measurements and Monitoring:**

- Harmonization programmes for current EC directives:
- Test of instrument performance
  - Intercomparison of calibration procedures
  - Quality assurance/control of air pollution measurements in the monitoring networks.
  - Guidelines for air pollution monitoring
  - Organization of workshops and training courses

#### Harmonization programmes

##### Past activities:

- Quality assurance of SO<sub>2</sub> and TSP calibration procedures in the Member States.
- Quality assurance of SO<sub>2</sub> and TSP monitoring in the EC networks
- Organization of workshops.
- Adaptation and improvement of the SO<sub>2</sub> directive reference method.
- Design of Rouen-Le Havre and Madrid NO<sub>2</sub> monitoring directives.
- Guidelines for SO<sub>2</sub> and Black Smoke monitoring.

##### Present focus:

- Intercomparison of NO<sub>2</sub> calibration procedures
- Quality assurance of NO<sub>2</sub> calibration procedures in the Member States.
- Quality assurance of NO<sub>2</sub> monitoring in the EC networks.
- Test of an EC reference instrument for TSP measurements

##### Preparatory work for new or future regulations

For air pollutants subject to new regulations the CLAP coordinates in collaboration with national experts programmes on:

##### Assessment of EC monitoring techniques and strategy:

- Inventories of current know-how
- Intercomparisons of measurement and calibration techniques
- Specific assessment and pilot studies

##### Elaboration of guidelines for new regulations on:

- Sampling strategy (procedure, frequency)
- Measurement and calibration procedures
- Harmonisation of monitoring network design

#### Scope of the Measurements/Activities:

Harmonization of EC air quality directives

Quality assurance of air quality measurements

Preparatory actions for future air pollution regulation

Publishing instruction manuals on air pollution monitoring

#### QA/QC Activities:

Organization of international QA programmes and implementation of current directives.

Organization of international QC programmes.

Organization and participation in interlaboratory exercises designed for:

- Primary standard intercomparison
- Routine measurement intercomparison

#### Reference materials:

User; Producer; Certifier

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**Instrumentation:**

Air pollution analysers

Calibration devices

Primary standards instrumentation for the preparation of low concentration mixtures- Static dilution systems.

Primary and secondary standards for flow rate determination.

Calibration benchmark for the simultaneous test of 12 analysers.

2 mobile laboratories.

Calibration bench for air pollution measurements

**Programme Participation:**

Scientific programmes specific to CLAP and also proposed to EC national experts and agreed by the Commission.

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**Mario Negri Institute for Pharmacological Research**

Via Eritrea 62  
Milano I-20157  
Italy

Contact: Dr. Roberto Fanelli

Telephone: +39 2 390 141

Telefax: +39 2 354 6277

Telex:331 268

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Italy

**Activities:**

Research

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil, Biosphere,  
Food

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**Keywords:**

22158 ORGANIC POLLUTANTS  
25124 IDENTIFICATION OF POLLUTANTS  
25306 ANALYTICAL EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

Activities are essentially experimental. Development of analytical methodologies to measure organic compounds of environmental significance. The results of our activities are published in international scientific journals or presented at international meetings.

**Scope of the Measurements/Activities:**

Identification of pollution sources  
Early warning



**Reference materials:**

User

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**Instrumentation:**

HPLC

GC

GC-MS

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**National Institute for Health**

Viale Regina Elena, 299  
Roma I-00161  
Italy

Contact: Prof. Francesco A. Manzoli

Telephone: +39 6 4990  
Telefax: +39 6 4957 621

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
National  
Italy

**Activities:**  
Coordination  
Research

**Sectors:**  
Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil, Biosphere,  
Food

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**Keywords:**  
00000 HARMONIZATION  
25180 POLLUTION MONITORING  
25300 MONITORING TECHNIQUES AND EQUIPMENT

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**Activities Related to Measurements and Monitoring:**  
Development, improvement and harmonization of techniques and practices of  
environmental measurement.

**Scope of the Measurements/Activities:**  
Pollutant control monitoring, early warning or vigilance systems  
Observation of climate change, development and control of reference  
materials, identification of pollution sources,  
Verification of models.

**Reference materials:**

User; Certifier; Consultancy Service; Advisory Service

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**Instrumentation:**

Mass spectrometry

Nuclear magnetic resonance spectrometry

UV-VIS and infrared spectrometry

Gas and liquid chromatography

Alpha and beta detectors

Emission spectrography

Electronic microscopy

Flame photometry and atomic absorption spectrometry

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**University of Venice**  
**Department of Environmental Science and Analytical Chemistry**

Dorsoduro 2137  
Venezia I-30123  
Italy

**Contact:** Prof. Giuseppe Scarponi

**Telephone:** +39 41 529 85 47

**Telefax:** +39 41 529 85 39

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**Type of Organization:**  
Academic Organization

**Geographical Scope:**  
National  
Italy

**Activities:**  
Research  
Education

**Sectors:**  
Marine water

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**Keywords:**  
14142 MARINE POLLUTION  
22124 HEAVY METALS  
22190 TRACE ELEMENTS  
25324 CALIBRATION OF MEASURING EQUIPMENT

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**Activities Related to Measurements and Monitoring:**  
Participation in intercalibration exercises  
Participation in certification of standard reference materials  
Holding regular meetings

**Scope of the Measurements/Activities:**  
Detection of metals in sea-water  
Development of reference materials  
Pollutant control monitoring

**Reference materials:**  
User; Certifier; Producer

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**Instrumentation:**  
Polarographic analyser  
(Differential pulse anodic stripping voltammetry)

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**Centre for Global Environmental Research (CGER)  
National Institute for Environmental Studies (NIES)**

16-2, Onogawa, Tsukuba  
Ibaraki 305  
Japan

Contact: Dr. Shuzo Nishioka, Director

Telephone: +81 298 51 6111 ext.380

E-Mail: snishiok@nies.go.jp

Telefax: +81 298 58 2645

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Marine water, Fresh water, Sediment,  
Human settlements, Biosphere, Flora, Fauna, Energy, Economy, Cross media,  
Ecosystem, Environment and development, Environment and social conditions

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**Keywords:**

10418 CLIMATIC CHANGE  
25348 MONITORING EQUIPMENT  
26200 INTERNATIONAL ENVIRONMENTAL RELATIONS  
27110 DATA PROCESSING

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**Activities Related to Measurements and Monitoring:**

Monitoring of global environment: CGER is continuing the systematic and detailed monitoring of the global environment in cooperation with the international monitoring networks (e.g. atmospheric concentration of greenhouse gases).

Support to global environmental research: Provision of super-computer systems to modellers of the global environment and the enhancement of communication among researchers and decision makers, by hosting annual

conferences (e.g. Global Environment Tsukuba). Also a series of symposiums and seminars are held  
Integration research for decision making: Development of global environment and econometric models and of a natural resources accounting system. Also a comparative study on national social systems related to the global environment.

**Scope of the Measurements/Activities:**

Marine pollution and biogeochemical monitoring.  
Observation of climate change through monitoring of greenhouse gases and ozone in the troposphere and stratosphere.  
Guidelines on impact assessment of climate change.

**Reference materials:**

User; Producer; Certifier; Supplier

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**Instrumentation:**

Ozone laser radar and ILAS/RIS  
Supercomputer NEC SX-3 (model 14)

**Databases:**

CGER is developing its prototype Global Environmental Database, allowing efficient retrieval of data.  
CGER is a member of UNEP/GRID network as GRID-Tsukuba.  
CGER (GRID-Tsukuba) distributes GRID global data sets, and produces original data, such as CO2 emissions from fuel consumption.

**Programme Participation:**

CGER is a member of the UNEP/GRID network as GRID-Tsukuba. CGER is a Special Sectoral Source of UNEP/INFOTERRA on global environmental information. GEMS/Water (AQC).

**Publications:**

Summary of the Asian and Pacific Workshop on Global Warming Research (March, 1991) pp.27.  
Global Warming and Economic Growth-modelling experience in Japan (May, 1992), edited by Akihiro Amano, CGER I001-'92, pp.115.  
Environmental and Socio-Economic Impacts of Climate Change in East and South East Asia-IPCC Working Group II Supporting Material (December, 1991), pp.58.  
Preliminary Guidelines for Assessing Impacts of Climate Change-IPCC Report (1992), IPCC/University of Oxford/CGER, pp.28.  
GRID-Tsukuba (March, 1992), CGER-D001-'92, pp.11.

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**Personnel:** 12

**Budget:** 13.7 MIL US\$

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**The Environmental Pollution Research Centre  
of Ibaraki Prefecture**

4043-36, Ishikawa 1-Chome  
Mito-shi, 310  
Japan

Contact: Mr. K. Ishikawa

Telephone: + 81 292 52-3151

Telefax: + 81 292 53-2144

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Subnational  
Ibaraki Prefecture

**Activities:**

Assessment  
Monitoring

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment, Soil  
Other: Noise and odour

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**Keywords:**

10300 AIR POLLUTION  
12100 SOILS  
13000 FRESHWATER  
25210 ATMOSPHERIC MONITORING  
25250 MARINE MONITORING

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**Activities Related to Measurements and Monitoring:**

Holding regular meetings with neighbouring prefectural environmental research centres to interchange opinions and intelligences.

**Scope of the Measurements/Activities:**

Pollutant control monitoring and early warning system



**Instrumentation:**

Integrated system for monitoring air pollution  
Manual sampling and analysis by general existing methods

**Meetings:**

Odour measurement techniques and practices study, for the staff of 92 city halls, September 1991 at Mito-city  
Acid rain research meeting, February 1992 at Shizuoka-city

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**Government Industrial Research Institute, Osaka (GIRIO)**

1-8-31 Midorigaoka  
Ikeda-shi Osaka 563  
Japan

Contact: Mr. Kunishige Higashi, Head of the Environmental Chemistry Section

Telephone: +81 727 51 9659

Telefax: +81 727 51 9629

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Japan

**Activities:**

Research

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Marine water, Fresh water  
Other: Industrial waste water

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**Keywords:**

13480 WATER TREATMENT  
22128 INDUSTRIAL EFFLUENTS  
22152 NITROGEN OXIDES  
22184 TOXIC SUBSTANCES  
25235 FRESHWATER MONITORING  
25270 WATER QUALITY

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**Activities Related to Measurements and Monitoring:**

Research on automatic measurement methods for lake water pollution.

Development of automatic measurement methods for nitrogen compounds, phosphorus compounds, dissolved iron, dissolved organic substances, vitamin B, BOD, phytoplanktons.

Research on measurement methods for refractory harmful compounds such as aromatic-nitrogen or aromatic-chlorine chemicals dissolved in industrial waste water.

Ion-Selective electrodes.

Decomposition and measurement methods of toxic chemicals.  
Adsorption of organochlorine compounds with active carbon.  
Catalysts for fixation of carbon dioxide and removal of nitrogen oxides.  
Preparation of biodegradable plastics.

**Scope of the Measurements/Activities:**

Pollutant control monitoring.  
Treatment of waste water.  
Measurement of water quality.

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**Instrumentation:**

Newly developed automatic measurement apparatus  
Monitoring station  
High performance liquid chromatography  
Capillary electrophoresis  
HPLC, GC and AAS

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**International Society for Photogrammetry and Remote Sensing  
(ISPRS)**

c/o Institute of Industrial Science, University of Tokyo  
7-22 Roppongi, Minatoky  
Tokyo  
Japan

**Contact:** Prof. Dr. Shunji Murai

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**Telefax:** +81 3 479 27 62

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Coordination  
Other: Remote Sensing, G.I.S. and Cartography

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**Keywords:**

25360 REMOTE SENSING  
27150 GEOGRAPHIC INFORMATION SYSTEMS  
28121 CARTOGRAPHY  
28167 PHOTOGRAMMETRY

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**Activities Related to Measurements and Monitoring:**

Mapping

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**Instrumentation:**

Space and airborne sensors providing imagery; Image analysis systems

**Meetings:**

ISPRS Congress, Washington, D.C. August 2-14 1992

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**International Tropical Timber Organization (ITTO)**

International Organizations Centre  
Pacifico Yokohama, 5F1-1-1 Minato-Mirai  
Nishi-ku Yokohama 220  
Japan

Contact: Mr. B.C.Y. Freezailah, Executive Director

Telephone: +81 45 223 1110

Telefax: +81 45 223 1111

Telex:3822480 itto j

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Global

**Activities:**

Policy development  
Coordination  
Research  
Data/Information management

**Sectors:**

Flora, Ecosystem  
Other: Tropical forest research and monitoring

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**Keywords:**

12300 TROPICAL FOREST AND WOODLAND ECOSYSTEMS  
12384 TROPICAL ECOSYSTEMS  
12391 TROPICAL FORESTS  
15114 FOREST MANAGEMENT  
17280 FOREST PRODUCTS

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**Activities Related to Measurements and Monitoring:**

ITTO was founded under the International Tropical Timber Agreement, negotiated under UNCTAD in 1983. It provides a forum for consultation and cooperation between producing and consuming countries of tropical timber, in order to strike a balance between utilization and conservation.

The organization funds projects in the areas of reforestation and forest management, further processing of tropical timber in producing countries and economic information and market intelligence.

Additionally, several guidelines have been published on sustainability of natural and planted tropical forests, conservation of biological diversity and criteria for the measurement of sustainable forest management.

ITTO is governed by a Council, formed by member countries, which meet twice a year. The Annual Review and Assessment of the World Tropical Timber Situation is published annually and reports on trade statistics and logging rates, based on data submitted by members. Additionally, members report annually on their progress towards "Target 2000", by which year all tropical timber entering international trade is to be from sustainably managed resources.

**Scope of the Measurements/Activities:**

Progress toward sustainable management of tropical timber resources.

**QA/QC Activities:**

There is no formal QA programme, however, in compiling data for the annual review, the data is informally reviewed and clarification is requested from the member country when inconsistencies are noted.

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**Databases:**

ITTO collects information and maintains databases on international trade statistics for tropical timber, prices, tropical forest areas and harvesting.

The data is published in the Annual Review and Assessment of the World Tropical Timber Situation.

Additionally, ITTO has a database on lesser known species available on disk and a database of all ITTO funded forestry projects.

**Publications:**

Annual Review.

Various report papers on trade statistics and logging rates.

ITTO Action Plan of priority areas for programme development.

**Meetings:**

ITTO Council meets twice a year

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**Personnel:** 26

**Budget:** 3.6 MIL:(Admin.) 12 MIL:(Project Acc.) US\$

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**Japan Meteorological Agency (JMA)**

1-3-4 Otemachi, Chiyoda-ku  
Tokyo 100  
Japan

Contact: Dr. Katsuhiko Fushimi, Head, Pollutants Chemical Analysis Center

Telephone: +81 3 3212-8341

Telefax: +81 3 3211-3047

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional

Western North Pacific Ocean; Japan

**Activities:**

Policy development

Research

Monitoring

Data/Information management

**Sectors:**

Outdoor air, Marine water, Cross media

Other: Rain water

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**Keywords:**

10110 AIR QUALITY

10300 AIR POLLUTION

10418 CLIMATIC CHANGE

14142 MARINE POLLUTION

25250 MARINE MONITORING

26160 POLLUTION CONTROL REGULATIONS

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**Activities Related to Measurements and Monitoring:**

Issuing guidelines for measurement techniques and practices for marine and air pollution.

Publishing the report of observation for monitoring background marine (and air) pollution in the western North Pacific, and for Japan itself.

Publishing the report on global warming and ozone depletion.

Issuing guidelines for measurement techniques for ozone observation and solar ultraviolet irradiance observation.

**Scope of the Measurements/Activities:**

Pollutant monitoring for early warning and observation of climate change.  
Background marine pollution monitoring (within the framework of GIPME/MARPOLMON).  
Background air pollution monitoring (within the framework of BAPMON).  
Monitoring of greenhouse and ozone layer depleting gases in the maritime air and ocean (BAPMON, GO3OS/GAW).  
Monitoring of ozone layer and solar ultraviolet irradiance.

**QA/QC Activities:**

Acid rain: intercomparison for analysing artificial "acid rain" samples in the programme of WMO-GAW.  
CO<sub>2</sub> standard gas: adjusted to WMO-GAW standards. Participation in the CO<sub>2</sub> round robin intercomparison (WMO-GAW).  
Ozone observation: intercomparison of ozone spectrophotometer and ozonesonde in the programme of GO3OS/GAW/WMO.  
Solar ultraviolet irradiance observation: Inspection based on NBS standard lamp.

**Reference materials:**

User

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**Instrumentation:**

AAS; IR; GC-ECD; FID; IC; UV spectrophotometry

**Databases:**

Atmospheric compositions (CO<sub>2</sub>, CH<sub>4</sub>, CFC's, N<sub>2</sub>O, CO, O<sub>3</sub>, CH<sub>3</sub>CCl and CCl<sub>4</sub>) near the surface, since 1987.  
GHG's (CO<sub>2</sub>, CH<sub>4</sub>, CFC's, N<sub>2</sub>O) in the Western North Pacific since 1989.  
Vertical distribution of ozone from Umkehr observations over Japan.  
Vertical distribution of ozone from ozonesonde observations over Japan.  
Solar spectral ultraviolet irradiance in Japan.  
Chemical composition of precipitation in Japan since 1976.  
Heavy metal pollution in the Western North Pacific since 1972.  
Oil pollution in the Western North Pacific since 1976.  
Total Ozone amounts over Japan.

**Programme Participation:**

GIPME/MARPOL-MON. BAPMON. GO<sub>3</sub>OS/GAW WMO.

**Publications:**

Observation Monitoring Reports: air pollution, marine pollution, global warming and ozone depletion.

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**Maritime Safety Agency. Hydrographic Department.  
Ocean Surveys Division, Marine Pollution Research Laboratory**

5-3-1, Tsukiji, Chuo-Ku  
Tokyo, 104  
Japan

Contact: Mr. Yoshio Seto

Telephone: +81 3 3541 3811

Telefax: +81 3 3248 1250

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Japan

**Activities:**

Research

Monitoring

**Sectors:**

Marine water, Sediment

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**Keywords:**

12148 SEDIMENTATION

14142 MARINE POLLUTION

25250 MARINE MONITORING

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**Scope of the Measurements/Activities:**

Scientific investigation for prevention of marine pollution and preservation of the marine environment

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**Instrumentation:**

Atomic absorption spectrophotometer; Infrared spectrophotometer;

Fluorescence spectrophotometer; X-ray fluorescence spectrometer;

Gas chromatograph

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**National Institute for Environmental Studies (NIES)**

16-2 Onagowa, Tsukuba  
Ibaraki 305  
Japan

Contact: Dr. Masatoshi Morita, Director, Division of Chemistry and Physics

Telephone: +81 298 51 6111

Telefax: +81 298 51 4732

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Japan

**Activities:**

Coordination  
Data/Information management  
Policy development

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment, Soil, Biosphere,  
Environment and social conditions

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**Keywords:**

10300 AIR POLLUTION  
12100 SOILS  
12148 SEDIMENTATION  
13000 FRESHWATER  
25250 MARINE MONITORING  
25265 QUALITY CONTROL

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**Activities Related to Measurements and Monitoring:**

In order to provide a basis for the preventive and predictive approaches to pollution control and for better environmental management, the research area of NIES has been selected and oriented towards:

- understanding of natural processes and mechanisms underlying the pollution phenomena
- characterization of long-term pollution effects and consequences

-social and policy analyses leading to "environmentally favourable" economic and socio-institutional systems and related technology development

To pursue these goals, NIES is designed as a multi-disciplinary research organization consisting of both natural and social science sections featured with specially-designed, large-scale experimental facilities and advanced laboratory technologies.

Specific activities are among others:

- Issuing a variety of environmental reference materials for quality assurance (NIES certified reference materials)
- Specimen banking of environmental samples for future use in monitoring of environmental change
- participation in international research and monitoring programmes
- data collection and data source information (directory or meta-database)
- development of analytical methodology

**Reference materials:**

Producer; Certifier; Consultancy Service

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**Instrumentation:**

Laser radar  
Ozone laser radar  
Aerosol chamber  
Wind tunnel  
Aerosol wind tunnel  
Evaluation Laboratory of Man-Environmental Systems, ELMES  
Image Processing System for Environmental Analysis and Evaluation, IPSEN  
Phytotron  
Homotron  
Aquatron  
Pedotron  
Zootron  
ICP-atomic emission spectrometry  
Atomic absorption spectrometry  
Gas chromatography  
Mass spectrometry

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**National Institute for Resources and Environment (NIRE)**

16-3 Onogawa, Tsukuba-shi  
Ibaraki 305  
Japan

Contact: Mr. Mikiya Tanaka, Research planning officer

Telephone: +81 298 58 8111

Telefax: +81 298 58 8118

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Monitoring  
Assessment  
Research

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Marine water, Lithosphere, Rock,  
Cross media, Ecosystem, Environment and development  
Other: Waste water

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**Keywords:**

10140 CARBON DIOXIDE  
10300 AIR POLLUTION  
10454 GREENHOUSE EFFECT  
13378 WATER POLLUTION  
22152 NITROGEN OXIDES  
25210 ATMOSPHERIC MONITORING  
25235 FRESHWATER MONITORING  
25250 MARINE MONITORING

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**Activities Related to Measurements and Monitoring:**

Measurement and analysis of pollutants in atmospheric and hydrospheric environments.  
Measurement of gases which contribute to global warming such as CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O.

**Scope of the Measurements/Activities:**

Emission control of halocarbons.  
Assessment of environmental acceptability of alternative fluorocarbons.  
Global circulation modelling.  
Field observation of CO<sub>2</sub> behaviour in the environment.  
Monitoring and analysis of atmospheric and marine environments using remote sensing technology.  
Carbon cycle study in Northwest Pacific.  
CO<sub>2</sub> fixation by artificial photosynthesis.

**Reference materials:**

Certifier

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**Instrumentation:**

Inductively coupled plasma (ICP) emission spectrometry, ICP-MS,  
GC-MS, Atomic absorption spectrometry, etc.

**Programme Participation:**

Study on the cycle of trace gases and its modelling in both hemispheres.  
Efficient utilization of unused tropical biomass. Assessment of pollution by chemical substances. Assessment of air pollution in industrialized cities.

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**National Institute of Radiological Sciences**

9-1, Anagawa-4-chome  
Inage-ku, Chiba-shi 263  
Japan

Contact: Mr. Hiromichi Matsudaira

Telephone: +81 43 251-2111

Telefax: +81 43 256-8301 or +81 43 256-9616

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Japan

**Activities:**

Monitoring  
Assessment

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil, Biosphere,  
Cross media, Food

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**Keywords:**

10300 AIR POLLUTION  
12100 SOILS  
12148 SEDIMENTATION  
13000 FRESHWATER  
14142 MARINE POLLUTION  
21384 RADIOACTIVITY  
25188 RADIATION MONITORING

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**Scope of the Measurements/Activities:**

Measurement of environmental radioactivity

**Reference materials:**

User

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**National Research Laboratory of Metrology**

1-1-4, Umezono, Tsukuba-shi  
Ibaraki 305  
Japan

Contact: Dr. Masaki Takamoto, Research Planning Office

Telephone: +81 298 54 4118

Telefax: +81 298 54 4099

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Japan

**Activities:**

Research

**Sectors:**

Outdoor air, Marine water, Fresh water

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**Keywords:**

10110 AIR QUALITY

10140 CARBON DIOXIDE

10300 AIR POLLUTION

25324 CALIBRATION OF MEASURING EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

Research on:

Techniques of standard mixed gas preparation

Standards of dissolved oxygen concentration

Calibration techniques for vibration pickups

Pollution detection system using diode lasers

Instrumentation technology of suspended particles in waste water

Spectrophotometric standards for environmental analysis

Measurement of carbon dioxide in sea water

Humidity standards and measurement

**Scope of the Measurements/Activities:**

- Development of standards and reference materials
- Observation of pollutants

**Reference materials:**

User

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**Instrumentation:**

- Spectrophotometry
  - Weight measurement
  - Flow measurement
  - Vibration measurement
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**Mitsubishi Research Institute  
Incorporated Research Centre for Environment and Development**

3-6, Otemachi 2-Chome  
Chiyoba-Ku, Tokyo 100  
Japan

Contact: Mr. Yoichi Aoki

Telephone: +81 3 32 70 9211

Telefax: +81 3 34 79 1502

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**Type of Organization:**

Industrial or Commercial  
National

**Geographical Scope:**

Global

**Activities:**

Research  
Policy development

**Sectors:**

Outdoor air, Marine water, Food

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**Keywords:**

10300 AIR POLLUTION  
14142 MARINE POLLUTION  
20240 ENERGY EFFICIENCY  
25180 POLLUTION MONITORING

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**Activities Related to Measurements and Monitoring:**

Recommendations for efficient energy use  
Recommendations for public education on environment issues  
Mitsubishi Research Institute has no original data gathering system. Initial data come from other organizations.

**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Potential global food production activities estimation

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**Association for Better Land Husbandry (ABLH)**

Parklands P.O.  
Nairobi  
Kenya

Contact: Mr. Rodney J. Cheatle

Telephone: +254 2 521 090

Telefax: +254 2 521 482

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
East and Horn of Africa

**Activities:**

Education  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Lithosphere, Soil, Biosphere, Flora, Fauna, Human, Ecosystem, Environment  
and development, Environment and social conditions

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**Keywords:**

12104 AGRICULTURAL LAND  
28109 ANIMAL HUSBANDRY

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**Programme Participation:**

TSBF.

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**East Africa Natural History Society (EANHS)**

**Nairobi**  
**Kenya**

**Contact:** Dr. E. Vanden Berghe, Journal Editor

**Telephone:** + 254 2 742131

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
East Africa

**Activities:**

Education  
Research  
Monitoring

**Sectors:**

Flora, Fauna, Environment and development

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**Keywords:**

12722 BIRDS  
12786 WILDLIFE CONSERVATION  
25220 ENVIRONMENTAL MONITORING  
25285 WILDLIFE POPULATION STATISTICS  
30105 EAST AFRICA

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**Activities Related to Measurements and Monitoring:**

Publication of the Journal of East African Natural History (peer referred).  
Bird ringing.  
Field excursions.  
Maintenance of a library in collaboration with National Museums of Kenya.  
Bulletin of East Africa Natural History Society.

**Scope of the Measurements/Activities:**

Monitoring biodiversity and the state of the environment.

**QA/QC Activities:**

The Journal of East African Natural History is peer reviewed.

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**Instrumentation:**

Field observing equipment.

**Databases:**

Bird ringing records.

Bird nesting records.

**Programme Participation:**

Birdlife International: Birdlife Kenya, one of the sub-committees of the society, is the local representative. The Kenyan Wetlands Working Group has close ties with IUCN.

**Publications:**

Many journals on environmental issues.

The Journal of East African Natural History.

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**United Nations Environment Programme (UNEP)  
Global Environment Monitoring System (GEMS)  
Programme Activity Centre (PAC)**

**Nairobi  
Kenya**

**Contact:** Mr. Jan W. Huismans, Director

**Telephone:** +254 2 621234

**Telefax:** +254 2 226491

**Telex:** 22068 UNEP KE

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**Type of Organization:**

United Nations Organization

**Geographical Scope:**

Global

**Activities:**

Monitoring

Assessment

Coordination

Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Fresh water, Snow/Ice, Biosphere,  
Flora, Fauna, Human, Cross media, Food, Ecosystem

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**Keywords:**

10110 AIR QUALITY

10300 AIR POLLUTION

13378 WATER POLLUTION

23418 FOOD

25220 ENVIRONMENTAL MONITORING

25265 QUALITY CONTROL

25270 WATER QUALITY

25300 MONITORING TECHNIQUES AND EQUIPMENT

27110 DATA PROCESSING

27170 PUBLIC INFORMATION

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**Activities Related to Measurements and Monitoring:**

The GEMS Programme Activity Centre (PAC) is coordinating and expanding global monitoring activities in several networks, (such as GEMS air, GEMS water, GEMS food, HEAL'S, BAPMoN and GERMoN), in cooperation with FAO, UNESCO, WHO, WMO and other parts of UNEP. Methods and techniques for establishing and improving monitoring network and for quality management of the data collected are developed.

Sectoral data and information compilation

Integrated environmental information networks

Global sectoral databases and associated global sectoral monitoring networks

Strengthening monitoring and assessment and information handling capabilities in less developed countries

Technical assistance including training

Methodology development

Quality assurance

Data harmonization

Sectoral assessment and report production

Global assessment including environmental trends

**Scope of the Measurements/Activities:**

GEMS major objectives are to make comprehensive assessments of major environmental issues, provide scientific data needed for rational environmental management, and to provide early warning of environmental change.

More specifically, the measurements done in the different networks have among others these objectives:

Pollution control monitoring of freshwater, urban air and food;

Quantification of the routes by which people are exposed to pollution

Establish reference levels for naturally and anthropogenic

originating compounds;

Production of periodic assessments of environmental components

Strengthening monitoring and assessment capabilities in participating countries

Increasing the compatibility and validity of environmental data between participating countries

**QA/QC Activities:**

Periodic quality control on BAPMoN measurements being developed through QA science activity centres to meet GAW requirements

QA and QC of GEMS Air participating stations coordinated and carried out by regional audit teams from regional centres

QA and QC procedures being further developed for GEMS Water participating stations and data storage and processing facilities along the same lines as for GEMS Air with a routine quality control procedure in operation.

For GEMS Food, QA is carried out at laboratories, at both national and international levels

For HEAL's, rigorous QA programmes are implemented by Technical Coordinating Centres responsible for various project components

**Reference materials:**

User

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**Instrumentation:**

Varied

**Databases:**

**GEMS/WATER:** Variety of water quality parameters from a global network of monitoring sites. Database held at the National Water Research Institute, Canada.

**GEMS/AIR:** Urban air pollutant levels from 270 monitoring sites in 86 cities in 45 countries. Database held by US/EPA.

**GEMS/FOOD:** Data on 9 organochlorine and 5 organophosphorous pesticides. Also 4 metals and 1 mycotoxin in 40 countries. Database held by WHO/HQ.

**BAPMoN:** Turbidity, precipitation chemistry, suspended particles, greenhouse and other atmospheric gases, except ozone. Network of over 160 reporting stations. Database held at WMO and elsewhere.

**Programme Participation:**

Global Atmosphere Watch (GAW; WMO). World climate programme; World climate impact studies programme (WMO). GEMS Air programme (WHO/UNEP). GEMS Water programme (WHO/UNEP/UNESCO/WMO). GEMS Food programme (UNEP/FAO/WHO). Human Exposure Assessment Locations programme (HEAL; WHO/UNEP). Forest resources assessment (UNEP/FAO). World glacier inventory (UNEP/UNESCO/WMO/Swiss Federal Institute of Technology).

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**Personnel:** 14 full time, 11 support

**Budget:** 1.8 MIL US\$

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**Administration of the Environment (AE)**

1a, rue Auguste Lumiere  
Luxembourg L-1950  
Luxembourg

Contact: Mrs. Monique Back, Biologist

Telephone: + 352 496 105

Telefax: + 352 491 884

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Luxembourg

**Activities:**

Management and Enforcement

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Fresh water, Cross media,

Ecosystem, Environment and development

Other: Waste water and sludge from sewage treatment plants.

Waste (in general).

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**Keywords:**

10110 AIR QUALITY

12100 SOILS

13000 FRESHWATER

22456 SEWAGE TREATMENT SYSTEMS

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**Activities Related to Measurements and Monitoring:**

Surveillance of drinking water quality

Water pollution control

Surface water protection monitoring

Air pollution control

Surveillance of the permitted noise levels

Waste avoidance, waste recovery and waste management



**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Identification of pollution sources

**QA/QC Activities:**

Participation in a QA programme with another laboratory in Luxembourg

**Reference materials:**

User

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**Instrumentation:**

Ion chromatography  
Gas chromatography  
Atomic absorption spectrophotometers  
UV/VIS and IR spectrophotometers  
Potentiometers

**Databases:**

Databases exist for the following topics:  
Drinking water quality  
Quality of the effluents of the waste water treatment plants  
Quality of the rivers and lakes  
Air pollution quality  
Waste disposal and recovery information

**Programme Participation:**

F.EX. modelling of the eutrophic parameters in the Moselle river, carried out through membership of the International Commission for the Protection of the Rivers Moselle and Sarre.

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**Personnel: 33**

**Budget: 1.5 MIL US\$**

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**Nature Conservation Service  
Administration for Waters and Forests**

67, rue Michel Welter  
Luxembourg L-2730  
Luxembourg

Contact: Mr. Jean-Marie Sinner

Telephone: + 352 402 201

Telefax: + 352 48 59 85

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Luxembourg

**Activities:**

Monitoring

Policy development

Assessment

Management and Enforcement

**Sectors:**

Fresh water, Fauna, Flora

Other: Landscapes

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**Keywords:**

13000 FRESHWATER

13378 WATER POLLUTION

15145 NATURE CONSERVATION

26160 POLLUTION CONTROL REGULATIONS

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**Activities Related to Measurements and Monitoring:**

Landscape description and inventories of the flora and fauna

The fishing and hunting division is in charge of the biological control of standing and running waters.

Harmonization efforts are made in the Benelux and European community for the biological indexes of water pollution

Reference material is kept for aquatic organisms

**Scope of the Measurements/Activities:**

- Administration and management of protected areas
- Identification of potential natural reserves
- Monitoring running and standing waters
- Assessing the damage in case of pollution
- Execution and control of nature protection legislation

**Reference materials:**

User

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**Instrumentation:**

- Observation in the field
- Microscope

**Programme Participation:**

Species conservation programmes with neighbouring countries.

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**Asian Wetlands Bureau (AWB)**

Institute of Advanced Studies, University of Malaya  
Lembah Pantai  
Kuala Lumpur 59100  
MALAYSIA

Contact: Dr. Jon Davies, Senior programme officer

Telephone: +60 3 7572176 +60 3 7566624

Telefax: +60 3 7571225

Telex: unimal ma 39845

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Asia

**Activities:**

Policy development  
Coordination  
Education  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Hydrosphere, Marine water, Fresh water, Lithosphere, Sediment, Biosphere,  
Flora, Fauna, Cross media, Ecosystem,  
Environment and development, Environment and social conditions.

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**Keywords:**

12600 WETLANDS ECOSYSTEMS  
15268 REGIONAL PLANNING

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**Activities Related to Measurements and Monitoring:**

AWB's goal is the conservation and sustainable use of wetlands in Asia. This  
is achieved by:

- Compiling and gathering data on wetlands in Asia

- Developing rapid assessment techniques to assess the conservation status of wetlands
- Monitoring threats to Asian wetlands
- Disseminating information on Asian wetlands
- Developing networks within GO's and NGO's in Asian countries who are trained to monitor and assess wetlands
- Holding national and regional workshops concerning the conservation and sustainable use of wetlands
- Acting as a catalyst by encouraging other organisations to aid in wetland monitoring and assessment

**Scope of the Measurements/Activities:**

"Vigilance system" for threats to wetlands such as drainage  
 Information dissemination/awareness of building on wetlands  
 Maintaining an overview of the conservation status of wetlands in Asia  
 Identifying key sites for conservation

**QA/QC Activities:**

Utilisation of previous data and local experts, but no direct undertaking of QA systems.

**Reference materials:**

User; Producer; Supplier

**Databases:**

AWB have the Indonesian Wetland Database (IWD) in their Indonesian office, which holds both biological and socio-economic information for Indonesian Wetlands.

AWB are currently expanding their database to include other countries with wetland responsibilities.

**Programme Participation:**

No scientific research programmes, however, close links to international conservation bodies exist (WWF, IUCN, IWRB).

**Publications:**

Pamphlet on the work of the AWB

**Personnel: 50**

**Budget: 1 MIL US\$**

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**Centre of Studies and Research on Population for Development  
Sahel Institute (CERPOD)**

**Bamako  
Mali**

**Contact:** Mr. Nassour G. Ouaidou, Director General

**Telephone:** + 223 22 30 43 + 223 22 80 86

**Telefax:** + 223 22 78 31

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional  
Western Sahel

**Activities:**

Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Food, Ecosystem, Environment and development, Environment and social conditions, Cross media  
Other: Energy, Land Use

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**Keywords:**

12291 SEMI-ARID LAND ECOSYSTEMS  
15000 ENVIRONMENT AND DEVELOPMENT  
15284 SUSTAINABLE DEVELOPMENT  
16428 HUMAN POPULATION  
25000 MONITORING AND ENVIRONMENTAL DATA  
25200 MONITORING CRITERIA AND DATA

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**Activities Related to Measurements and Monitoring:**

Promote and coordinate research and monitoring activities.  
Hold regional validation meetings with emphasis on the harmonization of the results.  
Publication of regional meeting proceedings.

Collection, processing and dissemination of the results of the research and monitoring.

Issuing guidelines for measurement techniques and practices.

Designing and implementing research action programmes in the field of population, environment and development.

Using micro computer models for strategic planning and decision making in population, agriculture and environment matters.

**Scope of the Measurements/Activities:**

Early warning and sustainable management options.

Observation of ecosystem changes.

Identification of the socio-demographic factors of change in the ecosystems and in the management of natural resources.

Verification of intensification models.

Micro computer models of planning and sensitization in the fields of population, agriculture and the environment.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Population and agricultural censuses.

Environmental indicators (soils, vegetation cover and agricultural practices).

**Databases:**

Mali inventory of Terrestrial Resources:

- Annual data of vegetation (natural and cultivated) cover, rainfall and water resources for the nine member states of the Committee for the Drought Control in the Sahel (CILSS).

- Sesame: Universite des Reseaux d' Expression Francaise.

- Many local databases on Sahelian countries.

**Programme Participation:**

Impending connections with Unesco MAB.

**Publications:**

Regional meeting proceedings.

Sahel Information.

**Meetings:**

Regional validation meetings

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**Personnel: 43**

**Budget: 3.5 MIL US\$**

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**Meteorological Service (METEO VACOAS)**

**St. Paul Road  
Vacoas  
Mauritius**

**Contact:** Director

**Telephone:** + 230 686 1031/32

**Telefax:** + 230 686 1033

**Telex:** 4722 METEO IW

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional  
Indian ocean  
Mauritius

**Activities:**

Management and Enforcement  
Monitoring

**Sectors:**

Outdoor air, Atmosphere  
Other: Sea level

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**Keywords:**

24264 ENVIRONMENTAL CONTINGENCY PLANNING  
25210 ATMOSPHERIC MONITORING  
25220 ENVIRONMENTAL MONITORING  
25245 LONG-TERM TRENDS AND FORECASTING  
25275 WEATHER MONITORING  
25280 WEATHER PREDICTION  
28157 METEOROLOGY  
29317 ENGLISH  
29323 FRENCH  
30136 MAURITIUS

**Activities Related to Measurements and Monitoring:**

Issuing guidelines for measurement techniques and practices  
Monitoring of meteorological parameters.



Providing weather and climate information to users in different sectors of the economy.  
Providing long term trends and forecasting.  
Participating in activities of WMO, UNEP, IOC (UNESCO), FAO, IPCC of WMO/UNEP.

**Scope of the Measurements/Activities:**

Observation of climate change  
Early warning issues on adverse weather conditions.  
Maintenance of a cyclone warning centre.  
Monitoring of air pollution.  
Verification of global weather model products.

**QA/QC Activities:**

QC of parameters monitored locally.  
Local calibration of meteorological instruments.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Conventional meteorological equipment  
Wind finding and weather radar.  
Satellite picture receiver.  
Personal computers.  
Telecommunication equipment.

**Databases:**

Long term database of meteorological parameters at different sites in the country.

**Programme Participation:**

WMO World Climate Programme (WCP). TOGA Programme of IOC/UNESCO.  
Regional Seas Programme of UNEP.

**Publications:**

Publishing regular climatological summaries and technical reports, particularly on tropical cyclones and other adverse weather conditions.

**Meetings:**

Congresos Indigenistas Interamericanos Cada y Anos. 22-26 November, 1993. Managua, Nicaragua.

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**Personnel:** 150

**Budget:** 1 MIL US\$

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**Inter-American Indian Institute (III)**

Nubes 232, Col. Pedregal de San Angel  
Mexico D.F. 01900  
MEXICO

Contact: Dr. Jose Matos Mar, Director

Telephone: +52 5 568 0819

Telefax: +52 5 652 1274

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional

American countries with Indian population

**Activities:**

Policy development

Management and Enforcement

Research

Data/Information management

**Sectors:**

Environment and development, Environment and social conditions

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**Keywords:**

12366 SUB-TROPICAL ECOSYSTEMS

12384 TROPICAL ECOSYSTEMS

30200 AMERICAS

30202 CENTRAL AMERICA

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**Activities Related to Measurements and Monitoring:**

Research in anthropology, training of Indians, projects of ethnic development for Indians who live in sparse ecological surroundings (altiplano and cordilleras), or in fragile ecosystems of humid tropics (Amazonia and Central America)

**Scope of the Measurements/Activities:**

Monitoring of the life conditions of Indian populations related to their habitat.

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**Databases:**

The library has more than 40 000 volumes of specialized information on anthropology and Indians. An important part of this information refers to ecology and use of habitat of Indian populations in the continent.

**Programme Participation:**

At the present time III are starting a survey to detect the situation of Indian populations in America.

**Publications:**

Revista America Indigena, Trimestral, Desde 1941.  
Anuario Indigenista, Desde 1963.

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**Personnel: 8**

**Budget: 287 000 US\$**

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**Delft Hydraulics**

Rotterdamsweg 185  
Delft NL-2600 MH  
Netherlands

Contact: Mr. J.D. van den Bunt, Director of instrumentation services and field measurements

Telephone: +31 15 56 93 53

Telefax: +31 15 61 96 74

Telex:38176 hydel nl

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**Type of Organization:**

Industrial or Commercial  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Research  
Data/Information management

**Sectors:**

Hydrosphere, Marine water, Fresh water, Lithosphere, Sediment, Ecosystem

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**Keywords:**

12148 SEDIMENTATION  
13000 FRESHWATER  
13156 RIVERS  
14370 MARINE ECOSYSTEMS  
25342 MODELLING AND SIMULATION

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**Activities Related to Measurements and Monitoring:**

Issuing guidelines for micropollutant analysis techniques.

**Scope of the Measurements/Activities:**

Verification of models  
Boundary conditions of models for water resource management,  
river basin management and ecological systems.  
Pollution control monitoring.  
Early warning systems.  
Identification of pollution sources.  
Calibration and validation of models.

**QA/QC Activities:**

National quality assurance programme.

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**Instrumentation:**

Standard, regularly available equipment and custom designed and built systems.

**Databases:**

ASAP (UNEP commissioned to Delft Hydraulics)

**Programme Participation:**

EC- environment.

**Publications:**

"Profile" (leaflet)

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**Personnel: 500**

**Budget: 50 MIL US\$**

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**DLO Winand Staring Centre for Integrated Land, Soil and Water  
Research (SC-DLO)**

**Marijkeweg 11  
Wageningen NL-6700 AC  
Netherlands**

**Contact:** Dr. A. de Veer

**Telephone:** +31 8370 74200

**Telefax:** +31 8370 24812

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

National  
Netherlands

**Activities:**

Policy development  
Monitoring  
Research  
Data/Information management

**Sectors:**

Outdoor air, Fresh water, Soil

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**Keywords:**

10300 AIR POLLUTION  
12100 SOILS  
13000 FRESHWATER  
22184 TOXIC SUBSTANCES  
23466 NUTRITIVE VALUE OF FOOD  
25245 LONG-TERM TRENDS AND FORECASTING  
25342 MODELLING AND SIMULATION

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**Activities Related to Measurements and Monitoring:**

Research on water management and environmental protection by means of  
research ditches.etc.

**Scope of the Measurements/Activities:**

Development of knowledge on the regional transport of ground water and surface water and compounds (nutrients, toxic substances)  
Forecasting the effects of policies on quantitative and qualitative water management

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**Instrumentation:**

Models: RESAM, ANIMO, PESTLA, TRANSOL, SIMGRO.  
Instruments: ICP, Flow Injection Analyzer, HPLC

**Databases:**

Systematic Soil Information (SBI).  
Land-use information by remote sensing (LGN).

**Programme Participation:**

International programmes on climatic change: IGBP/BAHC, EFEDA/HADEX

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**Personnel:** 250

**Budget:** 30 MIL. Dutch G.

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**Europa Nostra**

Lange Voorhart 35  
Den Haag NL-2514 EC  
Netherlands

Contact: Ms. Margot Dijkgraaf

Telephone: +31 70 35 60 333

Telefax: +31 70 36 17 865

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Europe

**Activities:**

Data/Information management

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**Keywords:**

16406 COMMUNITY PARTICIPATION  
27000 ENVIRONMENTAL AWARENESS  
27170 PUBLIC INFORMATION

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**Scope of the Measurements/Activities:**

Magazine, international symposiums

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**Instrumentation:**

No measurements

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**European Environmental Research Organization (EERO)**

**AB Wageningen NL-6700  
Netherlands**

**Contact:** Dr. J.V. Lake

**Telephone:** +31 8370 84817

**Telefax:** +31 8370 84818

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Europe

**Activities:**

Research  
Monitoring

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment, Soil, Biosphere

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**Keywords:**

25220 ENVIRONMENTAL MONITORING  
27140 ENVIRONMENTAL TRAINING

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**Scope of the Measurements/Activities:**

Long-term post doctoral fellowships  
Short term fellowships  
Advanced laboratory courses  
Lecture courses  
Workshops and symposia  
Laboratory networks

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**Instrumentation:**

Research on analytical and detection methods.

**Meetings:**

Workshops, annual symposia

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**Society for Medical and Biological Information Management (VMBI)**

c/o Stichting BA215  
Leiden NL-2300  
Netherlands

Contact: Prof. A.R. Bakker

Telephone: +31 71 256 736

Telefax: +31 71 216 675

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National

**Activities:**

Coordination  
Data/Information management  
Other: Medicine

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**Keywords:**

23454 MEDICAL TREATMENT AND HEALTH CARE

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**Activities Related to Measurements and Monitoring:**

Information processing in medicine.  
Working groups (privacy, nursing informatics, data modelling, etc.)

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**Meetings:**

The annual Medisch Informatica Congres (MIC), in cooperation with MIM (Belgian)

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**TNO Institute of Applied Geoscience (TNO)**

Schoemakerstraat 97  
Delft NL-2600 JA  
Netherlands

Contact: Dr. H. Speelman, Director

Telephone: +31 15 69 7184

Telefax: +31 15 56 4800

Telex:38071 zptno nl

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

Global

**Activities:**

Monitoring  
Data/Information management  
Assessment  
Research

**Sectors:**

Fresh water

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**Keywords:**

13172 SUBTERRANEAN WATER  
25372 STREAM MEASUREMENTS  
26200 INTERNATIONAL ENVIRONMENTAL RELATIONS  
28121 CARTOGRAPHY  
28139 GEOPHYSICS

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**Activities Related to Measurements and Monitoring:**

Contribution to the proper management and use of subsurface natural resources through geoscience research.  
Operating the On Line Groundwater Archives (11 mil. groundwater level data, increasing by 500.000/year; 50.000 chemical analyses of the groundwater) and developing the Regional Geohydrological Information System for the management manipulation and presentation for the proper management of groundwater on national, regional and local scales.

**Scope of the Measurements/Activities:**

Manages the national groundwater level monitoring network in the Netherlands (ca. 17.000 observation points) and the groundwater information system.  
Produces the national groundwater map of The Netherlands, including data-acquisition (a.o. geophysics).  
Participation in international projects and cooperation with international institutions.  
Monitoring of groundwater quantity and quality.

**QA/QC Activities:**

QC procedures regarding quality status of data and representativeness of data.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Groundwater level measurement devices  
Geo-electrical equipment  
Electromagnetic equipment  
Seismic equipment (high resolution seismics)  
Geophysical well logging equipment

**Databases:**

OLGA (On Line Groundwater Archives) contains data on groundwater levels, chemical analyses, lithological and stratigraphical columns, pumping test results, geophysical well logs, geo-electrical measurements, geohydrological columns, salt and fresh water interface and temperature.

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**Personnel: 124 (4800)**

**Budget: 14.5 MIL US\$**

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**TNO Institute of Environmental and Energy Technology (TNO)**

Laan van Westenenk 501  
Apeldoorn NL-7300 AH  
Netherlands

Telephone: +31 55 49 3493

Telefax: +31 55 41 9837

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Netherlands

**Activities:**

Research

**Sectors:**

Outdoor air, Fresh water, Sediment, Soil

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**Keywords:**

10300 AIR POLLUTION  
12100 SOILS  
12148 SEDIMENTATION  
13000 FRESHWATER  
22130 INDUSTRIAL EMISSIONS  
25220 ENVIRONMENTAL MONITORING

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**Scope of the Measurements/Activities:**

The institute comprises the following departments: Environmental Technology; Fluid Dynamics; Heat and Refrigeration Technology; Air Pollution Control; Industrial Safety; and Chemical Engineering.

The Institute conducts R&D on apparatus, systems and working methods that contribute to sustainable development.

**ENVIRONMENTAL TECHNOLOGY**

R&D on processes, equipment and methods for the abatement or prevention of environmental pollution. Major topics of research include:

- processing of hazardous waste;
- waste recycling, including dismantling of complex products;
- remediation of polluted soils and sediments;

- purification of industrial effluents and groundwater;
- prevention of pollution by process-integrated measures of product developments.

#### **FLUID DYNAMICS**

- air pollution dispersion (obstacles, dense gas releases);
- wind engineering (wind hindrance, loading);
- wind energy (siting, wake effects, wind mapping, wind loading);
- industrial fluid dynamics (model experiments, computational fluid dynamics).

#### **HEAT AND REFRIGERATION TECHNOLOGY**

R&D and consultancy on domestic and industrial energy technology, heat pumps and refrigeration systems. Topics include:

- testing of domestic central heating boilers and heat recovery units;
- fouling of heat exchangers;
- modelling of energy conversion processes;
- heat pump and heat transformer development and application;
- new refrigeration cycles and fluids.

#### **AIR POLLUTION CONTROL**

R&D on combustion and gassification of waste and fossil fuels; development and consultancy on air pollution control. Research topics include:

- the incineration of domestic refuse and other waste;
- odour and air pollution abatement by biofiltration and other techniques;
- detection and analysis of odour;
- emissions from industrial installations, boilers and stoves.

#### **INDUSTRIAL SAFETY**

R&D on the reliability and safety of industrial installations, systems and processes, and of transport and storage facilities. Topics of research include:

- production, storage, transport and use of hazardous substances;
- reliability and maintainability studies of all kinds of technical equipment and complex systems; industrial safety studies; analysis of potential hazards and probability of incidents; risk analysis;
- risk and emergency management: studies of local or regional risks; development of tools for formulating industrial and governmental policies and for decision-making in case of calamities; case studies of accidents and environmental risks;
- development of decision support systems and expert systems for the maintenance of technical equipment, process safety and emergency management.

#### **CHEMICAL ENGINEERING**

R&D on new separation processes, with emphasis on the following areas:

- melt crystallization, membrane technology, new extraction and ad(ab)sorption processes.
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**Instrumentation:**

Laboratory and pilot-plant facilities based on physical and chemical technology;

Atmospheric boundary layer wind tunnels, air pollution dispersion computer models, 2D water flow circuit, double and triple hotwire anemometers, fibre optics Laser Doppler velocity/turbulence measurement equipment, thermistors for wind tunnel measurements of velocities, smoke generators, digital image processing software, computational fluid dynamics software;

Climate rooms, infra-red camera, test facilities for boilers and small heat recovery units;

Fluidized-bed furnace (0.4 mwth) for refuse incineration. Facilities for testing incineration equipment, gasifiers and air pollution control equipment. Emission monitoring van with various flue-gas analysers and data acquisition and control system. Special sampling trains for organic micro components (e.g. pah, pcdd/f). Mobile odour detection laboratory for organoleptic detection;

Software packages for risk analysis: effects (effects related to outflow, dispersion, explosion, etc.) and risk curves (individual risk contours and group risk curves); facts: industrial accidents databank containing data on a great many accidents involving hazardous substances;

Various pilot-plants for chemical engineering; explosion-proof test hall.

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**TNO Institute of Environmental Sciences (TNO)**

Schoemakerstraat 97  
Delft NL-2600 JA  
Netherlands

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Telefax: +31 15 616812

Telex:38071 zptnonl

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

Global

**Activities:**

Research  
Monitoring  
Assessment  
Data information management

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Marine water, Fresh water, Lithosphere, Sediment, Biosphere, Flora, Fauna, Cross media, Ecosystem  
Other: Materials

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**Keywords:**

10110 AIR QUALITY  
10418 CLIMATIC CHANGE  
12100 SOILS  
12148 SEDIMENTATION  
13000 FRESHWATER  
14142 MARINE POLLUTION

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**Activities Related to Measurements and Monitoring:**

- Giving international courses.
- Developing measuring strategies.
- Network design.
- Specification of monitors.
- Data acquisition and processing.
- QA QC.
- Data interpretation by making use of emission data and dispersion models.

**Scope of the Measurements/Activities:****ANALYTICAL CHEMISTRY**

Analytical research, development and services in the field of environmental and materials analysis. The department is operating under a strict quality system qualified by the Dutch laboratory certification authority. Areas of research include:

- characterization and quantification of industrial emissions;
- metal analyses with atomic spectroscopy and neutron activation analysis;
- organic (trace) compounds in air, water soil and biota from natural and anthropogenic sources e.g. dioxins in waste gases, terpenes, PCB, DMS;
- abiotic degradation and other GLP studies;
- DNA adducts from exposure to environmental contaminants;
- QA/QC services;
- development of reference materials and analytical standards;
- asbestos and man-made fibre analyses, particle characterization;
- trouble shooting.

**ENVIRONMENTAL CHEMISTRY**

Research into the behaviour and fate of pollutants, as well as their effects on the abiotic environment; the assessment of measures against pollution. Areas of research include:

- emission inventories and analyses for abatement purposes;
- environmental audits;
- physics and chemistry of pollutants (photo-chemical conversions and (acid) deposition);
- tropospheric chemistry;
- determination of measuring strategies; validation of dispersion models;
- environmental impact studies of emissions from traffic, industry and other sources;
- effects of air pollution on materials;
- policy studies of the effectiveness and cost of measures; model predictions of future developments;
- risk assessment.

**BIOLOGY**

Biological research into the environmental effects and impact of chemicals, products and waste:

- ecotoxicological and biodegradation testing of chemicals and products according to internationally accepted guidelines and OECD principles of Good Laboratory Practice;

- research into the effects of chemicals, polluted sediments, sludges, solid waste, oil and other substances on specific organisms, populations of organisms or on communities in model ecosystems under semi-natural conditions;
- development of methods for testing chemicals in aquatic, sediment or soil systems, including microbiological and cell-biological stress indicators;
- mathematical modelling for ecotoxicological purposes;
- biological monitoring of chemicals in rivers, lakes and offshore and field surveys for recordings of animal communities;
- risk analysis and risk assessment of ecological effects of chemicals in the (aquatic) environment and general environmental impact studies;

#### **ENVIRONMENTAL BIOTECHNOLOGY**

Research into the biotechnology abatement of toxic environmental emissions and the remediation of polluted air, water and soil. Development of sensors and monitoring systems. Electrochemical research. Research topics:

- biofilter research for cleaning air and off gases;
- biological treatment of domestic and industrial waste water;
- application of specialized micro-organisms and new reactor configurations using immobilized biofilms;
- testing of the behaviour of household chemicals in an experimental large scale domestic waste water purification plant;
- biocleaning of soils and solid wastes;
- sensor research and development for environmental and industrial monitoring systems;
- electrochemical energy storage, conversion and use (batteries and fuel cells);
- spontaneous heating of materials (coal, dried sludge, etc.);

#### **QA/QC Activities:**

Quality control system approved by the Dutch National Laboratory Accreditation Board (STERLAB)

OECD principles of Good Laboratory Practice (GLP)

National and international participation in inter laboratory comparison.

#### **Reference materials:**

User; Producer; Certifier; Supplier

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**Instrumentation:**

Gas generation systems for organic compounds at sub-ppb to ppm level, advanced gas chromatography and mass spectroscopy, field laboratory with mobile mass spectrometer, liquid chromatography with multiple detection systems, laser fluorescence instrumentation for sensitive and selective detection, special laboratory for handling extremely toxic samples and materials, atomic plasma emission and absorption spectroscopy, ultra clean laboratory for trace metal analysis, materials analysis by electron microscopy, X-ray micro analysis and FTIR-microscopic analysis. Instrument calibration facilities. (High-) precision (air) pollution detection equipment with automated data processing facilities. Software for environmental quality modelling, e.g. models for emissions, dispersion, chemical transformation, and exchange among air, water and soil.

Smog chambers for research into atmospheric chemistry. Instruments for measuring emissions and the dry deposition characteristics of pollutants. Culturing rooms; specialized equipment for ecotoxicological studies. Aquatic (fresh water and marine), benthic and tidal mesocosms of various sizes (up to semi-field scale). Mobile laboratory for research at sea.

Experimental facilities for waste water treatment up to 500 p.e. scale, laboratory fermenters, soil columns, land farm facilities, battery and fuel cell testing facilities, equipment for electrochemical conversion systems, confocal laser scan microscope, ellipsometer, microcalorimeter, optical and electrochemical sensors.

**Databases:**

Emission databases  
Various databases on atmospheric pollutants

**Programme Participation:**

IGBP. GEIA; IGAC. EUREKA. EUROTRAC. EC-DG-XI. ENVIRONMENT, MAST.

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**Personnel: 180**

**Budget: 17 MIL US\$**

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**TNO Study Centre for Environmental Research (TNO SCMO)**

Schoemakerstraat 97  
Delft NL-2600 JA  
Netherlands

Telephone: +31 15 69 6900  
Telefax: +31 15 61 3186

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Netherlands

**Activities:**

Policy development

**Sectors:**

Outdoor air, Soil

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**Keywords:**

10300 AIR POLLUTION  
12100 SOILS  
15236 ENVIRONMENTAL IMPACT ASSESSMENT  
22120 HAZARDOUS SUBSTANCES  
22472 WASTE DISPOSAL  
26116 ENVIRONMENTAL LAW

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**Scope of the Measurements/Activities:**

The Centre comprises the sections: Waste management and soil protection, Risk management, Effect and evaluation, and Air management, as well as a Bureau for Environmental Impact Assessment. Scope of activities:

Studies of the environmentally safe management of hazardous waste streams; the logistics of waste disposal and trends with regard to new material substitutions and small quantity generators. Emphasis is placed on waste reduction and minimization and policy studies.

Studies regarding risk assessment and risk management; management of control options; the role of the human factor in risk reduction; cost-effectiveness of control options; zoning-studies and management of industrial areas.

Social and legal studies for policy development, development of regulatory frameworks; evaluation of decision-making processes; studies regarding the corporate management of environmental issues.

Global integrated air pollution studies emphasizing management and control options; regional air quality studies.

Completion of integrated environmental impact studies; prediction of environmental impacts of future activities; environmental evaluation of governmental plan making.

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**University of Utrecht  
Department of Physical Geography (GISLA)**

Heidelberglaan 2  
Utrecht NL-3508 TC  
Netherlands

Contact: Prof. Dr. P. A. Burrough

Telephone: +31 30 532044

Telefax: +31 30 540604

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**Type of Organization:**  
Academic Organization

**Geographical Scope:**  
Regional  
Europe

**Activities:**  
Research  
Data/Information management

**Sectors:**  
Outdoor air, Fresh water, Sediment, Soil

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**Keywords:**  
10300 AIR POLLUTION  
12100 SOILS  
12148 SEDIMENTATION  
12164 SOIL DEGRADATION  
12168 SOIL EROSION  
13000 FRESHWATER  
13378 WATER POLLUTION  
25342 MODELLING AND SIMULATION  
28121 CARTOGRAPHY

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**Activities Related to Measurements and Monitoring:**

Publishing papers on environmental assessment using GIS and geostatistics and error propagation theory on subjects such as:

- Soil erosion and degradation,
- Soil and groundwater pollution,
- Atmospheric deposition studies.

**Scope of the Measurements/Activities:**

Research on the distribution, transport and deposition of pollutants in vegetation, soil and groundwater.

Description, mapping and quantitative modelling of changes in land use on the dynamic aspects of landscapes with respect to flooding, erosion, soil degradation and water pollution.

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**Instrumentation:**

Water quality analysis equipment, tensiometers, rainfall simulators, turbidity meters, soil chemical and physical measurement equipment, discharge and rainfall measurement, sediment samplers

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**Centre for International Climate and Energy Research (CICERO)**

**University of Oslo**  
**Oslo N-0316**  
**Norway**

**Contact:** Mr. Kjell Arne Hagen, Assistant Director

**Telephone:** +47 2 854286, 693177

**Telefax:** +47 2 856284

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Global

**Activities:**

Research  
Policy development

**Sectors:**

Outdoor air  
Other: Energy policy

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**Keywords:**

10418 CLIMATIC CHANGE  
16468 SOCIO-ECONOMIC FACTORS  
26200 INTERNATIONAL ENVIRONMENTAL RELATIONS  
27170 PUBLIC INFORMATION

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**Scope of the Measurements/Activities:**

Main task of the Centre:

- To develop basic knowledge required to initiate national and international policy on climate.
- To keep the country's politicians, public authorities, industry, educational institutions, media and public opinion, and the international policies on climate.

Fields of research:

- Alternative global regimes. Cost-effectiveness and economic consequences
- The role of international organizations and institutions
- Conflicts and compromises in international climate policy

- The link between climate change and development
- International law and different global regimes
- Climatic effect of alternative measures and of alternative technologies

CICERO was established in 1990 by the Norwegian Government to form part of a world-wide research effort in support of climate and energy related multilateral co-operation. CICERO is participating, in the work of the UN Intergovernmental Panel on Climate Change (IPCC).

**Programme Participation:**

IPCC

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**Directorate for Nature Management (DN)**

Tungasletta 2  
Trondheim N-7005  
Norway

Contact: Mr. Peter Johan Schei, General director

Telephone: +47 7 58 05 00

Telefax: +47 7 91 54 33

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Norway

**Activities:**

Policy development

Management and Enforcement

**Sectors:**

Outdoor air, Fresh water, Soil, Biosphere, Cross media, Flora, Fauna,

Ecosystem, Environment and development

Other: Terrestrial environment. Outdoor recreation

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**Keywords:**

12000 TERRESTRIAL ECOSYSTEMS

14226 COASTAL AREAS

14370 MARINE ECOSYSTEMS

15236 ENVIRONMENTAL IMPACT ASSESSMENT

25235 FRESHWATER MONITORING

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**Activities Related to Measurements and Monitoring:**

DN runs several monitoring programmes:

- monitoring programme for terrestrial ecosystems (TOV)
- monitoring programme for seabird populations
- monitoring programme for moose, deer and wild reindeer
- integrated ecological monitoring for coastal waters in the Nordic countries (planned)

- Soviet-Norwegian environmental studies in Soer-Varanger
- national monitoring of water chemistry in rivers
- monitoring programme for Long Range Transboundary Air

**Scope of the Measurements/Activities:**

Monitoring of changes on the natural ecosystem and the impact of human activities. The programmes mentioned under Measurement help our organisation to manage natural resources (i.e. to maintain biological diversity, hunting, fishing and outdoor recreation). Some programmes are designed to discover the effects of pollution (early warning).

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**Databases:**

NATURBASE: Database on National Parks, protected areas, habitats, observation of endangered species and recreational areas.

**Publications:**

- "Directorate for Nature Management" (leaflet)
  - "Keeping an eye on nature" (leaflet)
- 

**Personnel: 120**

**Budget: 40 MIL US\$**

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**Geological Survey of Norway (NGU)**

**Lade**  
**Norway**

**Contact:** Mr. Bjoern Boelviken

**Telephone:** + 47 7 904011

**Telefax:** + 47 7 921620

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
National  
Norway

**Activities:**  
Monitoring  
Data/Information management

**Sectors:**  
Sediment, Rock

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**Keywords:**  
12148 SEDIMENTATION  
25148 POLLUTANT DISTRIBUTION  
26232 INTERNATIONAL STANDARDISATION  
28121 CARTOGRAPHY  
28137 GEOLOGY

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**Activities Related to Measurements and Monitoring:**

Within the framework of Western European Geological Surveys (WEGS) a programme has been started in order to develop, improve and harmonize the techniques and practices of sampling and chemical analysis of river plain sediments as well as preparation of sample archives, databases and maps of the elements determined.

**Scope of the Measurements/Activities:**

Based on a harmonized technique 30.000 samples from 10.000 localities all over Europe are planned to be collected and analysed in order to:

- map the natural distribution of chemical elements present in Western Europe
- provide data on the present state of pollution in the surface environment
- prepare systematic geochemical information (database) for environmental and economic research and planning

The following research projects are planned utilizing the data obtained in the mapping project:

- pollution studies
  - geomedicine, agriculture, forestry, water resources and land use planning
  - crustal and metallogenic provinces
  - budgets for chemical and sediment transport
- 

**Instrumentation:**

Equipment for chemical analysis

**Meetings:**

- May 1991, project meeting in Heerlen (The Netherlands)
  - Sept. 1991, project meeting in Uppsala (Sweden)
  - Nov. 1991, project meeting in Hannover
  - Aug. 1991, meeting of the WEGS directors (Switzerland)
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**Institute of Marine Research (IMR)**

Bergen N-5024  
Norway

Contact: Mr. Roald Saetre, Research director

Telephone: +47 5 23 85 00

E-Mail: roaldsimr.no

Telefax: +47 5 23 85 84

Telex:42297 OCEAN N

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional  
North-east Atlantic

**Activities:**

Monitoring  
Assessment  
Research

**Sectors:**

Hydrosphere, Marine water, Biosphere, Flora, Fauna, Cross media, Ecosystem

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**Keywords:**

14142 MARINE POLLUTION  
14370 MARINE ECOSYSTEMS  
14375 MARINE RESOURCES CONSERVATION  
25250 MARINE MONITORING  
25348 MONITORING EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

Environmental research within the framework of internationally accepted procedures like the International Council for Exploration of the Sea (ICES).  
Participation in international symposia.  
Participation in international intercalibration.

**Scope of the Measurements/Activities:**

- Monitoring for trend analyses and early warning
- Process studies and verification of models
- Monitoring of pollutant levels
- Monitoring ocean climate
- Monitoring primary and secondary production
- Building and validation of models

**QA/QC Activities:**

- Institutional QA programme
- International QA programme via the EEC
- Interlaboratory comparison exercises (currently working to improve QC procedures)

**Reference materials:**

- User

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**Instrumentation:**

- Research vessels (4)
- Fixed network of sampling stations
- Moored buoys, drifting buoys
- Laboratory equipment for chemical analyses
- Plankton gears
- CTD-sonde with sampler
- Grabs and box corer

**Databases:**

- Ingress Relational Database, containing all IMR's physical, chemical and biological data.

**Programme Participation:**

- MAST 11. WOCE. GLOBEC.

**Publications:**

- Havforskningsinstituttet, Institute of Marine Research (leaflet)
- Annual reports

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**Personnel: 450**

**Budget: 40 MIL US\$**

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**Norwegian Forest Research Institute (NISK)**

Hoegskoleveien 12  
Aas N-1432  
Norway

Contact: Mr. Kare Venn, Professor

Telephone: +47 64 94 90 00

Telefax: +47 64 94 89 71

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Norway

**Activities:**

Monitoring  
Research

**Sectors:**

Lithosphere, Soil, Biosphere, Flora, Cross media, Ecosystem

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**Keywords:**

10310 ACID RAIN  
10418 CLIMATIC CHANGE  
12100 SOILS  
12400 TEMPERATE AND COLD ZONE ECOSYSTEMS  
12728 ECOLOGICAL BALANCE  
13000 FRESHWATER  
25220 ENVIRONMENTAL MONITORING  
28133 FORESTRY

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**Activities Related to Measurements and Monitoring:**

Development of better techniques for diagnosis of forest damage and monitoring the impact of pollution on forest ecosystems.

**Scope of the Measurements/Activities:**

Monitoring programme for forest damage (international).  
Pilot programme on integrated monitoring (international).  
Monitoring of forest damage in the eastern region of Finmark, Norway  
(bilateral Norway, USSR).  
Monitoring programme for terrestrial ecosystems (national).  
Nitrogen saturation experiments, NITREX (international).  
Critical loads (international).

**QA/QC Activities:**

Laboratory intercalibrations (including EN45001 and ISO IEC guide 25).  
UN ICP-FORERT intercalibration courses.

**Reference materials:**

Producer

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**Instrumentation:**

Standard chemical analytical techniques (ICP, IC, HPLC, FIA, AA etc.)  
Collecting instruments for rain, litterfall and soil water.

**Programme Participation:**

International co-operative programme on assessment and monitoring of air  
pollution and its effects on forestry.

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**Norwegian Institute for Air Research (NILU)**

Lillestrom N-2001  
Norway

Contact: Mr. Harald Dovland, Director

Telephone: 47 638 14170

Telefax: 47 638 19247

Telex:74854 nilu n

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

Regional  
Europe

**Activities:**

Research  
Monitoring  
Data/Information management

**Sectors:**

Outdoor air

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**Keywords:**

10170 OZONE LAYER  
10300 AIR POLLUTION  
10310 ACID RAIN  
10454 GREENHOUSE EFFECT  
22102 AEROSOLS  
25342 MODELLING AND SIMULATION

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**Activities Related to Measurements and Monitoring:**

Within the "Cooperative programme for monitoring and evaluation of long-range transmission of air pollution in Europe" (EMEP), NILU :

- issues guidelines ("manual") for sampling and chemical analysis (mainly sulphur and nitrogen compounds in air and precipitation).
- undertakes interlaboratory tests between about 30 participating laboratories.
- organizes field intercomparisons of different measurement methods for air pollutants.
- organizes workshops within EMEP on topics related to measurements and chemical analysis as well as on quality assurance.
- National surveillance programmes.

Chemical labs including:

- Ion chromatographs
- Inductively coupled plasma mass spectrometer (ICP-MS)
- Gas chromatographs
- High pressure liquid chromatograph
- High resolution mass spectrometer

**Scope of the Measurements/Activities:**

Pollutant monitoring

Development, application and verification of dispersion models

**QA/QC Activities:**

Laboratories accredited according to EN-45001.

National interlaboratory intercomparisons.

WHO intercomparison for SO<sub>2</sub>, GEMS/Air Audit.

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**Instrumentation:**

Precipitation samplers, sequential samplers for gases (absorbing solutions and impregnated filters) and aerosols (filters)

Continuously recording monitors for NO<sub>x</sub>, SO<sub>2</sub>, CO, O<sub>3</sub>.

**Databases:**

EMEP, HELCOM-EGAP and EASOE.

**Programme Participation:**

EUROTRAC/TOR; EMEP; PARCOM; AMAP; EUROCARE.

**Publications:**

NILU Information Jan. 1991

Annual Reports (mainly in Norwegian).

EMEP/CCC Reports.

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Personnel: 115

Budget: 85 MIL. NOK

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**Norwegian Institute for Nature Research (NINA)**

Tungasletta 2  
Trondheim N-7005  
Norway

Contact: Mr. Karl J. Baadsvik, General director

Telephone: 580500  
Telefax: 915433

E-Mail: Lars.Kvenild@nina.no  
Telex: 65065 NINA.N

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

Regional  
East Europe  
Africa  
Central America  
Norway

**Activities:**

Monitoring  
Research  
Assessment  
Data/Information management

**Sectors:**

Hydrosphere, Marine water, Fresh water, Lithosphere, Soil, Biosphere, Flora,  
Fauna, Human, Ecosystem, Environment and development  
Other: Ecology, i.e. pollutants, monitoring, population dynamics

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**Keywords:**

10418 CLIMATIC CHANGE  
12000 TERRESTRIAL ECOSYSTEMS  
21384 RADIOACTIVITY  
22124 HEAVY METALS  
25180 POLLUTION MONITORING  
25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

Ongoing development and improvement of research techniques and methods based on international practices within ecological research.  
Research related to: population and community ecology and the interaction between ecology and humane systems.  
Activities: pollution studies, land use change, conservation biology, sustainable resource use and recreational use of nature.

**Scope of the Measurements/Activities:**

Pollutant control monitoring in terrestrial and aquatic/marine ecosystems and early warning systems.  
Climate change with respect to ecosystems and components.  
Human impact in ecosystems (hunting, fishing, encroachments, etc.).  
Building of reference materials/data banks in ecology.  
Verification of models in ecology (e.g. population dynamics).  
Habitat use.  
Effects of harvest of renewable resources.  
Monitoring of threatened species of plants and animals and of genetic resources.

**Reference materials:**

User

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**Instrumentation:**

Telemetry, both traditional and satellite.  
Laboratory instruments for measuring: metals, including heavy metals, radioactivity, organic carbon, colometric analysis, genetic variations, fibre content, age determination of animals by tooth-slicing, nitrogen content (Kjeldal), etc.  
Radio tagging and tracking.  
AAS and microscopic techniques.

**Programme Participation:**

EC's environmental programmes. Bilateral agreements e.g. Norway - Russia

**Publications:**

NINA (leaflet)

**Meetings:**

Feb 11-13 Trondheim, Workshop on identifying fish farm escapes and wild salmon  
June 11-14 Trondheim, International expert meeting in Global Change and Terrestrial Ecosystems (GCTE)

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**Personnel:** 165

**Budget:** 15 MIL US\$

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**Norwegian Institute for Water Research (NIVA)**

Oslo 8 N-0808

Norway

Contact: Mr. Haakon Thaulow, Director General

Telephone: +47 22 23 52 80

Telefax: +47 22 39 41 89

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**Type of Organization:**

Non-Governmental Organization

National

**Geographical Scope:**

National

Norway

**Activities:**

Monitoring

Policy development

Research

**Sectors:**

Marine water, Fresh water, Sediment, Biosphere

Other: Industrial effluent and sewage

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**Keywords:**

00000 ECOTOXICOLOGY

10310 ACID RAIN

13000 FRESHWATER

13196 WATER RESOURCES DEVELOPMENT

14226 COASTAL AREAS

14278 ESTUARINE ECOSYSTEMS

21336 EUTROPHICATION

22144 MICROPOLLUTANTS

22364 POLLUTION CONTROL TECHNOLOGY

25235 FRESHWATER MONITORING

25270 WATER QUALITY

26200 INTERNATIONAL ENVIRONMENTAL RELATIONS

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**Activities Related to Measurements and Monitoring:**

Protection and utilization of water and water bodies.

NIVA deals with water related questions connected to fresh water, estuaries and the coastal zone.

Research and development activities, e.g. connected with water regulation, industry, acid rain, eutrophication, climate, micropollutants, transport and water resources management.

The chemical/biological laboratories are reference laboratories for other Norwegian labs working with water analysis. The Institute participates in international programmes like the ECE programme, International Cooperative Programme on Assessment and Monitoring of Acidification in Rivers and Lakes where NIVA is the Programme Centre, and several EEC programmes, such as Nitrex, Climex, AIPE etc.

NIVA performs intercalibration and is responsible for the harmonization of methods in several of the mentioned programmes.

**Scope of the Measurements/Activities:**

Long term trends and changes essential to the national state pollution monitoring programme, models for effects of long range transport pollutants are also important. Local pollution control abatement strategies and remedial action are goals of NIVA.

**QA/QC Activities:**

NIVA laboratories are qualified according to Norwegian Quality Assurance rules.

**Reference materials:**

User

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**Instrumentation:**

Covering a wide range of instruments, from manual sampling and laboratory analyses, to automatic continuous measurement with automatic transfer of data to the institute from field stations.

**Programme Participation:**

UN-ECE. EC Environmental Research Programme. North Sea Task Force.

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**Norwegian Meteorological Institute (DNMI)**

Oslo N-0313  
Norway

Contact: Mr. Bjoern Aune

Telephone: +47 22 963000

Telefax: +47 22 963050

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Norway

**Activities:**

Research

Monitoring

**Sectors:**

Outdoor air, Marine water, Snow/Ice

Other: Sea ice

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**Keywords:**

10110 AIR QUALITY

10418 CLIMATIC CHANGE

25245 LONG-TERM TRENDS AND FORECASTING

25250 MARINE MONITORING

28157 METEOROLOGY

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**Activities Related to Measurements and Monitoring:**

Measurement activities (including archiving of data and distribution of data and data products)

**Meteorology:**

- standard synoptic measurements
- radiosonde measurements
- automatic weather stations

**Sea Ice:**

- mapping and forecasting

**Scope of the Measurements/Activities:**

Weather and climate monitoring, forecasting and research

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**Instrumentation:**

Standard meteorological instruments

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**Norwegian Ocean Monitoring and Forecasting Centre (HOV)**

Allegaten 70  
Bergen N-5007  
Norway

**Contact:** Mr. Johannes Guddal

**Telephone:** +47 55 236 600

**Telefax:** +47 55 236 661

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Norway

**Activities:**

Monitoring

Coordination

**Sectors:**

Outdoor air, Marine water

Other: Forecasting

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**Keywords:**

25245 LONG-TERM TRENDS AND FORECASTING

25250 MARINE MONITORING

28157 METEOROLOGY

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**Activities Related to Measurements and Monitoring:**

HOV is a project integrated in the Norwegian Meteorological Institute.

Coordination of marine monitoring information.

Use of data transmitted in real time mode to predict preface forecast of oceanographic conditions.

Exchange of data with communities abroad via the Global Telecommunication System, GTS of World Weather Watch, WWW, IGOSS and FDP from ERS-1.

**Scope of the Measurements/Activities:**

Network strategy and data assimilation.  
Advice and design of local systems.

**QA/QC Activities:**

Overall system quality assurance/control.

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**Databases:**

De-centralised to several institutes.

**Programme Participation:**

Remote Sensing Applications (ERS-1, Sea Star).

**Publications:**

"Technical Conference on Space Based Ocean Observation", to be published  
in proceedings of WMO/IOC.  
Posters and reports available at HOV.

**Meetings:**

Technical Conference on Space Based Ocean Observation.

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**Personnel: 7**

**Budget: 8 MIL NoK**

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**State Pollution Control Authority (SFT)**

Stroemsveien 96  
Oslo N-0032  
Norway

Contact: Dr. Berit Kvaeven, Section head

Telephone: +47 22 573400

Telefax: +47 22 676706

Telex: 76684sft

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Norway

**Activities:**

Policy development  
Management and Enforcement  
Coordination  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Marine water, Fresh water, Snow/Ice,  
Biosphere, Flora, Fauna, Cross media, Food, Ecosystem,  
Environment and development

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**Keywords:**

10418 CLIMATIC CHANGE  
25000 MONITORING AND ENVIRONMENTAL DATA  
26160 POLLUTION CONTROL REGULATIONS

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**Activities Related to Measurements and Monitoring:**

No environmental measurements are performed directly by SFT, but a great number of measurements for SFT use are commissioned by SFT to various institutes.

Promotion of harmonization through contracting research institutes and other organisations working for SFT.

Maintaining active contact with the Norwegian Standards Association

SFT is the pollution control authority of the Ministry of the Environment, playing an important role in combating pollution, waste and noise. SFT is responsible for measures against industrial pollution, overseeing the national oil pollution emergency services and administering the Product Control Act. SFT acts as the technical advisory agency for the ministry and is generally responsible for monitoring atmospheric and aquatic pollution as well as issuing guidelines for the county departments of environmental affairs concerning agriculture and municipal and hazardous waste and fish farming. This includes taking an active interest in stimulating relevant research.

**Scope of the Measurements/Activities:**

- Pollution control monitoring
- Early warning and vigilance systems
- Observation of climate change
- Development and control of reference materials
- Identification of pollution sources
- Verification of models

These measures are to ensure that government goals are met, in both short and long term, as well as watching closely international and local developments.

**QA/QC Activities:**

The consulting institutes and laboratories are required to be accredited by the Directorate for Measurement Techniques (Oslo), which is based on the EN 45000 standards (ISO 9000)

**Reference materials:**

User; Producer

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**Instrumentation:**

The best internationally available equipment.

**Databases:**

For internal use:

**MUNIN:** Data on yearly pollution emissions and discharges, wastes and environmentally hazardous products and components. Established in 1991, with the second edition including data on environmental quality, due for completion in 1994.

**INKOSYS:** Administrative system on contents and established discharge limits from industrial plants and SFT's corresponding control.

**DEPONI:** Mapping and classification of hazardous waste disposal sites and contaminated land, as basis for priority making and remedial actions.

**Database for acute pollution:** Survey of all acute pollution cases reported to SFT and the measures taken.

**Programme Participation:**

Arctic Monitoring and Assessment Programme (AMAP). North Sea Task Force (NSTF); Joint Monitoring Programme (JMP). Monitoring of the ozone layer in the atmosphere (related to EASOE). Long range transported air pollution (EMEP). ECE task forces and programmes for effects on materials. Atmospheric inputs of pollutants to the North Sea (ATMOS). Environmental cooperation between Norway and Russia. EUROMAR (oceanic part of EUREKA). Financial contribution to SEAWATCH (a EUROMAR project)

**Publications:**

"The Future is now!" a summary of SFT's long-term planning 1990-93

"Organization and Responsibilities" a description of SFT's working departments.

A whole range of guidelines, regulations, monitoring results and other reports.

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**Personnel: 240**

**Budget: 377 MIL. NOK**

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**Ministry of Health  
Directorate General of Health Affairs  
Department of Environmental Health and Malaria Eradication**

Muscat 113  
Oman

Contact: Dr. Abdullah bin Rashid Al Mandhry, Director

Telephone: +00 968 562 898

Telefax: +00 968 563 121

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Oman

**Activities:**

Policy development

Monitoring

**Sectors:**

Fresh water, Food

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**Keywords:**

0000 MONITORING RESULTS ASSESSMENT

13378 WATER POLLUTION

13420 DRINKING WATER

13430 DRINKING WATER TREATMENT

15107 ENVIRONMENTAL MANAGEMENT

16450 PUBLIC HEALTH AND SANITATION

22120 HAZARDOUS SUBSTANCES

22128 INDUSTRIAL EFFLUENTS

22150 MUNICIPAL WASTE

22184 TOXIC SUBSTANCES

22456 SEWAGE TREATMENT SYSTEMS

23124 ENVIRONMENTAL HEALTH HAZARDS

23300 WORKING ENVIRONMENT

23330 OCCUPATIONAL HEALTH

23345 OCCUPATIONAL SAFETY

23430 FOOD CONTAMINATION

25220 ENVIRONMENTAL MONITORING

25270 WATER QUALITY  
26116 ENVIRONMENTAL LAW  
26160 POLLUTION CONTROL REGULATIONS  
29304 ARABIC  
29317 ENGLISH  
30332 OMAN

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**Activities Related to Measurements and Monitoring:**

Drinking water surveillance.  
Food control and safety.  
Occupational health and safety.  
Toxic and hazardous substances control.  
Vector control.  
General environmental health and sanitation.  
National and international meeting participation.  
National and international health coordination.  
Participation in the development of standards.  
Chemical and bacteriological analysis of drinking water.  
Measurement of occupational health environment.

**Scope of the Measurements/Activities:**

Pollutant control for health monitoring.

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**Databases:**

Water Quality of Drinking Water Sources in Oman.  
Hygiene Conditions of Food Premises in Oman.

**Meetings:**

WHO Regional Drinking Water Quality Seminar Measurement Procedures for  
Drinking Water Quality Cyprus, (Nicosia) 19-23 May 1991.

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**Ministry of Water Resources**

**Ruwi 112**

**Oman**

**Contact:** Mr. L. G. Hutton, Head of Water Quality Laboratory

**Telephone:** +968 56 19 05 +968 56 19 14

**Telefax:** +968 56 32 64

**Telex:**3629 mwron

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Oman

**Activities:**

Policy development

Management and Enforcement

Coordination

Research

Monitoring

Assessment

Data/Information management

**Sectors:**

Hydrosphere, Marine water, Fresh water, Lithosphere, Sediment, Rock

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**Keywords:**

13188 WATER RESOURCES CONSERVATION

13196 WATER RESOURCES DEVELOPMENT

13391 WATER SALINATION

25220 ENVIRONMENTAL MONITORING

25225 ENVIRONMENTAL STATISTICS

28140 GEOTECHNOLOGY

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**Activities Related to Measurements and Monitoring:**

Report publishing.  
Data gathering.  
Issue of well permits.  
Water Resources Assessment.  
Water Resources Management.

**Scope of the Measurements/Activities:**

Early warning of salinity increases.  
Geochemistry.

**QA/QC Activities:**

Internal QA programme.  
QA/QC manager and technician.  
WRc (UK) Aquacheck samples for interlaboratory comparison.

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**Instrumentation:**

AAS, ICP, IC, GLC, FIA and TOC.  
Ion-Selective electrodes.  
UV and Visible Spectroscopy.

**Databases:**

Database based on Boland Paradox Database.

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**Personnel: 900 +**

**Budget: 30 MIL US\$ +**

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**International Potato Centre (CIP CGIAR)**

Lima 100  
Peru

**Contact:** Dr. Jose Luis Rueda, Coordinator of Andean Natural Resources

**Telephone:** + 51 14 366920

**Telefax:** + 51 14 351570

**Telex:** 25672 pe

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional

Andean Eco-region

**Activities:**

Research

**Sectors:**

Lithosphere, Soil, Biosphere, Flora, Fauna, Cross media, Food, Ecosystem,  
Environment and development, Environment and social conditions

Other: CGIAR Centre

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**Keywords:**

12104 AGRICULTURAL LAND

15284 SUSTAINABLE DEVELOPMENT

17106 AGRICULTURAL MANAGEMENT

23418 FOOD

28104 AGRICULTURAL ENGINEERING

28132 FOOD SCIENCE AND TECHNOLOGY

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**Activities Related to Measurements and Monitoring:**

CIP Have established the "Consortium for Sustainable Management of Andean Natural Resources" (CONDESAN), through which research on sustainable agricultural production will be carried out.

**Scope of the Measurements/Activities:**

Long term modelling and monitoring of alternative land use systems.

**Reference materials:**

User; Producer

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**Programme Participation:**

Potato and sweet potato research and development worldwide: responsibility given as a member of the CGIAR.

**Meetings:**

Annual reviews.

Programme planning.

Planning conferences (publications available on request).

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**Pan American Centre for Sanitary Engineering and  
Environmental Sciences (CEPIS)**

Los Pinos 259  
Lima 12  
Peru

Contact: Mr. Alberto Florez Munoz, Director

Telephone: +51 14 371077      E-Mail: INTERNET: cepis@cepis.pe  
Telefax: +51 14 378289      Telex:21052 pe

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**Type of Organization:**  
United Nations Organization

**Geographical Scope:**  
Regional  
Latin America  
Caribbean

**Activities:**  
Coordination  
Education  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**  
Atmosphere, Outdoor air, Hydrosphere, Marine water, Fresh water,  
Biosphere, Human, Cross media, Ecosystem, Environment and development,  
Environment and social conditions  
Other: Environmental Health

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**Keywords:**  
13400 DRINKING WATER SUPPLY AND SANITATION  
16450 PUBLIC HEALTH AND SANITATION  
22440 SANITARY LANDFILLS  
23124 ENVIRONMENTAL HEALTH HAZARDS  
25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

As a multinational technological centre, one of CEPIS's fundamental purposes is to provide technical and scientific assistance in the sanitary engineering and environmental sciences field in the region of the Americas. Efforts are made to promote and develop programmes considering interdisciplinary solutions for the environmental problems.

Such programmes take in to account the circumstances of each country, especially its socio-economic conditions and its institutional infrastructure. CEPIS executes and encourages the development of research applied to the environment, both in the countries themselves and in the Centre's headquarters. It also collaborates in the development of human resources in the countries, through courses and special training programmes given at the Centre. CEPIS participates in training programmes in the institutions working in this field.

**Scope of the Measurements/Activities:**

Improvement and surveillance of drinking water quality.

Identifying appropriate technologies to provide water and sanitation to marginal urban areas.

Efficient management of domestic solid wastes.

Efficient reuse of treated waste water in aquaculture and agriculture.

Monitoring environmental pollution, with emphasis on Surface and ground water pollution and hazardous wastes.

**Reference materials:**

User; Producer

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**Instrumentation:**

Computers and microfiches

**Databases:**

The bibliographic database of REPIDISCA assembles the documents of the cooperating centres and those of the CEPIS library with 75 000 registers and 5 000 new entries each year.

The library at CEPIS is the most updated in the region with over 22 000 volumes present.

The services provided by the library are; bibliographic search, reprography, REPINDEX, TABCONT, and provision of the REPIDISCA database in CDROM.

**Programme Participation:**

CEPIS is the regional coordinating centre of the Pan-American Network of Information and Documentation in Sanitary Engineering and Environmental Science (REPIDISCA).

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**Personnel:** 56

**Budget:** CEPIS and extra-budgetary funds

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**Environmental Management Bureau  
Department of Environment and Natural Resources**

6th Floor Heart Centre Building  
East Avenue  
Quezon City  
Philippines

Contact: Mr. Rodrigo U. Fuentes, Director

Telephone: +632 973 254

Telefax: +632 973 254

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Philippines

**Activities:**

Policy development  
Coordination  
Education  
Management and Enforcement

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Biosphere

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**Keywords:**

10110 AIR QUALITY  
25270 WATER QUALITY  
25366 SAMPLING TECHNIQUES  
26160 POLLUTION CONTROL REGULATIONS

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**Activities Related to Measurements and Monitoring:**

Coordinates interlaboratory exercises  
Conduct analyses of reference materials and standards  
Conducts intercalibration of field measurements  
Conducts training for laboratory analysis  
Sets standards for air and water quality

**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Early warning or vigilance systems  
Observation of climate change  
Development and control of reference materials  
Identification of pollution sources  
Verification of models  
Air and water quality monitoring

**Reference materials:**

User

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**Instrumentation:**

Atomic absorption spectrophotometer; Gas chromatograph; Ion chromatograph; UV spectrophotometer; Kjeldahl apparatus; pH meter; Turbidimeter; Conductivity meter; Salinometer; Analytical weighing balance; Autoclave; BOD incubator; Bacteriological incubator; Mercury analyzer; Jar tester; Colony counter; Microscope; Bomb calorimeter; High performance liquid chromatograph; Spectrofluorometer; Ambient carbon monoxide monitor; Ambient hydrocarbon monitor; Anemometer; High volume sampler; High volume 10-microns cut sampler; Stack sampling equipment; Sound level meter, Three gas (ammonia, carbon dioxide, sulphur dioxide) sampler

**Meetings:**

Regional Consultative Fora for United Nations Conference on Environment and Development (UNCED), June - July 1991  
Conference on Hazardous Wastes, September 6-8, 1991  
Workshop on Chemical Substances, October 6-8, 1991

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**Environmental Management and Protected Areas Sector Department  
of Environment and Natural Resources  
National Capital Region.**

**EL-AI Building, 100 Quezon Avenue  
Quezon City 1101  
Philippines**

**Contact:** Mr. Arthur S. Garcia, Regional Technical Director

**Telephone:** 731 77 31

**Telefax:** 731 73 46

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Subnational

Capital Region (Metro-Manila)

**Activities:**

Management and Enforcement

Monitoring

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Fresh water

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**Keywords:**

10110 AIR QUALITY

22100 POLLUTANTS

25132 NOISE MONITORING

25172 POLLUTANT SOURCE IDENTIFICATION

25270 WATER QUALITY

26116 ENVIRONMENTAL LAW

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**Activities Related to Measurements and Monitoring:**

Holding regular inter-office meetings.

Preparing and conducting policy studies on existing guidelines.

**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Warning system  
Identification of pollutant sources  
Enforcement of air and water quality standards

**QA/QC Activities:**

Yearly quality assurance of BOD by conducting sample test measurements

**Reference materials:**

User

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**Instrumentation:**

Air:

-High volume sampler  
-SO<sub>2</sub> sampler  
-PM<sub>10</sub> sampler

Water:

-pH meter  
-DO meter  
-Atomic absorption spectrophotometer

Noise:

-Noise meter

**Programme Participation:**

GEMS joint undertaking with foreign based studies.

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**Environmental Management and Protected Areas Service (EMPAS)**

Marcos building  
San Fernando La Union  
Philippines

Contact: Mr. Mariano T. Machacon, Regional Technical Director

Telephone: + 63 41 47 87

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
National  
Philippines

**Activities:**  
Policy development  
Management and Enforcement  
Monitoring  
Assessment

**Sectors:**  
Outdoor air, Indoor air, Fresh water, Sediment, Flora, Fauna, Food,  
Ecosystem, Environment and development, Environment and social  
conditions, Atmosphere, Hydrosphere, Lithosphere, Biosphere,  
Cross media

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**Keywords:**  
15236 ENVIRONMENTAL IMPACT ASSESSMENT  
25255 POLLUTION CRITERIA  
26000 ENVIRONMENTAL LAW AND INSTITUTIONS  
26116 ENVIRONMENTAL LAW

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**Activities Related to Measurements and Monitoring:**

Implementation of Environmental Laws and Regulations:

- Air quality monitoring
- Water quality monitoring
- Environmental impact assessment
- Permit processing (pollution)
- Legal hearing of pollution cases
- Investigation of pollution complaints

**Scope of the Measurements/Activities:**

Pollution control monitoring  
Ambient quality  
Identification of pollution sources

**QA/QC Activities:**

Sampling for compliance monitoring of DENR standards.

**Reference materials:**

User; Producer

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**Instrumentation:**

Spectrophotometer  
pH Meter  
High Volume Air Samples  
EC/TDS Meter  
Hotpack Incubator

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**Metropolitan Waterworks and Sewerage System (MWSS)  
Applied Research and Quality Control Department (ARQCD)  
Central Laboratory Division (CLD)**

Katipunan Road  
Balara  
Quezon City 1101  
Philippines

Contact: Mrs. Concepcion M. Masanga, Manager A

Telephone: +63 2 96 82 72 +63 2 95 32 11  
Telefax: +63 2 921 2887

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Subnational  
Metropolitan Manila Area

**Activities:**

Monitoring

**Sectors:**

Fresh water, Flora, Ecosystem

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**Keywords:**

13430 DRINKING WATER TREATMENT  
13460 SEWAGE TREATMENT PLANTS  
13480 WATER TREATMENT  
22180 SOLID WASTES  
22456 SEWAGE TREATMENT SYSTEMS  
25270 WATER QUALITY

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**Activities Related to Measurements and Monitoring:**

Water quality monitoring in the distribution network process and control of effluent quality monitoring of sewage treatment plants.  
Evaluation of products used in water and waste water treatments.

**Scope of the Measurements/Activities:**

Pollutant control monitoring.

**QA/QC Activities:**

International QA programme participated in.

**Reference materials:**

Certifier

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**Instrumentation:**

Gas Chromatograph  
Atomic Absorption Spectrophotometer  
Milton Roy Spectrophotometer  
Tecator Analyzer  
Turbidimeter  
pH Meters

**Programme Participation:**

Global Environment Monitoring System (GEMS).

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**National Power Corporation (NAPOCOR)  
Environmental Management Department (EMD)**

Quezon Avenue  
Quezon City  
Philippines

Contact: Resurreccion L. Petel, Department Manager

Telephone: +921 27 93

Telefax: +921 27 93

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Philippines

**Activities:**

Policy development  
Management and Enforcement  
Coordination  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Marine water, Fresh water, Lithosphere, Sediment, Soil, Biosphere, Flora, Fauna, Human, Cross media, Food, Ecosystem, Environment and development, Environment and social conditions

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**Keywords:**

16278 NUCLEAR RESEARCH AND POWER CENTRES  
25132 NOISE MONITORING  
25220 ENVIRONMENTAL MONITORING  
25348 MONITORING EQUIPMENT

---

**Activities Related to Measurements and Monitoring:**

Performs environmental monitoring of all operating Corporation power plants for air, water and soil quality and for noise and biota levels.  
Performance and administration of environmental research on the environmental impacts of the operating power plants.  
Performance of environmental impact assessments of the power plants.  
Performance of laboratory and chemical analyses of environmental samples.  
Establishment and standardization of environmental monitoring and laboratory procedures.

**Scope of the Measurements/Activities:**

Pollution control monitoring.  
Early warning and compliance to standards.  
Verification of models.  
Environmental impact statements.

**QA/QC Activities:**

Participation in interlaboratory comparison exercises.  
Regulatory review

**Reference materials:**

User

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**Instrumentation:**

Air and water quality monitoring equipment  
Flow and current meters  
Noise meters  
Meteorological instruments  
Emission testers  
Soil sediment and biota samples  
Radioactivity monitoring devices  
Computers  
Microscopes  
Laboratory equipment includes Dionex, GC, Fuel analyzer, pH meters, ovens, hoods, spectrometers, balances, distilling apparatus, hot plates, shakers, centrifuges and titrimeters.

**Databases:**

Baseline Power Plant Site Informations

**Programme Participation:**

Interlaboratory comparisons.

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**Personnel: 74**

**Budget: 2 MIL US\$**

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**Natural Sciences Research Institute (NSRI)**

Diliman  
Quezon City 1101  
Philippines

Contact: Ms. Bellaffor P. Gonzales, University Researcher

Telephone: +63 2 97 57 36/ 97 57 74/ 99 50 71/ 98 96 76

Telefax: +63 2 99 68 68

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Philippines

**Activities:**

Research

**Sectors:**

Marine water, Fresh water, Sediment, Soil, Flora, Fauna, Food, Ecosystem,  
Hydrosphere, Lithosphere, Biosphere, Cross media

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**Keywords:**

12800 MICROBIAL RESOURCES AND BIOTECHNOLOGIES  
28135 GENETIC ENGINEERING  
28157 METEOROLOGY  
28158 MICROBIOLOGY  
28163 OCEANOGRAPHY

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**Activities Related to Measurements and Monitoring:**

Occasionally NSRI initiate interlaboratory calibration activities. NSRI hope to publish a manual of validated procedures for the analysis of environmental samples.

**Scope of the Measurements/Activities:**

Research and development  
Pollution control monitoring  
Assessment of water quality  
Compliance with requirements

**QA/QC Activities:**

Occasional participation in interlaboratory comparison exercises. NSRI have participated in the International Plant Exchange and in the International Soil Exchange programmes of the Netherlands, which is an interlaboratory calibration programme.

**Reference materials:**

User

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**Instrumentation:**

Atomic Absorption Spectrophotometry  
Gas chromatography  
Uv-vis chromatography  
Ion chromatography  
Electron microscopy  
Electrophoresis  
Phase contrast microscopy

**Programme Participation:**

Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture: Coordinated research programme on the use of radio-isotopes in the determination of pesticide residues in a model rice/fish ecosystem. World Federation of Culture Collection, USA: The NSRI microbiological Culture Collection (CC) is an active member of the network. Microbiological Research Centre (MIRCEN), Bangkok, Thailand: The NSRI/CC is a cooperating laboratory in this network and is a contact point in the Philippines. World Data Centre (WDC), Tokyo, Japan: The NSRI/CC submits a listing of its holdings to this centre regularly.

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**Green Brigades Ecologists Paper**

Ingardena 3/100  
Krakow PL-30-060  
Poland

Contact: Dr. Andrzej Zwawa

Telephone: +48 12 336 377 extension 234

Telefax: +48 12 340 515, 226 306

Telex:0322297 UJ PL

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**Type of Organization:**

Non-Governmental Organization  
National

**Activities:**

Data/Information management

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil, Biosphere,  
Cross media, Food

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**Keywords:**

22300 POLLUTION ABATEMENT

22432 RECYCLING

25200 MONITORING CRITERIA AND DATA

27110 DATA PROCESSING

27120 DATA RECORDING TECHNIQUES

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**Activities Related to Measurements and Monitoring:**

Collection and exchange of all information about "clean" technologies and their usage, waste recycling, data concern information about air, water and ground pollution and methods of their measurement

**Scope of the Measurements/Activities:**

Vigilance systems

Identification of pollution sources and pollutant monitoring in Krakow.

**Reference materials:**

User; Certifier

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**Institute of Meteorology and Water Management  
Maritime Branch**

ul. Waszyngtona 42  
Gdynia PL-81-342  
Poland

Contact: Mr. Zbigniew Dziadziuszko

Telephone: +48 20 52 21

Telefax: +48 20 16 41

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Poland

**Activities:**

Monitoring

Research

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment, Biosphere,  
Cross media

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**Keywords:**

13156 RIVERS

14000 OCEANS AND COASTAL AREAS

21378 PHYSICO-CHEMICAL PROCESSES

25210 ATMOSPHERIC MONITORING

25250 MARINE MONITORING

25280 WEATHER PREDICTION

25324 CALIBRATION OF MEASURING EQUIPMENT

28157 METEOROLOGY

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**Activities Related to Measurements and Monitoring:**

Pilot programme of monitoring the national coastal waters of the Polish zone of the Baltic Sea, atmosphere and river discharge as regards optimization of measurement frequency, measurement methods and practical recommendations

Organisation of international meetings of groups of experts within the frame of HELCOM

Annual report of the Department of Marine Physics and chemistry

**Scope of the Measurements/Activities:**

Baltic Monitoring Programme within the framework of HELCOM.

National monitoring of river pollution load and atmospheric transport of pollution.

Monitoring of the Polish coastal zone of the Baltic Sea as BMP.

Monitoring of radioactive pollution of the Polish zone of the Baltic Sea.

Warning service in the field of meteorology and hydrology.

Participation in the international oceanographic experiments and intercalibration exercises (ICES, HELCOM).

Preparation of reference materials for physico-chemical and sanitary analyses in river water.

Verification of meteorological and hydrological models.

**Reference materials:**

User

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**Instrumentation:**

Standard meteorological equipment according to WMO standard of meteorological-hydrological service.

Physico-chemical equipment for temperature and salinity measurements in the sea (in situ and laboratory), nutrient and oxygen content determination, pH currents.

Laboratory equipment necessary for trace analyses of petroleum hydrocarbons, chlorinated hydrocarbons, biocides, heavy metals and radioactive substances

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**General Direction of Environmental Quality**

Rua De "O Seculo" 51  
Lisboa P-1200  
Portugal

**Contact:** Mr. Artur Ascenso Pires

**Telephone:** + 351 1 346 3241

**Telefax:** +351 1 346 0150

**Telex:**13322

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Portugal

**Activities:**

Policy development

Monitoring

Assessment

Management and Enforcement

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment, Biosphere

Other: Data management

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**Keywords:**

00000 HARMONIZATION

10300 AIR POLLUTION

12148 SEDIMENTATION

13000 FRESHWATER

13378 WATER POLLUTION

15232 ENVIRONMENTAL IMPACT

25324 CALIBRATION OF MEASURING EQUIPMENT

26160 POLLUTION CONTROL REGULATIONS

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**Activities Related to Measurements and Monitoring:**

Environmental control which also involves legislative aspects.

Responsible for the national network of air and water pollution monitoring, noise control and waste management.

Laboratory of the sectorial normalization for air, water and noise

Department of risk assessment, and evaluation of the Impact Assessment for industrial permits.

Research and development programmes created for the environment

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**Institute for the Conservation of Nature (ICN)**

Rua da Lapa, 73  
Lisbon P-1200  
Portugal

Contact: Dr. Joaquim Marques Ferreira, President

Telephone: +351 1 3950464 +351 1 3950466

Telefax: +351 1 601 048

Telex: 44089

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Portugal

**Activities:**

Policy development  
Coordination  
Research  
Monitoring  
Data/Information management

**Sectors:**

Hydrosphere, Marine water, Lithosphere, Sediment, Rock, Biosphere, Flora,  
Fauna, Cross media, Ecosystem, Environment and development

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**Keywords:**

12100 SOILS  
12148 SEDIMENTATION  
12700 BIOLOGICAL DIVERSITY AND PROTECTED AREAS  
12760 NATIONAL PARKS AND RESERVES  
15145 NATURE CONSERVATION  
26116 ENVIRONMENTAL LAW

---

**Activities Related to Measurements and Monitoring:**

Promotion of the Nature Conservation National Plan; study and inventory of the ecologic systems and components; study and proposition of measures concerning: the preservation of the genetic patrimony, rational management of the wild fauna and flora, species protection; proposal of new protected areas; Elaboration of protected areas management plans; promotion of scientific and technological research; proposal of new international agreements and conventions concerning the nature conservation and protection areas; participation in international projects and cooperation with international institutions;(mainly in the EC and council of Europe).  
Participation in the process of environmental impact assessment.

**Scope of the Measurements/Activities:**

Monitoring of physical and biotic factors  
Supervision of protected areas  
Application of legislation in force  
Actions for environmental information and sensitization

**Reference materials:**

User

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**Databases:**

Bibliography.

**Programme Participation:**

CORINE BIOTOPS. Physiographic chart of Algarve and Andaluzia.

**Publications:**

Nature Courier Revue;  
"Nature and Landscape" collection;  
"Studies" series;  
Thematic brochures

**Meetings:**

Periodical organization of:  
- Congress and Protected Areas  
- Technical seminar on Nature Conservation problems in the  
Mediterranean Region  
- National meetings on Nature, Culture and Tourism

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**Personnel: 700**

**Budget: 16 MIL. (ECU)**

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**Institute for Hydrography**

Rua das Trinas, 49  
Lisbon Codex P-1296  
Portugal

**Contact:** Henrique Teixeira Patinha, Director Documentation Services

**Telephone:** +351 5119  
**Telefax:** 396 0515

**E-Mail:** HIDROG P  
**Telex:** 65990

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**Type of Organization:**

Governmental Organization  
National

**Geographical Scope:**

National  
Portugal

**Activities:**

Monitoring  
Research

**Sectors:**

Marine water, Sediment  
Other: Naval Hydrographic Office

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**Keywords:**

14100 MARINE ENVIRONMENTS  
14142 MARINE POLLUTION  
14154 MARINE SEDIMENTS  
25250 MARINE MONITORING

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**Activities Related to Measurements and Monitoring:**

Monitoring of sea water and sediments in four areas of the joint monitoring programme of Oslo and Paris Commissions.

Following the guidelines approved by the Oslo and Paris Commissions for the sampling and analysis of sea water and sediments.

Participation in the annual meetings of the Joint Monitoring Group and the Ad-hoc Monitoring Group of the OSPARCOM.

**Scope of the Measurements/Activities:**

- Pollutant control monitoring.
- Vigilance systems.
- Identification of pollutant sources.

**QA/QC Activities:**

- Participation in various laboratorial calibrations organized by EEC and ICES.
- 

**Instrumentation:**

- Gas chromatography.
- Mass spectrometry.
- Atomic absorption spectrometry.
- Infra-red spectrometry.
- Ultra violet spectrometry.
- Ultra violet fluorescence.

**Meetings:**

- Participation in the ICES working group of marine chemistry and sediments.
-

**National Institute for Meteorology and Geophysics**

Rua C do Aeroporto  
Lisbon P-1700  
Portugal

Telephone: +351 1 802 221

Telefax: +351 1 802 370

Telex: 12742 dirment p

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Portugal

**Activities:**

Monitoring

**Sectors:**

Rock, Atmosphere

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**Keywords:**

10110 AIR QUALITY  
10150 GREENHOUSE GASES  
12570 VOLCANOES  
25210 ATMOSPHERIC MONITORING  
28139 GEOPHYSICS  
28157 METEOROLOGY

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**Activities Related to Measurements and Monitoring:**

All the activities conform with the international regulations of the WMO both on the observation of classical atmospheric variables and on the chemical composition and physical properties of the air and precipitation. The networks of the Institute are part of the WMO RA VI (Europe) and includes BAPMoN regional stations and GO3OS stations with standard instruments.

**Scope of the Measurements/Activities:**

Geophysical observations including seismology heat flux, geomagnetism and volcanology.

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**Programme Participation:**

BAPMoN, GO3OS/GAW.

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**Institute for Environmental Promotion**

Rua Carlos Testa, no 1-1a  
Lisbon P-1100  
Portugal

Contact: Dr. Joao Vila Lobos, President

Telephone: +351 1 576 236  
Telefax: +351 1 3561 102

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
National  
Portugal

**Activities:**  
Policy development  
Education  
Assessment

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**Keywords:**  
15232 ENVIRONMENTAL IMPACT  
27140 ENVIRONMENTAL TRAINING  
27170 PUBLIC INFORMATION

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**Activities Related to Measurements and Monitoring:**  
No work on environmental measurement but on public participation:  
- environmental education  
- public participation in environmental impact assessment  
- assistance to environmental defence groups, etc.

**Scope of the Measurements/Activities:**  
Evaluation of public reaction on environmental matters

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**University of Aveiro**  
**Department of the Environment**

**Aveiro P-3800**  
**Portugal**

**Contact:** Ms. Maria Isabel Fernandes

**Telephone:** + 351 34 250 85

**Telefax:** + 351 34 292 90

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

National

Portugal

**Activities:**

Research

**Sectors:**

Outdoor air, Marine water, Fresh water, Soil

Other: Estuarine water, liquid and gaseous effluents

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**Keywords:**

10300 AIR POLLUTION

12100 SOILS

13000 FRESHWATER

14142 MARINE POLLUTION

14278 ESTUARINE ECOSYSTEMS

20255 AIR POLLUTANTS

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**Activities Related to Measurements and Monitoring:**

Teaching a planning course and an environmental engineering course.

Research in waste water treatment, water quality, socio-waste treatment, gaseous effluent treatment, soil erosion.

Aquatic and air dispersion modelling.

Noise control.

Atmospheric chemistry.

**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Identification of pollution sources  
Verification of models  
Reaction processes and mechanics

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**Instrumentation:**

Gaseous pollutant analysers (NO<sub>x</sub>, O<sub>3</sub>, SO<sub>2</sub>)  
Gas chromatography  
Liquid chromatography  
Atomic absorption

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**Gambia River Basin Development Organization (OMVG)**

13, Passage Leblanc  
Dakar  
SENEGAL

Contact: Mr. Nassirou Diallo, Executive Secretary

Telephone: + 221 22 31 59

Telefax: + 221 22 59 26

Telex: 51487 omvg

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**Type of Organization:**

Intergovernmental Organisation

**Geographical Scope:**

Regional

Gambia, Guinea, Guinea Bissau, Senegal

**Activities:**

Research

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**Keywords:**

13148 RIVER BASIN DEVELOPMENT

13220 INTERNATIONAL RIVER BASINS

13280 RIVER BASINS

19340 INTERNATIONAL WATERCOURSES

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**Activities Related to Measurements and Monitoring:**

OMVG is currently in an initial phase, attempting to seek funding for its proposed measurement and monitoring activities.

**Reference materials:**

User

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**International Commission for the Conservation of Atlantic Tunas  
(ICCAT)**

Principe de Vergara 17-7  
Madrid E-28001  
Spain

Contact: Dr. Antonio Fernandez, Executive Secretary

Telephone: +34 1 431 03 29

Telefax: +34 1 576 19 68      Telex: 46330 iccat e

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**Type of Organization:**

Intergovernmental Organisation

**Geographical Scope:**

Regional  
Atlantic

**Activities:**

Policy development  
Data/Information management  
Research  
Assessment

**Sectors:**

Hydrosphere, Marine water, Food

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**Keywords:**

14360 FISH  
14375 MARINE RESOURCES CONSERVATION  
17154 FISHERIES MANAGEMENT  
25225 ENVIRONMENTAL STATISTICS  
25250 MARINE MONITORING

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**Activities Related to Measurements and Monitoring:**

ICCAT collects statistics on tuna fisheries in the Atlantic Ocean. Studies and working groups on population dynamics and stock assessment are then carried out, allowing recommendations for management to be formulated.

**Scope of the Measurements/Activities:**

ICCAT's duty, under the provisions of the International Convention for the Conservation of Atlantic Tunas made in Rio de Janeiro in 1966, is to maintain the populations of tuna and tuna-like species found in the Atlantic Ocean and the adjacent seas, at levels that will permit the maximum sustainable catch for food and other purposes.

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**Databases:**

Computerized database on tuna fishery and biological data.

**Publications:**

Biennial Report  
Annual Statistical Bulletin  
Collective Volume of Scientific Papers  
Annual Data Record  
Periodical Newsletter

**Meetings:**

Annual meeting for member countries, usually held in November

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**Personnel:** 14

**Budget:** 133 172 000 Pesetas

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**National Centre for Environmental Health (CNSA)**

Carretera de Pozuelo a Majadahonda Km. 2  
Madrid E-28220  
Spain

Contact: Dr. Benjamín Sanchez Fernandez-Murjas, Director

Telephone: +34 91 638 5799 extension 11

Telefax: +34 91 638 1013

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Spain

**Activities:**

Policy development

Monitoring

Assessment

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Fresh water, Snow/Ice,  
Biosphere, Human, Cross media, Food, Ecosystem

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**Keywords:**

00000 HARMONIZATION

10110 AIR QUALITY

10380 INDOOR AIR POLLUTION

12100 SOILS

12148 SEDIMENTATION

13000 FRESHWATER

13378 WATER POLLUTION

14142 MARINE POLLUTION

22120 HAZARDOUS SUBSTANCES

22154 NOISE POLLUTION

23418 FOOD

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**Activities Related to Measurements and Monitoring:**

The National Centre for Environmental Health is the reference institution in Spain for the air pollution monitoring network.

Setting and harmonization of techniques and methods for environmental monitoring and control in fields such as water pollution, hazardous wastes and noise.

Performance of intercalibration exercises within the health laboratories network

**Scope of the Measurements/Activities:**

Pollutant control, identification of pollutant sources and quality control.

Assessment of risk to man and the environment.

**QA/QC Activities:**

In outdoor air, CNSA participate in international QA programmes with the EEC, EPA, NILU and WHO. Also, QC is performed with the analytical centres in the Spanish Atmospheric Network.

**Reference materials:**

User

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**Instrumentation:**

AAS, HPLC, GC, MS.

Continuous analyzers in real time for air pollution.

**Programme Participation:**

GEMS Air. BAPMoN. EMEP. EC Project STEP

**Meetings:**

Several in 1991; meeting for good laboratory practice November 1991

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**Research Centre for Environmental Science (CSIC)**

Serrano 115 dpdo.  
Madrid E-28006  
Spain

Contact: Dr. Alfredo Perez Gonzalez

Telephone: +34 1 562 50 20

Telefax: +34 1 564 08 00

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Spain

**Activities:**

Research

**Sectors:**

Fresh water, Sediment, Soil, Flora

Other: Agroforestry

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**Keywords:**

00000 ECOTOXICOLOGY

10418 CLIMATIC CHANGE

12156 SOIL CONSERVATION

12168 SOIL EROSION

13200 FRESHWATER ECOSYSTEMS

13378 WATER POLLUTION

17181 PLANT DISEASES

21360 NITROGEN FIXATION

22158 ORGANIC POLLUTANTS

28102 AGRICULTURAL ECOLOGY

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**Activities Related to Measurements and Monitoring:**

Member of AENOR for normalizing analytical techniques.

Maps of:

- potential capacity of agricultural use in the CAM(Autonomic Community Madrid).
- Soil associations in the CAM and Spain.
- Agrobiology of Toledo province.

**Scope of the Measurements/Activities:**

Prevention of use of pollutants in soil management techniques by substitution of chemical compounds, fertilizers and biocides by biological N<sub>2</sub> fixation and exploitation of natural plant compounds.

Observations of climate change.

Pollutant control monitoring.

Identification of pollution sources.

Verification of models.

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**Instrumentation:**

Information Hardware.

Autoanalyzers.

Plasma emission.

Atomic adsorption.

Flame emission spectrophotometry.

Chromatography.

Transmission electron microscopy.

X-Ray diffraction.

X-Ray fluorescence spectrometry.

Barrido electron microscopy.

GIS and work stations.

**Meetings:**

Annual meeting of the Spanish Society of Soil Science

Meeting of the Spanish Nitrogen Fixation Society

Meeting of the Spanish Plant Physiology Society

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**University of Salamanca  
Department for Analytical Chemistry**

c/o Avda. Campo Charro, s/n  
Salamanca E-37007  
Spain

Contact: Mr. Rafael Garcia-Villanova

Telephone: + 23 29 45 37

Telefax: + 23 29 45 15

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Subnational

**Activities:**

Research  
Monitoring  
Education

**Sectors:**

Hydrosphere, Fresh water, Cross media, Food

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**Keywords:**

13000 FRESHWATER  
13420 DRINKING WATER  
22300 POLLUTION ABATEMENT  
23418 FOOD

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**Activities Related to Measurements and Monitoring:**

Castille-Leon Regional Government Drinking Water Control for most difficult parameters (chemical and biological).

Research:

- Evaluating drinking water treatment methods for minimizing formation of trihalomethanes and related compounds.
- Heavy metals and pesticides in food.

**Scope of the Measurements/Activities:**

Pollutants control monitoring of fresh and potable waters for the Castilla-Leon regional government.

Evaluation of drinking water treatment methods for minimizing chlorination by-products.

**QA/QC Activities:**

Participation in the BCR (Bureau communautaire de reference)

Interlaboratory comparison exercises.

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**Instrumentation:**

GC-MS, GC-ECD, C.O.T. apparatus (water), HPLC-Diode array, A.A.S. (flame, furnace, hydride).

**Databases:**

MEDLINE

Water Resources Abstracts

Cambridge Scientific Abstracts (Life Sciences)

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**World Tourism Organization (WTO)**

Capitan Haya 42  
Madrid E-28020  
Spain

Contact: Mr Peter Shackleford, Chief of Environment and Planning

Telephone: + 34 1 571 06 28

Telefax: + 34 1 571 37 33      Telex: 42188 omt e

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**Type of Organization:**

Intergovernmental Organisation

**Geographical Scope:**

Global

**Activities:**

Policy development  
Coordination  
Education  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Other: Tourism monitoring and research activity.

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**Keywords:**

16470 TOURISM AND TRAVEL  
16560 TOURIST FACILITIES  
25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

WTO's Environment Committee, a subsidiary organ of the Executive Council, composed of Member States, conducts a general programme on Tourism and the Environment of which monitoring and research are components.

**QA/QC Activities:**

QA relates essentially to official statistics published by WTO which are verified and updated with National Statistical Offices and checked against official WTO-UN definitions.

**Reference materials:**

User; Producer; Supplier

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**Databases:**

Current: WTO Tourism Documentation Centre (TIENET)

Planned for 1994-95: Tourism and Environment Clearing House

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**Personnel: 85**

**Budget: 14 MIL US\$**

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**Central Environmental Authority**

Maligawatte New Town  
Colombo 10  
Sri Lanka

Contact: Mr. Lakshman Cooray, Deputy Director

Telephone: +94 1 449 455/6

Telefax: +94 1 446 749

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Sri Lanka

**Activities:**

Management and Enforcement  
Policy development  
Monitoring

**Sectors:**

Indoor air, Fresh water

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**Keywords:**

10110 AIR QUALITY  
10380 INDOOR AIR POLLUTION  
13000 FRESHWATER  
25270 WATER QUALITY  
26160 POLLUTION CONTROL REGULATIONS

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**Activities Related to Measurements and Monitoring:**

Protection & Management of the Environmental and Natural Resource Base.  
Issuing of guidelines on pollution control.

**Scope of the Measurements/Activities:**

Pollution control monitoring  
Early warning or vigilance systems  
Identification of pollution sources

**Instrumentation:**

COD meter, BOD meter, Spectro-photometer, Millipo microbiological test kit, Water test kit, Oil content analyzer, Ambient air analyzer, Portable CO2 monitor, Portable CO monitor.

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**Wildlife & Nature Protection Society**

Chaitiya Road  
Colombo 1  
Sri Lanka

Contact: Dr. Ranjen Fernando

Telephone: +94 1 325248

Telefax: +94 1 580 721 Attn. Dr. Ranjen Fernando

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Sri Lanka

**Activities:**

Policy development  
Education  
Research  
Coordination

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil, Biosphere,  
Fauna, Flora, Environment and development, Environment and social  
conditions

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**Keywords:**

10110 AIR QUALITY  
10380 INDOOR AIR POLLUTION  
11148 NATURAL RESOURCES  
12100 SOILS  
12148 SEDIMENTATION  
12734 FAUNA  
12738 FLORA  
13000 FRESHWATER



13200 FRESHWATER ECOSYSTEMS  
14360 FISH  
15145 NATURE CONSERVATION  
22148 MOTOR VEHICLE EMISSIONS  
25250 MARINE MONITORING

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**Activities Related to Measurements and Monitoring:**

The Society acts in advisory capacity to the government in the protection of fauna and flora and the environment.

The Society conducts workshops, educational field classes, educational meetings, evaluations and environmental assessments.

**Scope of the Measurements/Activities:**

Collecting and publishing biological data from protected areas.

Evaluating data such as that concerning the export of natural resources.

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**Programme Participation:**

National Forestry Development. Management of Protected Areas. Educational-National Media. Youth education. Management and development of low lying areas. Pollution of waterways.

**Meetings:**

Centenary Celebrations in 1994

School nature club meetings (quarterly), in conjunction with Lions Clubs and Rotarians etc.

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**Ministry of Defence  
Meteorological Department**

**Khartoum  
Sudan**

**Contact:** Mr. Ismail F. Mohamed

**Telephone:** + 249 11 72992/72979/71639

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
National  
Sudan

**Activities:**  
Policy development  
Monitoring  
Management and Enforcement

**Sectors:**  
Outdoor air

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**Keywords:**  
10110 AIR QUALITY  
10418 CLIMATIC CHANGE  
22300 POLLUTION ABATEMENT  
25210 ATMOSPHERIC MONITORING  
28157 METEOROLOGY

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**Activities Related to Measurements and Monitoring:**  
Measurements on atmospheric turbidity, wet precipitation samples,  
suspended particulate matter.

**Scope of the Measurements/Activities:**  
Observation of climate change  
Identification of pollution sources  
Pollutant control monitoring

**Instrumentation:**

Mainz II-585-39 sunphotometer

Automatic precipitation collector, model KFA

High volume sampler (HVS)

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**Geological Survey of Sweden (SGU)**

Uppsala S-751 28  
Sweden

Contact: Dr. Ingemar Cato

Telephone: +46 18 179 000

Telefax: +46 18 179 210

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Sweden

**Activities:**

Policy development

Monitoring

Assessment

**Sectors:**

Outdoor air, Fresh water, Sediment, Soil, Rock

Other: Bedrock, roots in stream sediments

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**Keywords:**

00000 LIBRARY OR DOCUMENTATION SERVICES

13172 SUBTERRANEAN WATER

13188 WATER RESOURCES CONSERVATION

13378 WATER POLLUTION

25220 ENVIRONMENTAL MONITORING

25225 ENVIRONMENTAL STATISTICS

25235 FRESHWATER MONITORING

25245 LONG-TERM TRENDS AND FORECASTING

25270 WATER QUALITY

26160 POLLUTION CONTROL REGULATIONS

28137 GEOLOGY

28147 HYDROLOGY

29317 ENGLISH

29368 SWEDISH

30437 SWEDEN

**Activities Related to Measurements and Monitoring:**

Development and synthesis of qualified background information concerning bedrock, soil and ground water for planning and decision-making purposes within for example, the environmental field.

Produced the standards for the ground water programme, including design, establishment and sampling techniques.

Within the framework of the International Council for the Exploration of the Sea (ICES) people from SGU have developed normalization techniques for a better interpretation of heavy metal data in sediments. SGU has developed the technique of biochemical mapping of stream sediments, etc..

**Scope of the Measurements/Activities:**

Monitoring long-term and large scale changes in the environment.

Mapping and Identification of contaminated areas, sources and load.

Collecting data about environmental conditions from pristine areas.

To illuminate the transportation of contaminants in water and air.

**Reference materials:**

Supplier; User

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**Instrumentation:**

Field: pH-meter, oxygen probe, conductivity meter, thermometer. Laboratory: filtration techniques, grain size analyses, carbon-sulphur analyzer, AAS with and without flame, graphite oven, XRF, ICP, FIA, ion-chromatograph, gas-chromatograph, freeze dryer, etc.

**Databases:**

Geochemical databases on bedrock, till, marine sediment, roots in stream and sediment.; Groundwater databases on chemistry and wells.

**Publications:**

"Geology in Society" (brochure)

"Coastal and Marine Management" (brochure)

Yearly distribution of geological maps and scientific publications in SGU's own series (SGU Seri CC).

**Meetings:**

2nd International Symposium on Environmental Geochemistry, 14-21

September, organized in cooperation with Swedish University of Agricultural Sciences

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Personnel: 200

Budget: 132 MIL SEK

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**Stockholm Environment Institute (SEI)**

Jaerntorget 84  
Stockholm S-103 14  
Sweden

Contact: Prof. M.J. Chadwick

Telephone: +46 8 723 02 60

Telefax: +46 8 723 03 48

Telex: 19580 SEI S

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Coordination

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment, Soil

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**Keywords:**

10110 AIR QUALITY  
10310 ACID RAIN  
10418 CLIMATIC CHANGE  
12000 TERRESTRIAL ECOSYSTEMS  
12100 SOILS  
12148 SEDIMENTATION  
13000 FRESHWATER  
21170 SULPHATES AND SULPHURIC ACID  
22152 NITROGEN OXIDES  
25250 MARINE MONITORING

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**Activities Related to Measurements and Monitoring:**

Participation in work with research laboratories and monitoring groups in the development and use of low cost deposit gauges and their comparison with standard gauges. Preparation of assessment reports on the gauges and reports detailing their use in monitoring work.

The development of surrogate measures for the estimation of ecosystem sensitivity to pollutants, particularly acid deposition. Presentation of the work to national and international bodies including the UN body responsible for the evolution of NO<sub>x</sub> and SO<sub>2</sub> protocols. Collaboration with other institutes and comparison and validation of results.

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**Instrumentation:**

Simple deposit gauges (wet and dry 'frisbees').

**Databases:**

Mainly GIS.

**Publications:**

Vallack, H.W. & Chadwick, M.J. (1990). A Two-Year Survey of Airborne Dust in the Selby District, North Yorkshire. Stockholm Environment Institute at York, U.K.

Chadwick, M.J. & Kuylenstierna, J.C.I. (1990). The Relative Sensitivity of Ecosystems in Europe to Acidic Deposition. A Preliminary Assessment of the Sensitivity of Aquatic and Terrestrial Ecosystems. Stockholm Environment Institute at York, U.K.

Mintzer, I. (Ed.), (1992). Confronting Climate Change. Risks, Implications and Responses. Stockholm Environment Institute, Sweden. Published by Cambridge University Press, Cambridge, U.K.

**Meetings:**

UN-ECE, INC and many others.

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**Personnel: 6 Scientists**

**Budget: 1.5 MIL SEK**

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**Swedish Environmental Protection Agency (SEPA)**

Solna S-171 85  
Sweden

Contact: Mrs. Manuela Notter, Principal officer

Telephone: +46 8 799 1061

Telefax: +46 8 292 382

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Sweden

**Activities:**

Management and Enforcement

Policy development

Monitoring

Assessment

Data/Information management

Coordination

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Marine water, Fresh water,  
Lithosphere, Sediment, Soil, Biosphere, Flora, Fauna, Cross media,  
Ecosystem, Environment and development.

Other: Discharges, Ground water.

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**Keywords:**

22300 POLLUTION ABATEMENT

25140 POLLUTANT ANALYSIS

25172 POLLUTANT SOURCE IDENTIFICATION

25180 POLLUTION MONITORING

25265 QUALITY CONTROL

25324 CALIBRATION OF MEASURING EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

Issuing guidelines for: measurements, design of monitoring programmes, evaluation of monitoring events and quality assurance programmes for environmental data.

Publishing results of environmental research monitoring and intercalibration efforts.

Coordination of monitoring events, environmental data systems and environmental models.

**Scope of the Measurements/Activities:**

Pollutant control monitoring.

Early warning systems and identification of pollutant sources.

Intercalibrations.

Biological and chemical characterisation of effluents.

Verification and development of models.

Observation of long range transport deposition of substances.

Observation of effects in the environment, and the state of the environment.

**QA/QC Activities:**

Monitoring and pollution control should be performed at authorized laboratories.

QA programme for environmental pollutant control data

Intercalibration and sampling comparisons are continuously performed in monitoring programmes.

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**Databases:**

SEPA have de-centralized databases held by local authorities and thematic authorities and consultants. The data systems used are developed by SEPA.

**Programme Participation:**

CORINE. HELCOM. PARCOM. ECE/ETAD/ICP's. EMEP/ICP Integrated Monitoring. AMAP.

**Publications:**

Standards for pollution analysis on environmental samples.

**Meetings:**

Meetings between 1 July 1991 and 30 June 1992:

PARCOM Nov. 91

LRTAP Nox, Metals and POC

HELCOM chemicals and urban areas

CORINE seminar

A number of inter-Nordic meetings

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**Personnel: 450**

**Budget: 100 MIL US\$**

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**Business Council for Sustainable Development (BCSD)**

World Trade Centre,  
10, route de l'Aéroport  
Geneva 15 CH-1215  
Switzerland

Contact: Mr. Trevor Russel, Director of Communications

Telephone: +41 22 788 3202

Telefax: +41 22 788 3211

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**Type of Organization:**

Industrial or Commercial  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Education

**Sectors:**

Environment and development

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**Keywords:**

15284 SUSTAINABLE DEVELOPMENT

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**Reference materials:**

User; Producer

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**Centre for Our Common Future**

Palais Wilson, 52, rue des Paquis  
Geneva CH-1201  
Switzerland

Contact: Mr. Warren H. Lindner, Executive Director

Telephone: +41 22 732 71 17  
Telefax: +41 22 738 50 46

E-Mail: commonfuture(Green Net)  
Telex: 412436 CSEN CH

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Sectors:**

Environment and development, Environment and social conditions  
Other: Information clearing house and networking.

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**Keywords:**

15284 SUSTAINABLE DEVELOPMENT  
27170 PUBLIC INFORMATION

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**Activities Related to Measurements and Monitoring:**

The Centre for Our Common Future is a charitable foundation, founded in 1988 to encourage greater public and institutional involvement throughout the world in efforts to achieve sustainable development.

With the help and support of its network of more than 200 working partner institutions in 70 countries, the Centre regularly collects information on sustainable development initiatives taken by all sectors of society and, through its two principal publications, "The Network" and "The Bulletin", disseminates it to more than 35 000 individuals and organizations in over 170 countries.

The Centre also encourages and facilitates public participation in national and international decision making processes and fosters intersectoral dialogue on issues related to sustainable development.

**Scope of the Measurements/Activities:**

Providing information  
Promoting public participation  
Monitoring and reporting on UNCED follow up  
Increasing intersectoral dialogue

**Reference materials:**

User; Producer; Supplier

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**Databases:**

The Centre for Our Common Future holds some 55 000 records in their database of organizations, including sectors such as Environment and Development Civic Groups, Educational Associations and National Government Agencies

**Publications:**

"The Network" and "The Bulletin", which disseminate information on sustainable development initiatives.  
The Annual Report.

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**Personnel: 10**

**Budget: 1.5 MIL US\$**

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**Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers (ETAD)**

Clarastrasse 4.  
Basel 5 CH-4005  
Switzerland

Contact: Dr. Eric A. Clarke, Executive director

Telephone: +61 681 22 30

Telefax: +61 691 42 78

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**Type of Organization:**

Industrial or Commercial  
International

**Geographical Scope:**

Global

**Activities:**

Coordination  
Assessment  
Data/Information management

**Sectors:**

Fresh water, Sediment, Human, Ecosystem

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**Keywords:**

00000 ECOTOXICOLOGY  
21390 TOXICITY  
22130 INDUSTRIAL EMISSIONS  
23132 HUMAN EXPOSURE TO POLLUTANTS  
26200 INTERNATIONAL ENVIRONMENTAL RELATIONS  
26232 INTERNATIONAL STANDARDISATION

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**Activities Related to Measurements and Monitoring:**

Several ecological test methods have been standardized for use within the dyes industry. Some of these methods have been the basis for subsequent OECD method of broader application.

Guidelines and advisories are issued to member companies on issues of current interest.

**Scope of the Measurements/Activities:**

To coordinate and unify the efforts of manufacturers of synthetic organic colourants to minimize possible impacts of these products on health and the environment.

To achieve these ends in the most economic fashion without reducing the level of protection to health and the environment.

To represent the positions and interests of manufacturers of synthetic organic colourants towards authorities, public institutions and media.

To promote product stewardship among member companies as it applies to the proper use of colourants in commerce.

**QA/QC Activities:**

Experimental projects are generally conducted to meet QA requirements.

Various round-robin tests have been conducted in recent years.

**Reference materials:**

User

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**Instrumentation:**

Various

**Databases:**

Computerized database of published toxicological and ecotoxicological data on individual colourants.

**Publications:**

Annual Reports, various technical papers, safety advisories

**Meetings:**

General Assembly, Copenhagen, May 1992

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**Personnel: 6**

**Budget: 1.5 MIL US\$**

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**International Academy of Environment**

4 Chemin de Conches  
Conches-Geneve CH-1231  
Switzerland

Contact: Dr. Allan M. Din

Telephone: +41 22 7891311

Telefax: +41 22 7892538

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**Type of Organization:**

Academic Organization  
International

**Geographical Scope:**

Global

**Activities:**

Education  
Research

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**Keywords:**

15107 ENVIRONMENTAL MANAGEMENT

15244 ENVIRONMENTAL POLICY

27140 ENVIRONMENTAL TRAINING

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**Activities Related to Measurements and Monitoring:**

The International Academy of Environment was founded 1991 as an international centre for education, training, study and research in environmental management.

The objectives of the Academy are to promote teaching and research in the field of environmental management in collaboration with governmental and non-governmental organizations, the academic community and industry and to provide environmental decision-makers with a forum for analysing and comparing the management of the main pressing environmental issues.

The primary emphasis is on seminars, workshops and conferences for decision-makers in the public and private sectors.

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**International Association Against Noise (AICB)**

Hirschenplatz 7  
Lucerne CH-6004  
Switzerland

Contact: Dr. Willy Aecherli, General Secretary

Telephone: +41 41 51 30 13

Telefax: +41 41 52 90 93

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Subnational

**Activities:**

Coordination

**Sectors:**

Environment and development  
Other: Noise abatement research and monitoring

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**Keywords:**

22154 NOISE POLLUTION  
22340 NOISE ABATEMENT  
25132 NOISE MONITORING

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**Activities Related to Measurements and Monitoring:**

Inform the authorities, the public and the private sectors.  
To give information and prepare technical reports.  
Carry out and assist research in the field of noise control.  
Promote the formation of national anti noise associations.  
Operation of a business office.



**Scope of the Measurements/Activities:**

- Idea and experience exchange for noise abatement.
  - Promotion of noise control at international level.
  - Contacting various organizations on noise abatement.
  - Maintaining collaboration and experience exchange.
  - Preparation of non governmental measures.
- 

**Databases:**

- Database to promote noise control at international level
- Database to promote cooperation and the exchange of experience
- Database to prepare supranational measures

**Programme Participation:**

- AICB are recognized by the UN (in consultative status with the UN Economic and Social Council).

**Publications:**

- Preparation of technical reports

**Meetings:**

- General Meeting on AICB's work
- 

**Personnel:** 1

**Budget:** 3000 Swiss Fr.

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**International Association of Environmental Analytical Chemistry**

Strengigassli 20  
Allschwil CH-4123  
Switzerland

Contact: Ms. Marianne Frei-Haeusler

Telephone: +41 61 481 27 89

Telefax: +41 61 48 20 805

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Coordination  
Assessment

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment, Soil, Biosphere, Cross  
media

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**Keywords:**

0000 ECOTOXICOLOGY  
10110 AIR QUALITY  
12100 SOILS  
12148 SEDIMENTATION  
13000 FRESHWATER  
25250 MARINE MONITORING  
25306 ANALYTICAL EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

International interdisciplinary membership and exchange of scientific information in the fields of environmental analytical chemistry, environmental chemistry, interactions between chemistry and biology, bioavailability, ecotoxicology and risk assessment.

**Scope of the Measurements/Activities:**

Guarantee the use of measurement by others and to improve analytical chemistry to answer new questions, e.g. the analytical chemistry of microsamples (including cells) and dynamic analytical chemistry.

**Reference materials:**

User

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**Instrumentation:**

No restriction, but instrumentation needs chemical understanding

**Meetings:**

Regularly organised symposia and workshops on:

- LC/MS, SFC/MS, CZE/MS and MS/MS
  - Ion Chromatography
  - Environmental hydrocarbons
  - Sample handling of pesticides
-

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**International Association of Scientific Experts in Tourism (AIEST)**

Varnbuelstr. 19  
St. Gallen CH-9000  
Switzerland

Contact: Dr. H.P. Schmidhauser, Secretary General

Telephone: +41 71 30 25 30      E-Mail: Schmidhauser@sgcl1.unisg.ch  
Telefax:      +41 71 30 25 36

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**Type of Organization:**  
Academic Organization

**Geographical Scope:**  
Global

**Activities:**  
Education  
Research

**Sectors:**  
Environment and development, Environment and social conditions

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**Keywords:**  
16470 TOURISM AND TRAVEL  
16560 TOURIST FACILITIES

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**Activities Related to Measurements and Monitoring:**

Congress activity: Through its annual congresses, AIEST appears more noticeably before a wider circle of interested people, who represent science, authorities and economics in practice. The congresses are devoted to discussion of problems related to tourism science and policy.

Documentation: AIEST publishes the "Tourist Review" and its series of publications. The quality of these journals has allowed a world-wide reputation to be gained, which highlights AIEST's work.

Promotion of Contacts and Scientific Work Connected with Tourism: AIEST provides contacts for its members and societies. It advises them and suggests suitable experts or policies to the authority.

AIEST facilitates scientific research work and events in the field of tourism, either by providing its own staff or by recruiting the services of others.

**Scope of the Measurements/Activities:**

AIEST endeavours to:

Foster friendly relations among its members

To promote scientific activity on the part of its members, in particular by developing personal contacts, providing documentation and facilitating exchange of views and experience.

To support the activity of scientific institutes of tourism, or other centres of research and education specializing in tourism, and to develop relations between them, as well as between them and the members of the association.

To organize and cooperate in congresses and other meetings and courses on tourism of a scientific nature.

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**Meetings:**

AIEST hosts an annual congress in September, devoted to problems occurring in tourism science and policy.

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**International Occupational Safety and Health Information Centre (CIS)**

**International Labour Office**  
**4, Route des Morillons**  
**Geneva 22 CH-1211**  
**Switzerland**

**Telephone:** +41 22 799 67 40

**Telefax:** +41 22 798 86 85/798 62 53

**Telex:** 415 647 ILO CH

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**Type of Organization:**

United Nations Organization

**Geographical Scope:**

Global

**Activities:**

Policy development

Research

Monitoring

Assessment

Data/Information management

**Sectors:**

Human, Environment and development, Environment and social conditions

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**Keywords:**

18000 INDUSTRY

22110 COMMERCIAL AND INDUSTRIAL NOISE

23000 HUMAN HEALTH

23345 OCCUPATIONAL SAFETY

26148 INDUSTRIAL LEGISLATION

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**Activities Related to Measurements and Monitoring:**

The mission of CIS is to collect the world literature that can contribute to the prevention of occupational hazards and to disseminate this information at an international level.

**Scope of the Measurements/Activities:**

CIS receives approximately 40 000 documents each year, originating from national centres, government agencies, trade unions, industry institutions and private publishers in more than 70 countries.

Over 2000 of these documents are selected by CIS for input in to the CIS database according to specific criteria. Especially important is the literature concerning toxicity and prevention of major accidents in the chemical industry.

CIS organizes training of national centre personnel in modern information processing.

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**Instrumentation:**

Computers.

Microfiche.

**Databases:**

CIS Database of 40000 records concerning health and safety in the work place.

CIS Database is available on CD-ROM.

CIS Microfiche collection of documents, holding over 100000 microfiches.

**Programme Participation:**

ILO programmes and technical work.

**Publications:**

ILO-CIS Bulletin- "Safety and Health at Work".

CIS Bibliographies on important safety and health topics.

CIS Technical and Chemical Information Sheets.

CIS Thesaurus, including 15 000 terms organized according to a subject or facet coding system.

CIS International Directory of OSH Institutions.

CIS Glossary of Occupational Safety and Health Terms.

CIS List of Periodicals Abstracted.

African Newsletter on Occupational Safety and Health.

ILO Encyclopadia on Occupational Health and Safety.

**Meetings:**

Technical Cooperation work carried out by the ILO and other United Nations organizations throughout the world.

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**Ramsar Convention Bureau (Ramsar)**

Rue Mauverney 28  
Gland CH-1196  
Switzerland

Contact: Mr. Daniel Navid, Secretary General

Telephone: +41 22 999 01 70

Telefax: +41 22 999 01 69

Telex: 419624

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**Type of Organization:**

Intergovernmental Organisation

**Geographical Scope:**

Global

**Activities:**

Management and Enforcement

Coordination

Data/Information management

**Sectors:**

Hydrosphere, Marine water, Fresh water, Biosphere, Flora, Fauna, Cross media, Ecosystem, Environment and development

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**Keywords:**

12600 WETLANDS ECOSYSTEMS

12728 ECOLOGICAL BALANCE

15145 NATURE CONSERVATION

15232 ENVIRONMENTAL IMPACT

15236 ENVIRONMENTAL IMPACT ASSESSMENT

26228 GLOBAL CONVENTIONS

26238 INTERNATIONALLY IMPORTANT ECOSYSTEMS

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**Activities Related to Measurements and Monitoring:**

The Ramsar Bureau is the body responsible for administering the "Convention on Wetlands of International Importance", which is the inter-governmental framework for wetland conservation.

The convention currently has 80 contracting parties, known as member governments, which have among them designated 625 sites, covering almost 40 million hectares for the Ramsar "List of Wetlands of International Importance".



Contracting parties accept an obligation to maintain the ecological character of their listed wetlands, otherwise referred to as "Ramsar Sites". The Convention has established a monitoring procedure, which is a flexible framework aimed at assisting Contracting Parties in finding solutions to actual or potential changes in the ecological character of wetlands. Other obligations of the Contracting Parties include the wise use of their wetlands, international cooperation for shared wetlands and species, creation of reserves and the supply of data for the Ramsar List of Wetlands.

**Scope of the Measurements/Activities:**

Identifying causes and possible solutions for adverse changes in ecological character, at sites designated for the Ramsar "List of Wetlands of International Importance".

**Reference materials:**

Producer

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**Instrumentation:**

PC compatible computers and database software.

**Databases:**

Database holding summary information for 625 wetland sites throughout the world, which have been designated as Wetlands of International Importance.

**Publications:**

Newsletter.  
Conference and Meeting Proceedings.  
Directories of Wetlands of International Importance.  
Ramsar Convention Bureau Triennial Report.

**Meetings:**

Conference of the Contracting Parties every three years. Annual Meeting of the Standing Committee.  
Regional Meetings.

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**Personnel: 15**

**Budget: 4.5 MIL US\$**

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**Swiss Society of Environmental Science (SAGUF)**

Moserstr. 22  
Bern CH-3014  
Switzerland

Contact: Christian Hedinger

Telephone: +41 31 40 04 24

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Switzerland

**Activities:**

Policy development  
Coordination  
Monitoring

**Sectors:**

Outdoor air, Fresh water, Soil  
Other: coordination of endeavours.

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**Keywords:**

25124 IDENTIFICATION OF POLLUTANTS  
25172 POLLUTANT SOURCE IDENTIFICATION  
25220 ENVIRONMENTAL MONITORING  
25384 WARNING SYSTEMS

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**Activities Related to Measurements and Monitoring:**

Organizing one (international) symposium per year.  
Publication of symposium abstracts/articles etc.  
Coordination of environmental research activities.

**Scope of the Measurements/Activities:**

Monitoring of several environmental factors nationwide.  
Detection of new pollutants (early warning).

**Meetings:**

Yearly symposium on "organisation, planning, mediation" Oct. 1991

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**University of Bern  
Group for Development and Environment (GDE)**

Hallerstrasse 12  
Bern CH-3012  
Switzerland

Contact: Dr. H. Hurni, Director

Telephone: +41 31 631 88 22

Telefax: +41 31 631 85 44

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Global

**Activities:**

Education

Research

Monitoring

Assessment

Data/Information management

**Sectors:**

Hydrosphere, Fresh water, Lithosphere, Soil, Biosphere, Flora, Fauna, Human,  
Cross media, Ecosystem, Environment and development, Environment and  
social conditions.

Other: Planning support.

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**Keywords:**

11148 NATURAL RESOURCES

12156 SOIL CONSERVATION

12670 WATERSHED MANAGEMENT

15000 ENVIRONMENT AND DEVELOPMENT

15107 ENVIRONMENTAL MANAGEMENT

15284 SUSTAINABLE DEVELOPMENT

16462 RURAL AREAS

16468 SOCIO-ECONOMIC FACTORS

25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

Carrying out long term field programmes in applied research.  
Planning support and consulting for implementing agencies.  
Education and training at University and other levels (Ministries, NGO's).  
Holding international, national and regional meetings, seminars and workshops.

**Scope of the Measurements/Activities:**

Monitoring of status of natural resources, especially soil and water on different scales (on-station; catchments and watersheds; national level).  
Monitoring rural household strategies (land use, socio-economy).  
Provision of regional/national database with help of GIS (Geographical Information System).

**QA/QC Activities:**

Internal and external evaluations.

**Reference materials:**

Producer; Supplier

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**Instrumentation:**

Instrumentation for measurement of environmental parameters (soil loss, soil moisture, river discharge, sediment load, rainfall and temperature).  
In the field of land use and socio-economy, the instruments used are:  
- Satellite Imagery and aerial photography.  
- Survey Questionnaires.  
- Participatory Appraisals and statistics.

**Databases:**

Natural resources and topography, Ethiopia.  
Regional database (natural resources and socio-economic parameters), Kenya.  
Local databases, Madagascar.  
Flood events (time series), Bangladesh.

**Programme Participation:**

Soil Conservation Research Project (SCRIP), Ethiopia. Laikipia Research Programme (LRP), Kenya. Terre-Tany, Madagascar. WOCAT. UNCED. UNESCO. UNU.

**Publications:**

Guidelines for sustainable resource use.  
Publications on environment and development.

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Personnel: 20 (H.Q.) 130 (Field)

Budget: 2.5 MIL US\$

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**World Conservation Union (IUCN)**

Rue Mauverney 28  
Gland CH-1196  
Switzerland

**Contact:** Dr. Martin Holdgate, Director General

**Telephone:** +41 22 999 00 01

**Telefax:** +41 22 999 00 02

**Telex:** 419624 IUCN ch

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Management and Enforcement  
Education

**Sectors:**

Biosphere, Flora, Fauna, Human, Ecosystem, Environment and development,  
Environment and social conditions

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**Keywords:**

12328 FOREST CONSERVATION  
12786 WILDLIFE CONSERVATION  
13116 CONSERVATION OF FRESHWATER  
13188 WATER RESOURCES CONSERVATION  
14375 MARINE RESOURCES CONSERVATION  
15145 NATURE CONSERVATION  
15284 SUSTAINABLE DEVELOPMENT  
20230 ENERGY CONSERVATION

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**Activities Related to Measurements and Monitoring:**

Environmental monitoring and related research is not a priority activity for IUCN.

**Scope of the Measurements/Activities:**

To secure the conservation of nature and especially of biological diversity, as an essential foundation for the future.

To ensure that where the earth's natural resources are used this is done in a wise, equitable and sustainable way.

To guide the development of human communities towards ways of life that are both of good quality and in enduring harmony with other components of the biosphere.

**Reference materials:**

User; Producer

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**World Health Organization (WHO)  
Prevention of Environmental Pollution (PEP)**

20, ave. Appia  
Geneva 27 CH-1211  
Switzerland

Contact: G. Ozolins, Manager

Telephone: +41 22 791 3729  
Telefax: +41 22 791 0816

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**Type of Organization:**  
United Nations Organization

**Geographical Scope:**  
Global

**Activities:**  
Policy development  
Coordination  
Monitoring  
Assessment  
Data/Information management

**Sectors:**  
Outdoor air, Indoor air, Fresh water, Food, Human health, Human exposure  
Other: Radiation, drinking water

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**Keywords:**  
00000 HARMONIZATION  
10110 AIR QUALITY  
10300 AIR POLLUTION  
13378 WATER POLLUTION  
15236 ENVIRONMENTAL IMPACT ASSESSMENT  
16476 URBAN AREAS  
23000 HUMAN HEALTH  
23132 HUMAN EXPOSURE TO POLLUTANTS  
23418 FOOD  
23430 FOOD CONTAMINATION  
25188 RADIATION MONITORING



25200 MONITORING CRITERIA AND DATA  
25245 LONG-TERM TRENDS AND FORECASTING  
25265 QUALITY CONTROL  
25270 WATER QUALITY  
27140 ENVIRONMENTAL TRAINING  
28132 FOOD SCIENCE AND TECHNOLOGY

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**Activities Related to Measurements and Monitoring:**

WHO operates the GEMS/Air, Water, Food, Radiation, and HEAL networks. GEMS/Air has issued guidelines for monitoring sulphur dioxide and suspended particulate matter (SPM) and procedures for air quality data reporting. WHO is initiating an international audit programme for establishing comparability of air quality measurements between countries.

In the water field, WHO issues guidebooks on harmonized procedures for sampling, analysis and data processing.

An analytical quality control programme ensures compatibility of analytical results.

Assessment reports on regional and global scale are issued periodically.

In the food area, WHO jointly cooperate with FAO and periodically convene for sessions of the joint FAO/WHO Expert Committee on food additives and joint FAO/WHO meetings on pesticide residues.

**Scope of the Measurements/Activities:**

To provide a broad global coverage of urban air quality

To encourage developing countries to monitor air quality and develop control programmes

To provide a global overview of air pollutant distributions and trends

To provide a database for the assessment of freshwater quality on a global scale

To provide databases for the water quality management of international river basins.

**QA/QC Activities:**

Periodic performance evaluation studies for water and food laboratories.

**Reference materials:**

User

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**Instrumentation:**

High volume samplers for TSP and manual bubble samplers for SO<sub>2</sub>

Standard wet chemistry for inorganics, AAS for heavy metals and GLC for organics

**Databases:**

Global databank for each of the GEMS components maintained.

**Programme Participation:**

60 countries participate in the GEMS programmes.

**Publications:**

"Unser Planet, unsere Gesundheit".

"Global Freshwater Quality-A First Assessment".

"Water Quality Assessment-A Guide to the use of Biota, Sediments and Water in Environmental Monitoring".

"Information Needs for Water Quality Assessment and Management".

**Meetings:**

Annual GEMS/water steering committee meetings.

Expert consultations on data processing, analytical quality assurance and early warning methods.

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**Personnel:** Staff at HQ and 4 collaborators.

**Budget:** 900 000 US\$

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**World Meteorological Organization (WMO)**

Geneva 2 CH-1211  
Switzerland

Contact: Prof.Dr. G.O.P. Obasi, Secretary General of WMO

Telephone: + 41 22 730 84 01

Telefax: + 41 22 734 23 26

Telex: 23 260 OMM CH

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**Type of Organization:**

United Nations Organization

**Geographical Scope:**

Global

**Activities:**

Education  
Coordination  
Research  
Monitoring  
Data/Information management  
Assessment

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Marine water, Fresh water,  
Lithosphere, Sediment, Soil, Biosphere, Human, Environment and  
development, Environment and social conditions

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**Keywords:**

10400 CLIMATE AND CLIMATE CHANGE  
10418 CLIMATIC CHANGE  
25220 ENVIRONMENTAL MONITORING  
25275 WEATHER MONITORING  
25300 MONITORING TECHNIQUES AND EQUIPMENT  
28125 CLIMATOLOGY  
28157 METEOROLOGY

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**Activities Related to Measurements and Monitoring:**

The World Meteorological Organization coordinates global scientific activity to allow prompt and accurate weather information and other services for public, private and commercial use.

WMO is responsible for being the authoritative scientific voice on the state and behaviour of earth's atmosphere and climate.

**Scope of the Measurements/Activities:**

To facilitate worldwide cooperation in the establishment of networks of stations for the making of meteorological observations as well as hydrological and other geophysical observations related to meteorology and to promote the establishment and maintenance of centres charged with the provision of meteorological and related services.

To promote the establishment and maintenance of systems for the rapid exchange of meteorological and related information.

To promote standardization of meteorological and related observations and to ensure the uniform publication of observations and statistics.

To further the application of meteorology to aviation, shipping, water problems, agriculture and other human activities.

To promote activities in operational hydrology and to further close cooperation between meteorological and hydrological services.

To encourage research and training in meteorology and as appropriate, in related fields and to assist in coordinating the international aspects of such research and training.

**Reference materials:**

User; Supplier; Certifier; Producer; Advisory Service; Consultancy Service

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**Instrumentation:**

Automatic weather stations; Retransmission system antennae; River gauges; Free floating and moored buoys; Research and monitoring ships.

**Programme Participation:**

World Weather Watch (WWW). WMO/UNEP Intergovernmental Panel on Climate Change. Global Ozone Observing System (GOOS). Background Air Pollution Monitoring Network (BAPMoN). Global Atmosphere Watch (GAW). Global Climate Observing System (GCOS). Tropical Ocean/Global Atmosphere (TOGA). World Ocean Circulation Experiment (WOCE). Many of the programmes within WMO are listed in the UNEP/HEM Survey of Environmental Monitoring and Information Management Programmes of International Organizations.

**Meetings:**

World Meteorological Congress.

The Executive Council which reviews the activities of WMO.

Technical Commissions to study specific environmental topics.

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**Personnel:** 300

**Budget:** 50 MIL US\$

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**Arab Centre for the Studies of Arid Zones and Dry Lands  
(ACSAD)**

**Damascus  
Syria**

**Contact:** Dr. Mohamed El-Khash, Director General

**Telephone:** +963 11 755 713

**Telex:** 412697 ACSAD SY

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**Type of Organization:**  
Intergovernmental Organisation

**Geographical Scope:**  
Regional  
Arab countries

**Activities:**  
Coordination  
Education  
Research

**Sectors:**  
Fresh water, Soil, Flora  
Other: Natural renewable resources in Arid Zones of Arab countries; Water resources; Livestock;

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**Keywords:**  
12200 ARID LANDS AND DESERTIFICATION  
12213 ARID ZONES  
15240 ENVIRONMENTAL IMPACT ASSESSMENT  
25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**  
Regional meetings for Arab countries and internationally concerned organizations.  
Publishing reports and studies in Arabic, English and French for the Ministries of Agriculture and other Arab organizations.  
Training technical staff members in Arab countries.

**Scope of the Measurements/Activities:**

Survey, monitoring, assessment and management of natural resources in Arab arid zones.  
Measurements to arrest desertification.

**Reference materials:**

User

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**Instrumentation:**

Field survey equipment.  
Aerial photography.  
Agrometeorological stations.  
Computers.  
GIS systems

**Databases:**

Arab database  
Water resources databank for Arab countries

**Meetings:**

Regional meetings for Arab countries on arid zones and the problems of desertification.

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**Asian Institute of Technology  
Environmental Engineering Division (AIT)**

Bangkok 10501  
Thailand

Contact: Dr. C. Visvanathan, Assistant Professor

Telephone: +66 2 524 5640

E-Mail: visu@emailhost.ait.ac.th

Telefax: +66 2 524 5626

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Regional

**Activities:**

Education

Research

Data/Information management

**Sectors:**

Hydrosphere, Fresh water, Ecosystem, Environment and development,  
Environment and social conditions

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**Keywords:**

22122 HAZARDOUS WASTES

22130 INDUSTRIAL EMISSIONS

22300 POLLUTION ABATEMENT

22408 CHEMICAL TREATMENT OF WASTE

22416 INCINERATION OF WASTE

22472 WASTE DISPOSAL

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**Activities Related to Measurements and Monitoring:**

Journal publication.

Conducting international, regional or national level seminars, workshops and  
training programmes.

Publishing reviews (ENSIC).

Research publications.

**Scope of the Measurements/Activities:**

EIA (Environmental Impact Assessment).  
Water and waste water treatment.  
Hazardous waste management and treatment.  
Industrial pollution control.  
Masters and Doctoral level research programmes.  
Conduction of training courses and seminars in Masters and Doctoral level research programmes.

**Reference materials:**

User; Producer

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**Instrumentation:**

Spectrophotometer  
Particle Size Analyzer  
Mercury Analyzer  
TOC  
Bomb Calorimeter  
Turbidimeter  
Atomic Absorption Spectrophotometer  
HPLC  
GC/MSD/IRD (identification of organic and halogenic substances)  
Gas Chromatograph  
GC (Capillary Column)  
GC (Glass Column)  
GC (Stainless Steel Column)

**Databases:**

AIT are in the process of establishing a database on hazardous waste management for South and East regions of Asia.

**Programme Participation:**

WHO Collaborating Centre for Water Supply and Waste Disposal.

**Publications:**

Journals  
Reviews (ENSIC)  
Research publications

**Meetings:**

Annual general assembly meeting

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**Personnel:** 175 (Faculty members only)

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**Asian Society for Environmental Protection (ASEP)**

c/o CDG-South East Asia Program Office  
Asian Institute of Technology  
Bangkok 10501  
Thailand

Contact: Mr. Guenter Tharun, Secretary General

Telephone: +66 2 524 5363/64

Telefax: +66 2 524 5390

Telex: 84276 ait th (atten:seapo)

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Asia

**Activities:**

Education

**Sectors:**

All sectors

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**Keywords:**

15000 ENVIRONMENT AND DEVELOPMENT  
15107 ENVIRONMENTAL MANAGEMENT  
25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

The general assembly meeting is held once a year to discuss ASEP's constitutions and by-laws.

ASEP also produces a quarterly newsletter which features articles relevant to the Asian environment, encompassing the various disciplines relating to environmental management and technology.

In conjunction with the approaching anniversary, plans are being initiated for convening the ASEP 10th Anniversary Symposium in September of 1994. It will be a major international event bringing together environmental experts to follow-up on regional achievements and to make plans and recommendations for future environmental measures.

**Scope of the Measurements/Activities:**

Information exchange (depends upon writer)

**QA/QC Activities:**

Depends upon writer

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**Instrumentation:**

Depends upon writer

**Databases:**

People and institutions interested in environmental protection.

**Publications:**

ASEP quarterly newsletter

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**Personnel:** 1 (part time)

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**Environmental Research and Training Centre (ERTC)  
Department of Environmental Quality Promotion (ONEB)**

Technopolis  
Klong Luang district  
Pathumthani 12120  
Thailand

Contact: Ms. Monthip Shiratana Tabucanon, Director

Telephone: +66 2 577 1140

Telefax: +66 2 577 1138

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional

Asian member countries

**Activities:**

Research

Monitoring

Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Marine water, Fresh water, Lithosphere, Sediment, Soil, Biosphere, Human, Cross media, Food

Other: Noise pollution, suspended particulate matter

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**Keywords:**

10300 AIR POLLUTION

13378 WATER POLLUTION

22180 SOLID WASTES

22184 TOXIC SUBSTANCES

25132 NOISE MONITORING

27130 ENVIRONMENTAL EDUCATION

27140 ENVIRONMENTAL TRAINING

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**Activities Related to Measurements and Monitoring:**

ERTC is responsible for monitoring, research and training activities. The objectives of the ERTC can be summarized as follows:

- To undertake practical research programmes on environmental management, particularly in the fields of water pollution, air pollution, noise, solid waste and toxic substances.
- To promote and encourage research activities on environmental quality in cooperation with educational establishments and other agencies.
- To strengthen environmental monitoring programmes for use in the planning and determination of national environmental quality standards and to formulate guidelines for the improvement of environmental quality.
- To provide training programmes in environmental management for governmental organizations, local government and other organizations.
- To provide environmental education programmes for staff at all levels and to train people with the appropriate expertise to be qualified instructors.

One of the research plans is to develop, improve and harmonize techniques and practices of environmental measurement within the country and also between ASEAN member countries.

**Scope of the Measurements/Activities:**

The objectives of these measurements are control monitoring, setting up of environmental quality standards, identification of pollution sources and verification of models.

**QA/QC Activities:**

ERTC is responsible for quality assurance for environmental laboratories which are involved in monitoring and environmental impact assessment

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**Instrumentation:**

- Spectrophotometers
- Gas and liquid chromatographs
- Ion chromatograph
- Dust monitors
- Air and stack samplers

**Databases:**

- IBM-MS DOS (Database 3)

**Programme Participation:**

- Mussel watch programme (IOC/WESPAC).
  - Asian/Japan: Network on environmental monitoring.
  - Asian/Canada cooperative programme on marine science-Phase 2
- 

**Personnel: 104**

**Budget: 1 MIL US\$**

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**Ministry of Agriculture and Co-operatives  
Department of Land Development  
Land Use Planning Division**

Phaholyothin Road, Bangkhen  
Bangkok 10900  
Thailand

Contact: Mr. Manu Omakupt

Telephone: + 66 2 579 4775

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Thailand

**Activities:**

Management and Enforcement  
Policy development  
Research

**Sectors:**

Soil, Environment and development  
Other: Natural resources, particularly in agriculture to be used on the land

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**Keywords:**

12136 LAND USE CLASSIFICATION  
12136 LAND USE CLASSIFICATION  
12140 MARGINAL LANDS  
12660 WATERLOGGED LANDS  
15107 ENVIRONMENTAL MANAGEMENT  
15264 POLICY PLANNING  
25220 ENVIRONMENTAL MONITORING  
25245 LONG-TERM TRENDS AND FORECASTING  
25360 REMOTE SENSING  
25360 REMOTE SENSING

26264 TECHNOLOGY TRANSFER  
27110 DATA PROCESSING  
27130 ENVIRONMENTAL EDUCATION  
28121 CARTOGRAPHY  
29317 ENGLISH  
29371 THAI  
30300 ASIA

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**Activities Related to Measurements and Monitoring:**

The department is responsible for:

- Soil survey, analysis, and classification.
- Land suitability classification and provision of data for National Land Use Policy.
- Land reclamation, soil and water conservation and enhancement of soil fertility.
- Transfer of appropriate technology.

The Land Use Planning Division is mainly responsible for:

- Land evaluation and classification.
- Collection of socio-economic data based on a land unit.
- Formulation of land use plans at the regional level, provincial level and specific area (project) level

**Scope of the Measurements/Activities:**

Land Use Management and Development  
Land Use Planning

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**Instrumentation:**

Manual work  
Computerized system

**Meetings:**

Department of Land Development will host an FAO Expert Consultation on Agro-ecological Zones Methodology and Application on 18-22 November 1991.

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**AEA Technology. Harwell Laboratory (AEA)**

Harwell Oxfordshire OX11 0RA  
United Kingdom

Contact: Dr. Christopher J. Pickford

Telephone: +44 235 434 880

Telefax: +44 235 434 917

Telex: 83135 ATOMHA G

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

National  
United Kingdom

**Activities:**

Monitoring  
Policy development  
Research

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil, Biosphere,  
Food  
Other: Various industrial pollutants and toxic chemicals in all media.

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**Keywords:**

10110 AIR QUALITY  
10380 INDOOR AIR POLLUTION  
12100 SOILS  
13000 FRESHWATER  
23418 FOOD  
25250 MARINE MONITORING

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**Activities Related to Measurements and Monitoring:**

Participation in inter-laboratory comparison studies.  
Provision of consultancy and advice to U.K. Government and regulatory  
authorities.

**Scope of the Measurements/Activities:**

- Pollutant control monitoring
- Early warning or vigilance systems
- Observation of climate change
- Development and control of reference materials
- Identification of pollution sources
- Verification of models

**QA/QC Activities:**

BS 5750, GLP and NAMAS for some activities.

**Reference materials:**

User; Producer; Certifier; Consultancy Service; Advisory Service

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**Instrumentation:**

A good range of analysers backed up by full analytical and computing facilities.

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**British Antarctic Survey (BAS)**

High Cross, Madingley Road  
Cambridge CB3 0ET  
United Kingdom

Contact: Dr. D.J. Drewry, Director

Telephone: +44 223 61188  
Telefax: +44 223 62616

E-Mail: CBS%UK.AC.NBS.VC::U\_DJD  
Telex: 817725 BASCAM G

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional  
Antarctic  
Arctic  
Southern Ocean

**Activities:**

Management and Enforcement  
Coordination  
Research  
Monitoring  
Assessment  
Data information management

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Marine water, Fresh water, Snow/Ice,  
Lithosphere, Sediment, Soil, Rock, Biosphere, Flora, Fauna, Human,  
Ecosystem, Environment and development.

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**Keywords:**

12410 ANTARCTIC ECOSYSTEMS  
12420 ANTARCTIC REGION  
12722 BIRDS  
13164 SNOW AND ICE  
13200 FRESHWATER ECOSYSTEMS  
14330 AQUATIC MAMMALS  
14370 MARINE ECOSYSTEMS  
14375 MARINE RESOURCES CONSERVATION  
15145 NATURE CONSERVATION  
25210 ATMOSPHERIC MONITORING

25220 ENVIRONMENTAL MONITORING  
25275 WEATHER MONITORING  
27110 DATA PROCESSING  
28112 ATMOSPHERIC PHYSICS  
28121 CARTOGRAPHY  
28121 CARTOGRAPHY  
28137 GEOLOGY  
28138 GEOMORPHOLOGY  
28141 GLACIOLOGY  
28145 HUMAN PHYSIOLOGY AND PATHOLOGY  
28157 METEOROLOGY  
28163 OCEANOGRAPHY  
28167 PHOTOGRAMMETRY  
28171 SOIL SCIENCES  
29317 ENGLISH  
30601 ANTARCTIC OCEAN

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**Activities Related to Measurements and Monitoring:**

Carrying out a very broad programme of basic research in the Antarctic.

Sixteen major fields of research are organised under five themes:

- Pattern and Change in the Physical Environment of Antarctica.
- Geological Evolution of West Antarctica.
- Dynamics of Antarctic Terrestrial and Freshwater Ecosystems.
- Structure and Dynamics of the Southern Ocean Ecosystem.
- Physics of Solar-Terrestrial Phenomena from Antarctica.

BAS attends and hosts a range of international meetings related to Antarctic research, publishes papers and an annual report and houses the editorial office of the journal "Antarctic Science".

**Scope of the Measurements/Activities:**

Undertaking research programmes which can only be done, or are best done in Antarctica. Antarctica comprises a unique natural laboratory for the study of problems of global relevance.

Global change studies focus upon the unique and vital contribution of Antarctica in climate, ocean and ice research.

Understanding the complex biological, chemical and physical role of the Southern ocean and its potential living resources for human consumption and related management.

Investigation of the environment for impacts and changes, to allow conservation and management.

**QA/QC Activities:**

Stratosphere: Ozone measurements using Dobson spectrophotometer. Routine recalibrations and use of WMO standard "travelling" lamp, usually every four years.

Preliminary ozone values sent to WMO each week: revised values available later after quality control, recalibrations etc.

Atmosphere: Standard thermometers available and standard barometers to all

BAS Antarctic bases, and recalibrated each year by UK meteorological office.  
Oceanographic data: equipment rechecked against international standards.

**Reference materials:**

User

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**Instrumentation:**

A large amount of equipment is utilised by the BAS in Antarctica. These lists reflect a small cross section of instruments felt to be most relevant to this directory:

Research stations: Dobson spectrophotometers, automatic zenith observation system (SAOZ) UV visible spectrometer, automatic weather stations, sea water level recorder, advanced ionospheric sounder (AIS), zenith sky visible spectrometer for observing NO<sub>2</sub> in the atmosphere, magnetometers, riometers, meteorological instruments, infra-red gas analyser for CO<sub>2</sub>, and UV spectrophotometers.

Aircraft equipment: Zeiss RMK A15/23 air camera, ice sounding radar equipment and Lacoste-Romberg gravimeter.

Ground surveys: BISON 24-channel seismic recording system, a pair of Tellurmat CMW 20 tellurometers and ice sounding radar (BAS-SPRI Mark 4).

On-ship equipment: laboratories and workshops, meteorological data logger, infra-red radiometer for sea surface temperature, equipment for air sampling and a conductivity/-temperature/depth profiler.

**Databases:**

BAS houses the UK's Antarctic Environmental Data Centre as part of the NERC (Natural Environment Research Council) range of data centres.

The AEDC provides a gateway to BAS databases including marine, terrestrial, meteorological, oceanographic, upper atmospheric and glaciological databases.

**Programme Participation:**

All Antarctic programmes are discussed within the framework of the Scientific Committee on Antarctic Research (SCAR). There are Antarctic elements in many international programmes (IGBP, JGOFS, WCRP) and BAS participates in these.

**Publications:**

"Antarctica 2000", 1990/1991 Report.

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**Personnel: 430**

**Budget: 34 MIL US\$**

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**British Standards Institution (BSI)**

2 Park Street  
London W1A 2BS  
United Kingdom

Contact: Mr. Chris Sheldon

Telephone: +44 71 629 9000

Telefax: +44 71 629 0506

Telex: 266933 BSILON

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**Type of Organization:**

Non-Governmental Organization

**Geographical Scope:**

International

**Activities:**

Coordination

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Soil, Biosphere, Food,

Environment and development

Other: Noise pollution, technical standardization

---

**Keywords:**

10110 AIR QUALITY

10380 INDOOR AIR POLLUTION

12100 SOILS

13000 FRESHWATER

14142 MARINE POLLUTION

15107 ENVIRONMENTAL MANAGEMENT

22154 NOISE POLLUTION

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**Activities Related to Measurements and Monitoring:**

BSI produces a wide range of standards on measurement techniques and practices for environmental measurement and land Management, following national and international meetings of experts.

**Scope of the Measurements/Activities:**

Pollutant control monitoring, early warning or vigilance systems, development and control of reference materials, identification of pollution sources and the design and assessment of environmental management systems.

**Reference materials:**

Supplier; Certifier; Consultancy Service; Advisory Service

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**Instrumentation:**

Those used in instrumented methods of analysis.

**Programme Participation:**

DTI's Environmental Programme; The Business and Environment Unit.  
ISO Standards Programme

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**Commonwealth Human Ecology Council (CHEC)**

57/58 Stanhope Gardens  
London SW7 5RF  
United Kingdom

Contact: Mrs. Zena Daysh, Executive Vice-Chairman

Telephone: +44 71 373 6761

Telefax: +44 71 244 7470

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Commonwealth

**Activities:**

Policy development  
Coordination  
Education  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Flora, Fauna, Human, Cross media, Food, Ecosystem, Environment and  
development, Environment and social conditions  
Other: International research for human ecology.

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**Keywords:**

12728 ECOLOGICAL BALANCE  
16464 SOCIAL AND CULTURAL INDICATORS  
23000 HUMAN HEALTH  
23132 HUMAN EXPOSURE TO POLLUTANTS  
28102 AGRICULTURAL ECOLOGY

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**Activities Related to Measurements and Monitoring:**

CHEC`s action programme includes:

- Formal and non formal education initiatives.
- Identification of appropriate technological and financial mechanisms.
- Establishment of communication and information technology networks for rural development.
- Establishment of an Amerindian centre in Guyana as a prototype for other indigenous resource development centres.
- Continuation of the establishment of national CHEC`s.

**Scope of the Measurements/Activities:**

Conservation of atmosphere, land and freshwater resources.

Conservation of biological diversity.

Prevention of illegal traffic in toxic products and wastes.

Protection of oceans, seas and coastal areas and the rational use and development management of biotechnology and hazardous wastes.

Improvement in the quality of life and human health.

Improvement in the living and working conditions of the poor, by eradicating poverty and stopping environmental degradation.

**Reference materials:**

Producer

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**Programme Participation:**

Most national CHEC`s are involved in scientific programmes; some in the biological control of pests, some in social research and some in forestry research.

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**Commonwealth Secretariat**

Marlborough House, Pall Mall  
London SW1Y 5HX  
United Kingdom

Contact: Dr. J.A.J. Perera, Project Officer

Telephone: +44 71 747 6215

Telefax: +44 71 839 6174

Telex: 27678

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**Type of Organization:**

Intergovernmental Organisation

**Geographical Scope:**

Regional

Commonwealth

**Activities:**

Management and Enforcement

Coordination

Research

Monitoring

Assessment

Data/Information management

**Sectors:**

Atmosphere, Hydrosphere, Marine water, Fresh water, Lithosphere,  
Sediment, Soil, Biosphere, Flora, Fauna, Human, Cross media, Ecosystem,  
Food, Environment and development, Environment and social conditions

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**Keywords:**

22300 POLLUTION ABATEMENT

25100 POLLUTANT MONITORING

25124 IDENTIFICATION OF POLLUTANTS

25172 POLLUTANT SOURCE IDENTIFICATION

25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

Holding international meetings, conferences, workshops, training courses, symposiums and awareness programmes.  
Issuing guidelines.  
Preparing and publishing records, manuals, reports, books and other publications.  
Providing support for professionals.  
Research assistance for selected projects.  
Science management.

**Scope of the Measurements/Activities:**

Pollution control and monitoring, early warning, studies on climate change and remedies, identification of pollutant sources and the introduction of verification methods and models.

**QA/QC Activities:**

QA programme on selected fields and Intercomparison Studies on chemical research and environmental needs.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Equipment specific to the study in hand.

**Databases:**

Joint CSC/RSC database with the Royal Society of Chemistry.  
Hazardous Waste regional centres in Australia, Canada, India, Kenya, Caribbean, Nigeria and Malawi.

**Programme Participation:**

Global project on chemical research and environmental needs.  
Global Hazardous Waste Management project.

**Publications:**

Books and leaflets on many diverse areas of environmental studies.  
Commonwealth Science Council Biennial Report.

**Meetings:**

Every two years CSC members meet to review programmes undertaken. The executive Committee has eleven members reflecting different geographic areas and levels of scientific capability within the Commonwealth.

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**Personnel: 15**

**Budget: 1 146 225 US\$**

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**Department of Transport  
Transport and Road Research Laboratory (TRRL)**

Room C19/01  
2 Marsham Street  
London SW1P 3EB  
United Kingdom

Contact: Mr. D.R. Instone

Telephone: +44 71 276 6411

Telefax: +44 71 276 6419

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
United Kingdom

**Activities:**

Management and Enforcement  
Research  
Monitoring

**Sectors:**

Outdoor air, Indoor air  
Other: Road Transport

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**Keywords:**

10300 AIR POLLUTION  
10380 INDOOR AIR POLLUTION  
10418 CLIMATIC CHANGE  
15232 ENVIRONMENTAL IMPACT  
19263 ROAD TRANSPORT  
22154 NOISE POLLUTION

---

**Activities Related to Measurements and Monitoring:**

Develop UK policy on vehicle noise and emission standards.

In this connection the UK Transport and Road Research Laboratory is commissioned to develop improved techniques for assessing the environmental impacts of road and traffic, and methods of ameliorating these problems. TRRL research has studied ways of measuring and quantifying general traffic nuisance, of making vehicles quieter and of reducing noise by acoustically absorbing road surfaces and noise barriers, and was assisted in developing better emissions test cycles, predicting air pollution around roads, and analysing in-service emissions from diesel and petrol engines.

**Scope of the Measurements/Activities:**

Research into pollution control monitoring, development of control and reference systems, and for assessing techniques for reducing environmental pollution.

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**Greenpeace  
Exeter Research Laboratory**

**Earth Resources Centre.  
University of Exeter  
Exeter EX4 4QE  
United Kingdom**

Contact: Dr. Paul Johnston, Unit Head

Telephone: +44 392 263 917

Telefax: +44 392 263 907

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Marine water, Fresh water, Sediment, Fauna, Ecosystem

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**Keywords:**

10300 AIR POLLUTION  
14142 MARINE POLLUTION  
22100 POLLUTANTS  
23124 ENVIRONMENTAL HEALTH HAZARDS  
25000 MONITORING AND ENVIRONMENTAL DATA  
25100 POLLUTANT MONITORING  
25124 IDENTIFICATION OF POLLUTANTS

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**Activities Related to Measurements and Monitoring:**

Issuing guidelines and treatises on environmentally related subjects.

**Scope of the Measurements/Activities:**

Identification of pollutant sources.  
Analysis of regulatory compliance.  
Ecosystem response.

**QA/QC Activities:**

QC procedures performed for organic and inorganic analyses and participation in occasional inter-comparisons.

**Reference materials:**

User

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**Instrumentation:**

CP-AES  
GC-MSD  
GC-E

**Databases:**

In house database comprising more than 10 000 articles.  
Use of current contents.

**Publications:**

Scientific Articles on many environmental subjects and topics, particularly those of pollution and environmental impact assessment.

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**Personnel: 5**

**Budget: Variable**

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**The European Group for Ecological Action (ECOROPA)**

**Crick Howell**  
**Powys NP8 1TA**  
**Wales, United Kingdom**

**Contact:** Fern Morgan-Grenville, Director

**Telephone:** +44 873 810758

**Telefax:** +44 873 810758

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

Global

**Activities:**

Education

**Sectors:**

Flora, Fauna, Environment and development  
Other: Nuclear Power

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**Keywords:**

12728 ECOLOGICAL BALANCE  
27000 ENVIRONMENTAL AWARENESS  
27130 ENVIRONMENTAL EDUCATION  
27170 PUBLIC INFORMATION

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**Activities Related to Measurements and Monitoring:**

Issuing of leaflets on various environmental topics for mass distribution

**Reference materials:**

Producer; Supplier

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**Global Environment Monitoring System  
Monitoring and Assessment Research Centre (MARC)**

King's College London,  
The Old Coach House, Campden Hill  
London W8 7AD  
United Kingdom

Contact: Prof. P. J. Peterson, Director

Telephone: +44 71 376 1577

Telefax: +44 71 937 5396

E-Mail: marc@ash.cc.kcl.ac.uk

(JANET/EARN)

Telex: 915407

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**Type of Organization:**

United Nations Organization

**Geographical Scope:**

Global

**Activities:**

Monitoring

Assessment

Data/information management

**Sectors:**

Fresh water, Outdoor air, Food, Human

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**Keywords:**

15236 ENVIRONMENTAL IMPACT ASSESSMENT

23132 HUMAN EXPOSURE TO POLLUTANTS

25000 MONITORING AND ENVIRONMENTAL DATA

25300 MONITORING TECHNIQUES AND EQUIPMENT

26200 INTERNATIONAL ENVIRONMENTAL RELATIONS

27110 DATA PROCESSING

27140 ENVIRONMENTAL TRAINING

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**Activities Related to Measurements and Monitoring:**

As a part of GEMS, the main aim of MARC is to help international and intergovernmental organizations address global environmental issues.

As a WHO Collaborating Centre, MARC has interests in environmental health issues in particular the monitoring and assessment of human exposure to environmental contaminants.

**Scope of the Measurements/Activities:**

Storing and processing environmental data.

Environmental data evaluation and assessments.

Organizing training programmes at the national level on environmental and environmental health monitoring aimed at helping developing countries acquire and develop low-cost monitoring and assessment techniques.

Preparing research reports on specific aspects of monitoring and the environment.

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**Programme Participation:**

GEMS/air, GEMS/water, GEMS/food, GEMS/HEALS.

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**Institute of Terrestrial Ecology (ITE)  
Merlewood Research Centre**

Windermere Road  
Grange-Over-SandsCumbria LA11 6JU  
United Kingdom

Contact: Dr. Michael Hornung

Telephone: +44 53 953 2264

Telefax: +44 53 953 4705

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
United Kingdom

**Activities:**

Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Outdoor air, Fresh water, Soil, Biosphere

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**Keywords:**

10300 AIR POLLUTION  
12100 SOILS  
13000 FRESHWATER  
25324 CALIBRATION OF MEASURING EQUIPMENT  
26116 ENVIRONMENTAL LAWS

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**Activities Related to Measurements and Monitoring:**

Participation in international meetings, multi-national projects and exchange programmes.  
Development of methods handbooks and guidelines.  
Training overseas scientists.  
Hosting international meetings.  
Participation in standardization programmes.

**Scope of the Measurements/Activities:**

- Pollution monitoring
- Analysis of reference materials
- Multi-national research projects
- Identification of sources of pollution
- Investigation of impacts of pollutants

**Reference materials:**

User; Certifier

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**Instrumentation:**

- Inductively coupled plasma (Optical Emission Spectrophotometer) (ICP)
- Continuous flow colorimetry (CF)
- Ion chromatograph (IC)
- Atomic adsorptions (2) (AA) one with graphite furnace attachment
- High performance liquid chromatograph (HPLC)

**Meetings:**

- Meeting being organised on "Problems and advances in chemical analyses of natural waters for environmental research".
- Meeting being organised on critical loads: Scientific basis methods of evaluation.
- Participation in CEC Standardization Programme.
- Participation and issuing of "standards" as parts of Tropical Soils and Biological Fertility Programme.

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**International Association on Water Quality (IAWQ)**

1 Queen Anne's Gate  
London SW1H 9BT  
United Kingdom

Contact: Mr. Anthony Milburn, Executive Director

Telephone: +44 71 222 3848

Telefax: +44 71 233 1197

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Research  
Data/Information management

**Sectors:**

Hydrosphere, Marine water, Fresh water, Sediment, Environment and development, Environment and social conditions  
Other: IAWQ is a professional association.

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**Keywords:**

13172 SUBTERRANEAN WATER  
13180 SURFACE WATERS  
13378 WATER POLLUTION  
22122 HAZARDOUS WASTES  
25270 WATER QUALITY

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**Activities Related to Measurements and Monitoring:**

Biennial international conferences on all aspects of water pollution control and water quality management.  
Specialized conferences on specific topics related to water pollution control and water quality management.

**Scope of the Measurements/Activities:**

The scope of IAWQ's interest includes the source and effect of water pollutants, including:

- Hazardous wastes and source control.
- Waste water treatment processes.
- Water reuse.
- Environmental restoration.

These points are applied to all surface waters including marine and ground water.

**Reference materials:**

Producer

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**Instrumentation:**

None used by the Headquarters staff, as it is mainly an administrative body.

**Publications:**

IAWQ publications:

- Water Research Journal (Monthly)
  - Water Science and Technology Journal (24 issues per annum).
  - Water Quality International Magazine (Quarterly)
  - IAWQ Scientific and Technical Reports.
-

**International Organization of Consumers Unions (IOCU)**

9, White Lion Street  
London N1 9PD  
United Kingdom

Contact: Mrs. Maura Dalton

Telephone: +44 71 865 9006      E-Mail: iocudgol@geo2.geonet.de (Internet)  
Telefax: +44 71 865 9007      Telex: +41 82202908 10 D

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**Type of Organization:**  
Non-Governmental Organization  
International

**Geographical Scope:**  
Global

**Activities:**  
Policy development  
Coordination  
Education

**Sectors:**  
Cross media, Food, Environment and development, Environment and social conditions  
Other: Consumers and the environment.

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**Activities Related to Measurements and Monitoring:**  
International meetings and publications on consumers and the environment.

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**International Petroleum Industry Environmental Conservation  
Association (IPIECA)**

Monmouth House, 87-93 Westbourne Grove  
London W2 4UL  
United Kingdom

Contact: Mr. John Lemlim, Executive Secretary

Telephone: +44 71 221 2026

Telefax: +44 71 229 4948

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Coordination  
Education  
Research  
Assessment

**Sectors:**

Marine water, Flora, Fauna, Ecosystem

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**Keywords:**

10418 CLIMATIC CHANGE  
13378 WATER POLLUTION  
14375 MARINE RESOURCES CONSERVATION  
22130 INDUSTRIAL EMISSIONS  
22280 OIL SPILLAGES

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**Activities Related to Measurements and Monitoring:**

IPIECA identifies four key global issues on which it actively focuses:  
Global climatic change, Oil spill preparedness and response, Agenda 21 and  
biodiversity and Transportation emissions management.  
Outputs include seminars, workshops, symposium, regular working groups  
and task force meetings. These are all international in scope.

**Scope of the Measurements/Activities:**

To share with the International Community Industry (petroleum sector) viewpoints, expertise and needs and concerns regarding key global issues.

**QA/QC Activities:**

Internal and external peer review process for all publications and meetings.

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**Instrumentation:**

Booms, skimmers, absorbents, sprayers, dispersants, radio communications, boats, vacuum trucks, pumps and hoses.

**Programme Participation:**

IPIECA has provided 2 million US dollars over three years for research in to the effect of clouds and oceans on the climate change mechanisms, at the Healey Centre for climate research (UK) and at the Lamont-Doherty geological institute in New York.

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**International Society for the Prevention of Water Pollution  
(ISTPOWP)**

"Little Orchard" Bentworth  
Alton Hampshire GU34 5RB  
United Kingdom

Contact: Mr. R. Maitland Earl, Chairman

Telephone: + 44 0420 562 225

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Education  
Research  
Assessment  
Data/Information management

**Sectors:**

Marine water, Fresh water, Snow/Ice, Environment and development,  
Environment and social conditions

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**Keywords:**

13132 LAKES  
13188 WATER RESOURCES CONSERVATION  
13313 RIVER POLLUTION  
13378 WATER POLLUTION  
13420 DRINKING WATER  
25270 WATER QUALITY

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**Activities Related to Measurements and Monitoring:**

Preventing in every possible way, the pollution of the water of the planet.  
Investigation of water pollution problems and ascertaining their causes.  
Collating information concerning water pollution and helping provide  
solutions.



**Scope of the Measurements/Activities:**

- Early warnings of pollution.
- Identification of pollution causes.
- Drawing attention to the polluters.

**Reference materials:**

User; Producer; Supplier

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**International Waterfowl and Wetlands Research Bureau (IWRB)**

Slimbridge  
Gloucester GL2 7BX  
United Kingdom

Contact: Dr. Michael Moser, Director

Telephone: + 44 453 890 624

Telefax: +44 453 890 697

Telex:437145 IWRB G

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Monitoring  
Data/Information management  
Coordination  
Assessment  
Research

**Sectors:**

Marine water, Fresh water, Biosphere, Fauna, Ecosystem, Environment and development

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**Keywords:**

12600 WETLANDS ECOSYSTEMS  
12722 BIRDS  
12726 CONSERVATION OF GENETIC RESOURCES  
12756 MIGRATORY SPECIES  
12788 WILDLIFE HABITATS  
15107 ENVIRONMENTAL MANAGEMENT  
15145 NATURE CONSERVATION  
15264 POLICY PLANNING  
25220 ENVIRONMENTAL MONITORING  
25285 WILDLIFE POPULATION STATISTICS  
27110 DATA PROCESSING  
27130 ENVIRONMENTAL EDUCATION  
27140 ENVIRONMENTAL TRAINING  
29316 DUTCH

29317 ENGLISH  
29323 FRENCH  
29326 GERMAN  
29361 RUSSIAN  
29367 SPANISH  
30100 AFRICA  
30200 AMERICAS  
30300 ASIA  
30400 EUROPE  
30600 OCEANS AND SEAS

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**Activities Related to Measurements and Monitoring:**

International Waterfowl Census

- Coordination of a long-term monitoring programme for waterbirds in Europe, Asia, Africa and the Neotropics.
- Standardization of methodology and holding of international databases, but working through national coordinators.

Organizing international conferences and technical workshops; Coordinating training on wetland inventory, monitoring and management; Coordinating specialist groups on water birds and wetlands issues; Assessing global priorities for wetland and waterfowl conservation; Coordinating data collection on waterbird population monitoring and wetlands of international importance; Development and promotion of standardised methodologies for the classification, inventory and monitoring of wetlands (Ecological emphasis, in relation to conservation goals); Publishing reports on waterbird population status and trends; Topical issues in wetland and waterbird management; Application of data to support international conventions such as RAMSAR, BONN and Biodiversity conventions.

**Scope of the Measurements/Activities:**

Monitoring status and trends in waterbird populations.

Compiling information on wetlands of international importance (and specifically sites listed under the RAMSAR convention).

These steps are taken in order to identify priorities for conservation and develop strategies for the conservation and sustainable use of wetland habitats and their biodiversity.

**QA/QC Activities:**

QA and QC is informally conducted through a variety of in-house procedures.

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**Databases:**

The International Waterfowl Census Database contains site based waterbird counts used for monitoring populations and identifying key resorts and major threats.

The RAMSAR site database contains information on sites (621 worldwide) designated for the "List of Wetlands of International Importance", established under the inter-governmental treaty signed at Ramsar, Iran in 1971.

**Publications:**

"IWRB News" (monthly)

**Meetings:**

"Mediterranean Wetlands", Grado, Italy, February 1991

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**Personnel: 15**

**Budget: 500 000 US\$**

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**International Whaling Commission (IWC)**

**The Red House**  
135 Station Road, Histon  
Cambridge CB4 4NP  
United Kingdom

Contact: Dr. Ray Gambell, Secretary

Telephone: +44 223 233971  
Telefax: +44 223 232876

E-Mail: CA100@UK.AC.CAM.PHX

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**Type of Organization:**

Intergovernmental Organisation

**Geographical Scope:**

Global

**Activities:**

Policy development  
Management and Enforcement  
Coordination  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Marine water

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**Keywords:**

12708 ANIMAL RESOURCES  
12730 ENDANGERED ANIMAL SPECIES  
12786 WILDLIFE CONSERVATION  
25285 WILDLIFE POPULATION STATISTICS

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**Activities Related to Measurements and Monitoring:**

The main duty of the IWC is to keep under review and revise as necessary, the measures laid down in the Schedule to the Convention which govern the conduct of whaling throughout the world. These measures, among other things, provide for the complete protection of certain species; designate specified areas as whale sanctuaries; set limits on the maximum number of whales which may be taken in any one season; prescribe open and closed

seasons and areas for whaling; set limits on the size of whales that may be killed and prohibit the capture of suckling calves and female whales accompanied by calves.

The compilation of catch reports and other statistical and biological records is also required.

**Scope of the Measurements/Activities:**

Assessment of whale stock abundance.

Monitoring of whale catches.

**Reference materials:**

User; Producer

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**Databases:**

Whale sightings.

Whale catch records.

**Programme Participation:**

International Decade of Cetacean Research: Antarctic minke whale assessment cruises.

**Publications:**

Annual Reports dealing with special issues relating to particular species of whales and specified areas of research etc.

**Meetings:**

Annual Meetings held.

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**Personnel: 15**

**Budget: 1.5 MIL US\$**

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**National Radiological Protection Board (NRPB)**

**Chilton Didcot  
Oxon OX11 0RQ  
United Kingdom**

**Contact:** Miss. F.A. Fry, Assistant director.

**Telephone:** +44 235 831 600

**Telefax:** +44 235 833 891

**Telex:** 837124 RADPRO G

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
United Kingdom

**Activities:**

Research  
Policy development  
Assessment

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Marine water, Fresh water, Lithosphere, Sediment, Soil, Rock, Biosphere, Flora, Fauna, Human, Cross media, Food, Ecosystem

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**Keywords:**

10110 AIR QUALITY  
10380 INDOOR AIR POLLUTION  
12100 SOILS  
12148 SEDIMENTATION  
13000 FRESHWATER  
23418 FOOD  
25250 MARINE MONITORING  
25265 QUALITY CONTROL  
25324 CALIBRATION OF MEASURING EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

Development of criteria for the protection of public and workers from both ionising and non-ionising radiation.  
Assessment of doses from natural radiation and from routine and accidental discharge of radionuclides.  
Investigation of the behaviour of radioactive material in the environment.  
Participation in national and international meetings.

**Scope of the Measurements/Activities:**

Radioactive pollutant monitoring.  
Identification of levels of domestic radioactivity.  
Model verification.  
Improved understanding of the behaviour of radioactive material, verification of models and assessment of doses.

**QA/QC Activities:**

Quality assurance to BS 5750 or equivalent standard.  
NAMAS accreditation where appropriate.

**Reference materials:**

User

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**Instrumentation:**

Dose rate instruments suitable for measuring environmental gamma ray doses.  
Track etch detectors for measuring radon concentrations.  
Germanium detectors for in-situ gamma ray spectrometry.  
Sampling of environmental materials followed by laboratory measurements of radionuclides by gamma ray spectrometry (germanium detectors), beta counting (low background proportional counter) and alpha spectrometry (surface barrier detector).  
Broad band solar radiation monitoring equipment to measure UVR, UVA and visible radiation.

**Databases:**

Published information on discharges of radioactive materials and concentrations of radioactive material in environmental samples.  
Solar radiation measurements.

**Programme Participation:**

CEC and IAEA.

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**Personnel: 320**

**Budget: 20 MIL US\$**

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**Meteorological Office (Met.O.)  
Observation Provision Branch (OP)**

London road  
Bracknell RG12 2UR  
United Kingdom

Contact: Mr. R.J. Shearman, Branch director

Telephone: +44 344 856 625

Telefax: +44 344 856 412

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional

Europe

**Activities:**

Monitoring

**Sectors:**

Outdoor air, Atmosphere

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**Keywords:**

10150 GREENHOUSE GASES

10300 AIR POLLUTION

25188 RADIATION MONITORING

25210 ATMOSPHERIC MONITORING

28157 METEOROLOGY

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**Activities Related to Measurements and Monitoring:**

The Meteorological Office contributes to the GAW Programme of WMO.

Making radiation measurements, ozone, atmospheric turbidity, chemical composition of precipitation.

Collection of data and maintenance of archives of national land surface, upper air and global marine climate.

**Scope of the Measurements/Activities:**

General observation of climate (not restricted to change), including marine climate.

**QA/QC Activities:**

Participation in international QA and performance of QC on data received

**Reference materials:**

User; Producer; Certifier; Supplier

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**Instrumentation:**

Full range of manual and automatic surface and upper air instrumentation.

**Databases:**

UK national archive of land surface and upper air data.

Global archive of marine surface data.

Global archive for upper air data over land and sea.

**Programme Participation:**

Contribution to the GAW programme of WMO. Making measurements of radiation, ozone, atmospheric turbidity and chemical composition of precipitation.

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**Personnel:** 130

**Budget:** 6.5 MIL US\$

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**Water Engineering and Development Centre (WEDC)  
Loughborough University of Technology**

Loughborough LE11 3TU  
United Kingdom

Contact: Mr. L.G. Hutten

Telephone: +44 509 222 619  
Telefax: +44 509 610 231

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**Type of Organization:**  
Academic Organization

**Geographical Scope:**  
National  
United Kingdom

**Activities:**  
Education  
Research

**Sectors:**  
Outdoor air, Indoor air, Fresh water, Biosphere

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**Keywords:**  
10300 AIR POLLUTION  
10380 INDOOR AIR POLLUTION  
13000 FRESHWATER

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**Activities Related to Measurements and Monitoring:**  
WEDC Offer courses and training programmes especially in water analysis and quality and water and environmental management.

**Scope of the Measurements/Activities:**  
Identification, quantification and analysis to control pollution.

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**Instrumentation:**  
Physical, chemical, biological, bacteriological analysis techniques.

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**North Atlantic Salmon Conservation Organization (NASCO)**

11 Rutland Square  
Edinburgh EH1 2AS  
United Kingdom

Contact: Dr. M.L. Windsor, Secretary

Telephone: +44 31 228 2551

Telefax: +44 31 228 4384

Telex:94011321 nasc g

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**Type of Organization:**

Intergovernmental Organisation

**Geographical Scope:**

Regional  
North Atlantic

**Activities:**

Policy development  
Management and Enforcement  
Research

**Sectors:**

Biosphere, Fauna

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**Keywords:**

14360 FISH  
17154 FISHERIES MANAGEMENT  
30604 NORTH ATLANTIC OCEAN

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**Activities Related to Measurements and Monitoring:**

Annual intergovernmental meetings and negotiations on the conservation and management of the North Atlantic Salmon.

**Scope of the Measurements/Activities:**

Management of fisheries.

**Reference materials:**

Producer

**Databases:**

Laws, regulations and programmes database.  
Database of Atlantic Salmon rivers.  
Database of tag-release information.

**Publications:**

Biennial report on the activities of the organization.  
Annual reports on the meetings of the council and regional commissions.  
Handbook of basic texts.  
Guidelines to minimise the threats to wild Salmon stocks from Salmon aquaculture.  
Protocols for the introduction and transfer of Salmonoids (in the north American commission area).

**Meetings:**

Annual meetings of council and regional commissions.  
(additional meetings where required).

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**Personnel: 4**

**Budget: 298 520 (Pound Sterling)**

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**Oslo and Paris Commissions (OSPARCOM)**

**New Court, 48 Carey Street  
London WC2A 2JQ  
United Kingdom**

**Contact:** Ms. Claire Nihoul, Secretary

**Telephone:** +44 71 242 9927

**Telefax:** +44 71 831 7427

**Telex:** 21185 bospar

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**Type of Organization:**

Intergovernmental Organisation

**Geographical Scope:**

Regional

North-east Atlantic

**Activities:**

Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Marine water, Biosphere, Flora,  
Fauna, Human, Cross media, Ecosystem, Environment and development

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**Keywords:**

13188 WATER RESOURCES CONSERVATION

13378 WATER POLLUTION

14142 MARINE POLLUTION

22444 SEA OUTFALL

25180 POLLUTION MONITORING

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**Activities Related to Measurements and Monitoring:**

Experts meet regularly in various working groups established by the commissions. After studying latest scientific evidence available and data compiled by the Secretariat, they make proposals for programmes and measures to be considered by the annual meetings of the commissions.

The Commissions publish an annual report together with a number of technical reports.

**Scope of the Measurements/Activities:**

Prevention and elimination of pollution of the marine environment of the North East Atlantic, from land-based sources and by dumping from ships and aircraft.

**QA/QC Activities:**

Ringtests, intercomparison and intercalibration exercises are conducted by participating national laboratories.

**Reference materials:**

User; Producer

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**Instrumentation:**

Decisions, recommendations and guidelines.

**Databases:**

Inputs of contaminants data, through dumping, atmosphere, oil exploitation and river sources.

**Programme Participation:**

Cooperation with other international bodies such as the Baltic Environment Protection Commission (HELCOM). ECE-LRTAP/EMEP.

**Publications:**

Annual report  
Various technical reports

**Meetings:**

Working groups established by the Commissions

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**Personnel: 9**

**Budget: 750 000 US\$**

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**Panos**

9 White Lion Street  
London N1 9PD  
United Kingdom

Contact: Mr. Simon Burne, Executive Director

Telephone: +44 71 278 1111

E-Mail: gn:panoslondon

Telefax: +44 71 278 0345

Telex: 9419293 panos g

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Data/Information management

**Sectors:**

Human, Environment and development, Environment and social conditions  
Other: A specialist picture library with 100 000 photographs on development and the environment

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**Keywords:**

10445 GLOBAL WARMING  
11148 NATURAL RESOURCES  
15284 SUSTAINABLE DEVELOPMENT  
16426 HUMAN MIGRATION  
23232 IMMUNOLOGICAL DISEASES  
27170 PUBLIC INFORMATION

---

**Activities Related to Measurements and Monitoring:**

Panos is an independent information organization with offices in London, Paris and Washington, working internationally for the promotion of development which is, socially, environmentally and economically sustainable. It combines careful research with imaginative and forceful dissemination of information. Panos works on key global issues such as AIDS, environment and race, biotechnology, global warming, media pluralism, migrant communities and narcotics.



**Reference materials:**

User; Producer; Certifier; Supplier

**Databases:**

Large and extensive NGO and media contacts.

**Publications:**

Panos Books.

Panos Features- environment and development news.

Media Briefings.

Down to Earth- a radio programme on environment and development.

Panoscope- a magazine on environment and development.

WorldAIDS- a magazine with news on AIDS and development.

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**Personnel: 30**

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**Royal Society for Nature Conservation (RSNC)  
The Wildlife Trusts Partnership**

The Green, Witham Park, Waterside South  
Lincoln LN5 7JR  
United Kingdom

Contact: Mr. Tim Cordy

Telephone: +44 522 54 44 00

Telefax: +44 522 51 16 16

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
United Kingdom

**Activities:**

Policy development  
Coordination  
Monitoring  
Assessment

**Sectors:**

Fauna, Biosphere, Outdoor air

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**Keywords:**

10150 GREENHOUSE GASES  
10300 AIR POLLUTION  
12734 FAUNA  
12784 WILDLIFE

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**Scope of the Measurements/Activities:**

Development of community based initiatives for the conservation of wildlife.  
Road development.  
Air pollution monitoring.  
Monitoring ground level ozone pollution (WATCH project).

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**Royal Society of Chemistry(RSC)**

**Burlington House Piccadilly  
London W1V 0BN  
United Kingdom**

**Contact: Dr. T.D. Inch, Secretary General**

**Telephone: +44 71 437 8656**

**Telefax: +44 71 734 1227**

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
United Kingdom

**Activities:**

Policy development  
Education  
Data/Information management

**Sectors:**

Atmosphere, Hydrosphere, Environment and development  
Other: Waste

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**Keywords:**

00000 HARMONIZATION  
10110 AIR QUALITY  
10380 INDOOR AIR POLLUTION  
13000 FRESHWATER  
23208 CARCINOGENS  
23418 FOOD  
25140 POLLUTANT ANALYSIS  
27160 INFORMATION TECHNOLOGY

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**Activities Related to Measurements and Monitoring:**

Development of methods for contaminants e.g. carcinogens (under contract to CEC).  
Holding national and international meetings on measurement and related environmental matters.

Harmonization of methods for the evaluation of waste products.

**Scope of the Measurements/Activities:**

Advising national and international bodies on measurement for monitoring, early warning systems and identification of sources.

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**Instrumentation:**

No laboratory facilities

**Databases:**

Analytical Abstracts (available on-line or on CD-Rom).

**Programme Participation:**

Joint Initiative on Wastes with Commonwealth Science Council.

**Publications:**

Analytical Abstracts.

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**Personnel: 300**

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**Tidy Britain Group (TBG)**

**The Pier**  
**Wigan WN3 4EX**  
**United Kingdom**

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**Type of Organization:**  
Non-Governmental Organization  
National

**Geographical Scope:**  
National  
United Kingdom

**Activities:**  
Coordination  
Education  
Research  
Monitoring  
Assessment  
Data/Information management

**Sector:**  
Other: Monitoring and research concerning litter and refuse both on land and in water.

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**Keywords:**  
15107 ENVIRONMENTAL MANAGEMENT  
22140 LITTER  
25000 MONITORING AND ENVIRONMENTAL DATA  
25220 ENVIRONMENTAL MONITORING

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**Scope of the Measurements/Activities:**  
A systematic approach to litter abatement, using continuous monitoring of litter and its changes over time.

**QA/QC Activities:**  
All surveyors have to attend a training course. The results are then given, along with relevant statistical accuracy.

**Reference materials:**  
User; Producer; Supplier

**Databases:**

Database relating to the National Cleansing Standards Survey of 1992-1993.  
Also, data collated from surveys on local authorities' attitude towards the  
Environmental Protection Act 1990 Part 4 (Litter Abatement).

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**Personnel: 96**

**Budget: 6 MIL. (Pound Sterling)**

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**UK Global Environmental Research Office (GER)**

**Polaris House North Star Avenue  
Swindon SN2 1EU  
United Kingdom**

**Contact: Mr. David A. Brown, Head**

**Telephone: +44 793 411500**

**Telefax: +44 793 411691**

**Telex: 444293 ENVRE G**

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Coordination

Policy development

Research

Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Biosphere

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**Keywords:**

10320 AIR POLLUTANTS

13378 WATER POLLUTION

15244 ENVIRONMENTAL POLICY

22300 POLLUTION ABATEMENT

25100 POLLUTANT MONITORING

25172 POLLUTANT SOURCE IDENTIFICATION

25220 ENVIRONMENTAL MONITORING

25225 ENVIRONMENTAL STATISTICS

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**Activities Related to Measurements and Monitoring:**

The aim of UK GER is to coordinate the responses to the research opportunities and challenges posed by Global Environmental Change. This is achieved by:

- A Data Task Force which reviews the whole question of GER data management.
- Reports on the relevance of data management.

- Provision and dissemination of information on UK and international science and policy developments, initiatives and contacts.
  - Establishment and maintenance of a database of current UK GER interests.
- Coordination of UK GEC research activities: The UK GEC office provides the secretariat for the UK Inter-Agency Committee on Global Environmental Change (IACGEC). The IACGEC spans the Department of the Environment, The Meteorological Office, The British National Space Centre and the five Research Councils.
- The Committee is charged with maintaining, under review, the entire UK GER research interest.

**Scope of the Measurements/Activities:**

Monitoring and observation of cloud position, orographic processes and tropospheric chemistry.  
Pollutant monitoring of carbon, nitrogen, oxygen, phosphorous and sulphur on the production levels of terrestrial and aquatic biota.

**QA/QC Activities:**

The IACGEC has a Data Task Force which reviews the GER data management process.

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**Instrumentation:**

Supercomputers  
Space-based observational technology, such as meteorological satellites.  
Earth-based observational technology in the form balloon or aircraft borne instrumentation.

**Databases:**

The UK GER Data Network Facility (GENIE project).  
A current database of UK GER interests.

**Programme Participation:**

GENIE Project. GENIE endeavours to network relevant data centres and compile a meta-data Master Directory, providing information on location, format and conditions of access.

**Publications:**

A bi-monthly relay of information, news and opportunities, via the publication "The Globe".

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**Warren Spring Laboratory (WSL)**

Gunnels Wood Road  
Stavenage  
Hertfordshire SG1 2BX  
United Kingdom

Contact: Mr. Neil Hurford, Business development manager

Telephone: +44 438 741 122

Telefax: +44 438 360 858

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Outdoor air, Indoor air, Marine water, Soil, Rock  
Other: ,Oil pollution, waste recovery and incineration

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**Keywords:**

10300 AIR POLLUTION  
10310 ACID RAIN  
12100 SOILS  
14142 MARINE POLLUTION  
25265 QUALITY CONTROL  
25324 CALIBRATION OF MEASURING EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

Activities in the following areas: Air pollution (ambient air and emission), wastes, effluents and contaminated lands and marine pollution.

The undertaking of applied research, technical services and consultancy under contract for customers in both the private and public sectors.

National Laboratory for UK Air Pollution measurements.

Co-ordinator and operator of national air pollution measurement networks.

Designated UK Laboratory vis-a-vis EC Air Pollution Directives.  
Operating 3-year programme to incorporate environmental measurements into wider UK National Measurement System.  
Setting up national calibration centre for air pollution measurements.  
Participate in such exercises in Europe as designated UK Laboratory.

**Scope of the Measurements/Activities:**

Establishment of air pollution distributions in time and space across U.K.  
Monitoring for compliance with EC Directives and U.K. legislation.  
Validation of models  
Identification of sources  
Emission measurements  
Monitoring of ambient air quality  
Monitoring emissions from stationary and mobile sources.  
Research on pollution control and remediation techniques.

**QA/QC Activities:**

QA programme exists with accreditation under national schemes  
Participation in international QA programmes

**Reference materials:**

User; Producer; Certifier

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**Instrumentation:**

Automatic continuous air pollution analysers  
Wet chemical/filter pack/denuder measurements  
GC and GC/MS  
ICPMS etc. analysis  
HPLC  
FID/PID  
Spectrometers

**Databases:**

Air quality data for the UK covering the years from 1960 to the present.  
Clean technology database.  
Recycling database.  
National Airborne Emissions Inventory.

**Programme Participation:**

EC framework programmes.

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**Personnel: 300**

**Budget: 20 MIL US\$**

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**American Conference of Governmental Industrial Hygienists (ACGIH)**

6500 Glenway Ave. Building D-7  
Cincinnati, OH45211  
United States

Contact: Mr. Richard A. Strano

Telephone: +1 513 661 3376

Telefax: +1 513 661 7195

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
United States

**Activities:**

Education  
Monitoring

**Sectors:**

Outdoor air, Indoor air

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**Keywords:**

10110 AIR QUALITY  
10380 INDOOR AIR POLLUTION  
22102 AEROSOLS  
23330 OCCUPATIONAL HEALTH  
25366 SAMPLING TECHNIQUES

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**Activities Related to Measurements and Monitoring:**

Air Sampling Instrument Committee  
Air Sampling Procedures Committee  
Bioaerosols Committee  
Threshold Limit Values (TLV) Committee

**Scope of the Measurements/Activities:**

Occupational health monitoring.

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**Instrumentation:**

Dosimeters to personnel monitors to area monitors

**Meetings:**

International Symposium on Air Sampling Instrument Performance, October  
29 - November 1, 1991, N.C., U.S.A.

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**American Society for Testing and Materials (ASTM)**

1916 Race Street  
Philadelphia, PA19103-1187  
United States

Contact: Mr. Joseph O'Grady

Telephone: +1 215 299 5400

Telefax: +1 215 977 9679

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

Global

**Activities:**

Policy development  
Coordination

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil, Biosphere,  
Cross media, Food

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**Keywords:**

10110 AIR QUALITY  
10380 INDOOR AIR POLLUTION  
10418 CLIMATIC CHANGE  
17372 PESTICIDES  
18208 CONSUMER GOODS  
22124 HEAVY METALS  
22166 PLASTIC AND POLYMER WASTES  
22472 WASTE DISPOSAL  
23156 POLLUTANT EFFECTS  
23418 FOOD  
25108 BIOLOGICAL INDICATORS  
25250 MARINE MONITORING  
25366 SAMPLING TECHNIQUES  
26232 INTERNATIONAL STANDARDISATION  
28144 HUMAN BIOLOGY

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**Activities Related to Measurements and Monitoring:**

Standards development activities encompass metals, paints, plastics, consumer products, medical services and devices, computerized systems, electronic and many other areas.

Several Committees active in the Environmental Measurement area including:

D18 on Soil and Rock

D19 on Water

D22 on Sampling and Analysis of Atmospheres

D34 on Waste Disposal

E35 on Pesticides

E47 on Biological Effects and Environmental Fate

**Reference materials:**

User

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**Meetings:**

Several symposia are held every year.

Also, standards development meetings are held at least twice each year.

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**Antarctic and Southern Ocean Coalition (ASOC)**

717 D Street  
SE WashingtonDC 20013  
United States

Contact: Mr. James Barnes, Counsel

Telephone: +1 202 544 0236

E-Mail: econet:antarctica.igc

Telefax: +1 202 544 8483

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Antarctica

**Activities:**

Policy development  
Other: Monitoring and research of the Antarctic as a whole

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**Keywords:**

12410 ANTARCTIC ECOSYSTEMS  
12420 ANTARCTIC REGION  
30601 ANTARCTIC OCEAN

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**Activities Related to Measurements and Monitoring:**

Attend and observe international meetings of importance to Antarctic policy and preservation.  
Development and publication of protection concepts.

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**Environmental Assessment Association (EAA)**

8383 E. Evans Road  
Scottsdale Arizona 85260-3614  
United States

Contact: Mr. Troy E. Johnson, Managing Director

Telephone: +1 602 483 8100  
Telefax: +1 602 998 8022

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**Type of Organization:**  
Non-Governmental Organization  
International

**Geographical Scope:**  
Global

**Activities:**  
Education

**Sectors:**  
Outdoor air, Indoor air

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**Keywords:**  
15107 ENVIRONMENTAL MANAGEMENT  
15240 ENVIRONMENTAL IMPACT ASSESSMENT  
27000 ENVIRONMENTAL AWARENESS  
27130 ENVIRONMENTAL EDUCATION  
27140 ENVIRONMENTAL TRAINING

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**Activities Related to Measurements and Monitoring:**

EAA is a professional organization dedicated to providing members with information, education and certification in the field of environmental inspection. EAA awards members the CEI (Certified Environmental Inspector) and the CES (Certified Environmental Specialist) professional designations.

The information provided by EAA to members is designed to allow a CEI or CES to perform a basic environmental inspection based on visual examination of the property. This basic inspection provides a report presented to the client with the results of the inspection and any suggestions the CEI or CES may have.

EAA then can produce and provide reports on specific environmental topics.



**Scope of the Measurements/Activities:**

Dissemination of environmental information relevant to real estate.

EAA provides professionals with recognized credentials, such as a CEI or a CES.

**QA/QC Activities:**

ISO 9000

**Reference materials:**

User; Producer

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**Instrumentation:**

Lead checks

Radon testing

Water sampling

**Programme Participation:**

EAA works closely with many Federal and State agencies, including possession of a seat on the E50 committee board for the American Society for Testing and Materials (ASTM).

**Meetings:**

A two-day training session for the US Fish and Wildlife Service.

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**Inter-American Tropical Tuna Commission (IATTC CIAT)**

c/o Scripps Institution of Oceanography  
8604 La Jolla Shores Drive, La Jolla  
California 92037-1508  
United States

Contact: Dr. William H. Bayliff, Senior Scientist

Telephone: +1 619 546 7100, ext. 301

Telefax: +1 619 546 7133

Telex: 697 115

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional  
Eastern Pacific Ocean

**Activities:**

Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Hydrosphere, Marine water

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**Keywords:**

14000 OCEANS AND COASTAL AREAS  
14360 FISH  
14370 MARINE ECOSYSTEMS  
19310 FISHING VESSELS

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**Activities Related to Measurements and Monitoring:**

The Inter-American Tropical Tuna Commission operates under the authority and direction of a convention originally entered into by Costa Rica and the United States. The convention, which came in to force in 1950, is open to adherence by other governments whose nationals fish for tropical tunas in the eastern Pacific Ocean.

The principal duties of the Commission under the convention are:

- To study the biology of the tunas and related species of the eastern Pacific ocean, with a view to determining the effects that fishing and natural factors have on their abundance.
- To recommend appropriate conservation measures so that the stocks of fish can be maintained at levels which will afford maximum sustainable catches

In 1976 the Commissions duties were broadened to include work on the problems arising from the tuna-dolphin relationship in the eastern Pacific ocean. It was decided that the Commission should strive:

- To maintain a high level of tuna production and also
- To maintain porpoise stocks at or above levels that ensure their survival in perpetuity with every reasonable effort being made to avoid needless or careless killing of porpoise.

The specific areas of involvement were to be :

- Monitoring population sizes and mortality incidental to fishing, through the collection of data aboard tuna purse seiners.
- Aerial surveys and dolphin tagging; Analyses of abundance indices.
- Gear and behavioural research and education.

**Scope of the Measurements/Activities:**

- Monitoring catches, fishing effort and abundance of tunas.
- Monitoring abundance and mortalities, incidental to fishing of dolphins.
- Monitoring oceanographic data, particularly with reference to El Niño.

**Reference materials:**

User; Producer

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**Instrumentation:**

Oceanographic instruments

**Databases:**

Tuna catch; Fishing effort and fishing fleet data;  
Dolphin abundance and mortality; Ocean temperature data.

**Programme Participation:**

TOGA

**Publications:**

Annual Reports, Bulletins, Papers and articles in scientific and trade journals.

**Meetings:**

Intergovernmental meetings on the tuna related topics relevant to the IATTC.

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**Personnel: 75**

**Budget: 3.5 MIL US\$**

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**International Association for Environmental Hydrology (IAEH)**

AlexandriaVA 22313  
United States

Contact: Dr. Roger W. Peebles, President

Telephone: +1 703 683 9768

Telefax: +1 703 683 6137

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Coordination  
Data/Information management - - - -  
Research  
Education

**Sectors:**

Fresh water, Soil

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**Keywords:**

10418 CLIMATIC CHANGE  
13100 FRESHWATER RESOURCES  
13378 WATER POLLUTION  
22120 HAZARDOUS SUBSTANCES  
22186 TOXIC WASTE  
26200 INTERNATIONAL ENVIRONMENTAL RELATIONS  
28147 HYDROLOGY  
30020 DEVELOPING COUNTRIES

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**Activities Related to Measurements and Monitoring:**

The purpose of IAEH is to:

- foster a global interchange of ideas, approaches, and technologies for environmental clean-up of fresh water resources, especially those polluted by toxic and hazardous wastes, and pollution prevention;
- further the development of environmentally sound solutions that are realistic from the economic standpoint;
- seek solutions to clean-up and prevention that go beyond science and engineering to address the needs of all sectors of society;
- place pollution clean-up and prevention in the context of broader water resource and environmental issues, including long term changes in fresh water resources brought about by climate change;
- place special focus on approaches to clean-up and prevention that are practical in less affluent countries, including developing countries and countries with non-convertible currencies.

The activities of IAEH includes:

- issuing regular publications;
- maintaining the IAEH Register, a database with information on environmental hydrologists and environmental organizations worldwide to be made publicly available as a sources of experts in the field;
- sponsor workshops and conferences.

**Reference materials:**

User; Producer

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**International Association for Impact Assessment (IAIA)**

**Belhaven N.C. 27810  
United States**

**Contact:** Mr. Maurice E. Volland, Executive director

**Telephone:** +1 919 964 2338

**Telefax:** +1 919 964 2340

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Coordination  
Assessment

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**Keywords:**

15236 ENVIRONMENTAL IMPACT ASSESSMENT  
16464 SOCIAL AND CULTURAL INDICATORS  
25265 QUALITY CONTROL  
27140 ENVIRONMENTAL TRAINING  
27170 PUBLIC INFORMATION

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**Activities Related to Measurements and Monitoring:**

Develop approaches and practices for comprehensive and integrated impact assessment.

Improve assessment procedures and methods for practical application.

Promote training of impact assessors and public understanding of the field.

Provide professional quality assurance by peer review and other means.

Share information through informal networks, timely publications, and professional meetings.

Holds international and regional meetings.

**Scope of the Measurements/Activities:**

Technology assessment  
Environmental impact assessment  
Social impact assessment  
Risk assessment

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**Meetings:**

June 7-11, 1991, c/o Prof, Rabel J. Burdge, Institute for Environmental  
Studies, University of Illinois, Urbana, IL, U.S.A.

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**International Society for Endangered Cats (ISEC)**

4638 Winterise Drive  
Columbus 43220  
United States

Contact: Dr. John Becker, Executive Director

Telephone: +1 614 451 4460

Telefax: +1 614 451 4611

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Education  
Research  
Data/Information management

**Sectors:**

Biosphere, Fauna, Cross media, Environment and development

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**Keywords:**

12730 ENDANGERED ANIMAL SPECIES  
12786 WILDLIFE CONSERVATION  
27130 ENVIRONMENTAL EDUCATION  
27170 PUBLIC INFORMATION

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**Activities Related to Measurements and Monitoring:**

The International Society for Endangered Cats was created as a conservation organization dedicated to saving wild cats species from extinction. This is done through educational programmes.



**Databases:**

ISEC shares a database with the International Species of Informational Systems. ISEC also has it's own database on IBM compatible computer systems.

**Programme Participation:**

ISEC are working with CBSG and WWF Indonesia on a job concerning the tiger. Working with the Zambezi Society on a cheetah translocation project in Zimbabwe. Working to establish a comprehensive fund for jaguar predators in El Cielo Biosphere Reserve.

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**Personnel: 3**

**Budget: 60 000 US\$**

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**John Hopkins University  
Scientific Committee on Oceanic Research (SCOR)**

Baltimore MD 21218  
United States

Contact: Ms. Elizabeth Gross, Executive Director

Telephone: +1 410 516 40 70  
Telefax: +1 410 516 79 33

E-Mail: E.GROSS.SCOR(OMNET)  
Telex:7401472 SCOR UC

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**Type of Organization:**  
Non-Governmental Organization  
International

**Geographical Scope:**  
Global

**Activities:**  
Coordination  
Research

**Sectors:**  
Marine water, Flora, Fauna, Ecosystem

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**Keywords:**  
10418 CLIMATIC CHANGE  
25250 MARINE MONITORING  
25324 CALIBRATION OF MEASURING EQUIPMENT  
26200 INTERNATIONAL ENVIRONMENTAL RELATIONS  
26232 INTERNATIONAL STANDARDISATION  
28163 OCEANOGRAPHY

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**Activities Related to Measurements and Monitoring:**

SCOR is the main scientific advisory body of the IOC. Among their main objectives are:

- Promotion of international collaboration in oceanography, particularly on scientific topics which can benefit from a co-ordinated international effort.
- Conducting intercalibration experiments.
- Establishment of scientific working groups.
- Publication of reports.

Formulation of recommendations to intergovernmental organizations.  
Methodological workshops.  
Joint global ocean flux study.  
Global ocean ecosystem dynamics.

**Scope of the Measurements/Activities:**

Standard observations of oceanic variables  
Long-term ocean monitoring  
Observation of climate change  
Development of standards and reference materials

**Reference materials:**

User

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**Instrumentation:**

A very wide variety of oceanographic instruments, both in-situ and laboratory based.

**Databases:**

JGOFS International Data Set

**Programme Participation:**

WCRP-WOCE, TOGA, IGBP- JGOFS, LOICZ, IGAC, GOEYS GLOBEC.

**Publications:**

Several relevant reports will be published in 1991, arising from the following working groups:

- Methodologies for Oceanic CO<sub>2</sub> Measurements
  - Determination of Photosynthetic Pigments in Sea water
  - Laboratory Tests related to Basic Physical Measurements at Sea
  - Standards and Reference Materials for the Joint Global Ocean Flux Study
- 

**Personnel: 2**

**Budget: 650 000 US\$**

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**North American Coalition on Religion and Ecology (NACRE)**

5 Thomas Circle  
NW Washington DC 20005  
United States

Contact: Dr. Donald B. Conroy, President

Telephone: +1 202 462 2591

Telefax: +1 202 234 0307

---

**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
United States

**Activities:**

Education

**Sectors:**

Environment and social conditions  
Other: Religion and Ecology

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**Keywords:**

12728 ECOLOGICAL BALANCE  
16406 COMMUNITY PARTICIPATION  
16464 SOCIAL AND CULTURAL INDICATORS

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**Activities Related to Measurements and Monitoring:**

The vision of NACRE is summed up in the phrase "Caring for Creation"; NACRE calls for an ongoing "trialogue", in which religion, science and society clarify and agree on values for a new global ethic which promotes sustainability at all levels.

NACRE attempts to communicate its ideas by organizing conferences and developing new uses of media for interactive ecological collaboration.

NACRE attempts to transform our culture by developing coalitions of concerned religious, scientific and environmental leaders, in order to embody the new "environmentally sensitive ethic".

**Scope of the Measurements/Activities:**

NACRE initiated leadership groups strive to embody the new "environmentally sensitive ethic" through:

- Practical models and strategies of eco-action
  - Use of the regeneration process
- 

**Instrumentation:**

Surveys

**Meetings:**

Many meetings organized and co-organized by NACRE, such as preparation of seminars for events such as the "Earth day".

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**Organization for Tropical Studies (OTS)**

Durham North Carolina 27708-0630  
United States

Contact: Dr. Donald E., Stone

Telephone: +1 919 684 5774

E-Mail: nao@dukemvs.ac.duke.edu

Telefax: +1 919 684 5661

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Regional

Central America

Costa Rica

**Activities:**

Education

Research

**Sectors:**

Fresh water, Soil, Flora, Fauna, Ecosystem, Environment and development

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**Keywords:**

12300 TROPICAL FOREST AND WOODLAND ECOSYSTEMS

12384 TROPICAL ECOSYSTEMS

12391 TROPICAL FORESTS

27130 ENVIRONMENTAL EDUCATION

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**Activities Related to Measurements and Monitoring:**

Graduate training and research in the Tropics.

**Scope of the Measurements/Activities:**

Global change research.

Interface between basic and applied research.

**QA/QC Activities:**

Not related to an international network, but data generally conforms to standards set by the NSF LTER.

**Reference materials:**

User; Producer

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**Instrumentation:**

GIS  
Gas chromatographs  
Automated weather station  
Data loggers

**Databases:**

Databases concerning:  
-Rainfall temperature  
-Demographic studies of canopy trees  
-Tree growth  
-Tree phenology  
-Soils  
-Inventory of arthropods  
-Inventory of vascular plants

**Programme Participation:**

Anthropod biodiversity. Ecosystem site comparisons, involving soil and water.  
Native forest tree provenance trials.

**Publications:**

Liana newsletter, printed three times a year.

**Meetings:**

Annual Board of Directors meetings held in March/April.

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**Personnel:** 100

**Budget:** 4-5 MIL US\$

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**Organization of American States (OAS)  
Department of Regional Development and Environment  
(DRDE)**

1889 First Street NW  
NW Washington DC 20006  
United States

Contact: Mr. Kirk P. Rodgers, Director

Telephone: +1 202 458 3567

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional  
North, Central and South America  
Caribbean

**Activities:**

Policy development  
Management and Enforcement  
Coordination  
Education  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Hydrosphere, Marine water, Fresh water, Snow/Ice, Lithosphere, Sediment,  
Soil, Rock, Biosphere, Flora, Fauna, Human, Cross media, Food, Ecosystem,  
Environment and development, Environment and social conditions  
Other: Tourism and ecotourism, development planning.

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**Keywords:**

11148 NATURAL RESOURCES  
12760 NATIONAL PARKS AND RESERVES  
15200 DEVELOPMENT PLANNING  
16470 TOURISM AND TRAVEL  
23124 ENVIRONMENTAL HEALTH HAZARDS

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**Activities Related to Measurements and Monitoring:**

- Management of National Parks and Ecological reserves (technical assistance).
- Preparation of National Environmental Plans (diagnosis of problems).
- Investment projects for Ecosystem Rehabilitation.
- Reduction of vulnerability to natural hazards through development.

**Reference materials:**

User; Producer; Certifier; Supplier

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**Instrumentation:**

Large scale topographic, hydrological and forestry instruments (various instruments for each sector).

**Databases:**

Mainly Natural Hazard databases  
GIS (IDRISI)  
GRID employ

**Programme Participation:**

Natural Hazard programmes

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**Personnel: 650**

**Budget: 120 000 US\$**

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**Pesticide Action Network (PANNA RC)**

North American Regional Centre  
116 New Montgomery Street, # 810  
San Francisco CA 94105  
United States

Contact: Ms. Monica Moore, Regional Coordinator/Programme Director

Telephone: +1 415 541 9140

E-Mail: [panna@igc.apc.org](mailto:panna@igc.apc.org)

Telefax: +1 415 541 9253

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Coordination  
Data/Information management

**Sectors:**

Soil, Fauna, Human

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**Keywords:**

17178 PESTICIDE CONTROL STANDARDS  
17388 TOXICITY OF PESTICIDES  
17396 UTILIZATION OF PESTICIDES  
21342 INTERACTION OF PESTICIDES

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**Activities Related to Measurements and Monitoring:**

PAN is the North American node of a network dedicated to promoting less toxic, more substantial policies and practices with regard to pest management.

PAN works to coordinate international meetings and regional meetings on topics such as methyl bromide phase out, pesticide use reduction plan adoption, transition to organic production (e.g. of cotton) and public health implications of pesticide use.

PAN does not conduct research itself, but staff members assemble and provide information and international support.

**Reference materials:**

Supplier

**Databases:**

PAN maintains an in-house database of articles, reports, books and other materials on many aspects of pesticides (toxicology data, environmental fate, agricultural alternatives and worker safety etc.)

**Publications:**

Global Pesticide Campaigner, a quarterly journal.

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**Personnel: 10**

**Budget: 450 000 US\$**

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**Soil and Water Conservation Society (SWCS)**

7515 North East Ankeny Road  
Ankeny Iowa 50021  
United States

**Contact:** Mr. Douglas M. Kleine, Executive Vice President

**Telephone:** + 515 289 2331

**Telefax:** + 515 289 1227

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Education

**Sectors:**

Fresh water, Soil

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**Keywords:**

12156 SOIL CONSERVATION  
12168 SOIL EROSION  
13116 CONSERVATION OF FRESHWATER  
13188 WATER RESOURCES CONSERVATION  
25270 WATER QUALITY

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**Activities Related to Measurements and Monitoring:**

Holding international meetings.  
Issuing a peer reviewed journal (Journal of Soil and Water Conservation).

**Scope of the Measurements/Activities:**

To act as a clearing house of information on soil erosion and water quality.

**QA/QC Activities:**

The research material published in the "Journal of Soil and Water Conservation" is subject to a double-blind peer review.

**Reference materials:**

Producer

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**Meetings:**

Costa Rica, June 1994.

Norfolk Virginia, USA, August 7-10, 1994.

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**United Nations Statistical Office Division  
Environment Statistics Section (UNSTAT)**

DC 2-1652 2 United Nations Plaza  
New York, NY 10017  
United States

Contact: Mr. Peter Bartelmus, Environment and Energy Statistics Branch.

Telephone: +1 212 963 4581

E-Mail: Internet: envstats@un.org

Telefax: +1 212 963-9851

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**Type of Organization:**

United Nations Organization

**Geographical Scope:**

Global

**Activities:**

Coordination  
Policy development  
Data information management

**Sectors:**

All sectors  
Other: Deals with all areas of environment statistics

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**Keywords:**

00000 MONITORING RESULTS ASSESSMENT  
15224 ENVIRONMENTAL ACCOUNTING  
25225 ENVIRONMENTAL STATISTICS  
26200 INTERNATIONAL ENVIRONMENTAL RELATIONS

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**Scope of the Measurements/Activities:**

Developing concepts and methods for use by Member States for environment statistics and environmental accounting; collecting, compiling and disseminating international statistics including environmentally adjusted accounting aggregates; coordinating international statistical programmes in the field of environment statistics.

Support for technical cooperation in environment statistics and environmental accounting.

**Reference materials:**

Producer

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**Instrumentation:**

Methodological reports and handbooks in environment statistics and environmental accounting.

Application of methodologies through country projects and training seminars.

**Meetings:**

Inter-governmental working group on the advancement of environment statistics (Arusha, Tanzania, 17-21 February 1992).

Intersecretariat working group on environmental data (Geneva, 5 March 1992).

Inter-governmental Working Group on the Advancement of Environment Statistics (Wiesbaden, Germany, 14-18 December, 1992).

UNDP/UNSTAT Workshop on Environmental and Natural Resource Accounting (Beijing, 20-22 April, 1993).

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**US Environmental Protection Agency (US EPA)  
Environmental Monitoring and Assessment Programme**

**EMAP Centre MD-75 Research Triangle Park  
North Carolina 27711  
United States**

**Contact: Dr. Rick A. Linthurst**

**Telephone: +1 919 541 4909**

**Telefax: +1 919 541 3615**

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

United States

**Activities:**

Management and Enforcement

Policy development

Research

Monitoring

Assessment

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment, Soil, Biosphere, Cross media, Lithosphere

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**Keywords:**

10300 AIR POLLUTION

12100 SOILS

12148 SEDIMENTATION

12213 ARID ZONES

12300 TROPICAL FOREST AND WOODLAND ECOSYSTEMS

12455 GRASSLAND ECOSYSTEMS

12600 WETLANDS ECOSYSTEMS

13000 FRESHWATER

13132 LAKES

13156 RIVERS

14278 ESTUARINE ECOSYSTEMS

28133 FORESTRY



**Scope of the Measurements/Activities:**

Research on the current status, extent, and geographic distribution of ecological resources (e.g. estuaries, lakes, streams, wetlands, forests, grasslands, deserts).

Measurements on what proportions of these resources are degrading or improving.

Study of how adversely-affected ecosystems respond to control and mitigation programmes.

**Programme Participation:**

Multiple US Agencies and State programmes.

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**United States Geological Survey (USGS)**

**407 National Centre  
Reston 22092  
United States**

**Contact:** Dr. Ethan T. Smith, Deputy Assistant Chief Hydrologist

**Telephone:** + 703 648 5022  
**Telefax:** + 703 648 5295

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
National  
United States

**Activities:**  
Research  
Monitoring  
Assessment

**Sectors:**  
Fresh water, Sediment, Rock

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**Keywords:**  
11140 MINERAL RESOURCES  
13116 CONSERVATION OF FRESHWATER  
13172 SUBTERRANEAN WATER  
13188 WATER RESOURCES CONSERVATION  
15236 ENVIRONMENTAL IMPACT ASSESSMENT  
23124 ENVIRONMENTAL HEALTH HAZARDS  
25000 MONITORING AND ENVIRONMENTAL DATA  
25225 ENVIRONMENTAL STATISTICS  
25270 WATER QUALITY  
28137 GEOLOGY  
28147 HYDROLOGY

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**Activities Related to Measurements and Monitoring:**  
ISTE is involved in:  
- Conducting and sponsoring research in geology, hydrology and related sciences.

- Producing and updating geographic, cartographic and remotely sensed information in graphic and digital form.
- Collecting and analyzing data on the quantity and quality of surface and ground water, water use and the quality of precipitation.
- Describing the onshore and offshore geological framework of the Nation and developing an understanding of its formation and evolution.
- Assessing energy and mineral resources, determining their origin and manner of occurrence and developing techniques for their discovery.
- Evaluating hazards associated with earthquakes, volcanoes, floods, droughts, toxic materials, landslides, subsidence, other ground failures and developing methods for hazard prediction.

**Scope of the Measurements/Activities:**

- Assessment of distribution of mineral resources.
- Investigations of the nature, extent and origin of coal, oil, gas and other energy resources.
- Collection of basic information about geological frameworks.
- Acquisition, storage and use of geographic, cartographic and other spatial data.
- Conduction of investigations on water resources including data collection, assessment and research.
- Conduction of studies on global climate change.
- Investigation of natural hazards associated with geology and water resources.

**QA/QC Activities:**

The USGS carries out a number of internal quality assurance programmes and procedures that are applied to data measurements and data produced by the agency.

**Reference materials:**

User

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**Instrumentation:**

A wide range of physical and chemical instrumentation utilised to determine geological and hydrological measurements.  
Remote sensing techniques using high altitude and satellite methods to collect earth-science data.

**Programme Participation:**

The USGS participates in a wide variety of international scientific programmes. These are organized largely according to scientific discipline such as geology or hydrology, and are often held in cooperation with major scientific professional societies.

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**US Geological Survey (USGS)  
National Earthquake Information Centre (NEIC)**

**Federal Centre, MS 967  
Denver, CO80225  
United States**

**Contact: Mr. Robert Masse**

**Telephone: +1 303 236 1510**

**Telefax: +1 303 236 1519**

**Telex:5106014123 ESL (WUTCO)**

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Research

Monitoring

Assessment

Data/Information management

**Sectors:**

Lithosphere, Rock

Other: Earthquakes

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**Keywords:**

11172 SEISMIC ACTIVITY

11180 SEISMIC MONITORING

24120 EARTHQUAKES

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**Activities Related to Measurements and Monitoring:**

Collects rapid earthquake information.

The Earthquake Early Alerting Service requires the NEIC to

determine the location and magnitude of significant earth-quakes worldwide.

Raw seismic data (seismograms) from around the world are received from the

Worldwide Standardized Seismographic Network(WWSSN) and the Global

Digital Seismograph Network (GDSN) managed by NEIC's Albuquerque

Seismological Laboratory.

**Scope of the Measurements/Activities:**

Earthquake early alerting service.

Operation of national and global seismograph networks.

Monitoring global seismicity.

Research on earthquake sources and earth structure.

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**Instrumentation:**

Three-component seismometers and strong-motion sensors.

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**Woods Hole Research Centre**

13 Church Street  
Woods Hole, MA02543  
United States

Contact: Dr. Kilaparti Ramakrishna

Telephone: +1 508 540 9900

Telefax: +1 508 540 9700

Telex: 6503120226

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

Global

**Activities:**

Research  
Monitoring

**Sectors:**

Outdoor air, Sediment, Soil, Biosphere

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**Keywords:**

10300 AIR POLLUTION  
10418 CLIMATIC CHANGE  
12100 SOILS  
12148 SEDIMENTATION  
22364 POLLUTION CONTROL TECHNOLOGY  
25000 MONITORING AND ENVIRONMENTAL DATA  
25342 MODELLING AND SIMULATION

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**Activities Related to Measurements and Monitoring:**

The centre is concerned with:

- the role of biotic resources in maintaining a habitable earth and stabilizing global climate.
- control of pollution, especially toxic substances.
- nuclear energy.
- global management of natural resources.
- international cooperation to reduce environmental degradation.

**Scope of the Measurements/Activities:**

Observation of climate change  
Development and control of reference materials  
Identification of pollution sources  
Verification of models

**Reference materials:**

User

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**Meetings:**

International conference on Global Warming and Sustainable Development:  
An Agenda for the 90s, Bangkok, Thailand June 10-12 1991.

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**World Association of Soil and Water Conservation (WASWC)**

7517 North East Ankeny Road  
Ankeny Iowa 50021-9764  
United States

**Contact:** Mr. William C. Moldenhauer, Executive Secretary

**Telephone:** +515 289 2331

**Telefax:** +515 289 1227

---

**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Coordination  
Education  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Hydrosphere, Fresh water, Lithosphere, Sediment, Soil

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**Keywords:**

12148 SEDIMENTATION  
12156 SOIL CONSERVATION  
12168 SOIL EROSION  
13116 CONSERVATION OF FRESHWATER  
13188 WATER RESOURCES CONSERVATION

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**Activities Related to Measurements and Monitoring:**

At least one workshop is held every two years. Proceedings of each workshop are published, along with guideline manuals where appropriate.



**Scope of the Measurements/Activities:**

Identification of sources of sediment.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Rainfall simulators

Sediment measuring instruments

Soil physical properties measuring equipment and instruments

**Databases:**

All soils databases and models, as they relate to soil erosion and sedimentation.

**Programme Participation:**

WASWC has developed two unique programmes: The World Overview of Conservation Activities and Techniques (WOCAT) and the International Organic Matter Management Network.

**Publications:**

Reports on the proceedings of workshops

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**Personnel:** 2

**Budget:** 15 000 (ad-hoc 150-200 000) US\$

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**National Geophysical Data Centre  
World Data Centre  
(NGDC/NOAA WDC NESDIS)**

**NOAA, Code E/GC 325 Broadway  
BoulderCO 80303  
United States**

**Contact:** Dr. David M. Clark, Scientific Assistant to the Director

**Telephone:** +1 303 497 6474

**E-Mail:** [info@mail.ngdc.noaa.gov](mailto:info@mail.ngdc.noaa.gov)

**Telefax:** +1 303 497 6513

**Telex:**592811 NOAA MASC BDR

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Data/Information management

**Sectors:**

Atmosphere, Hydrosphere, Marine water, Snow/Ice, Lithosphere, Sediment,  
Soil, Rock, Biosphere, Cross media, Ecosystem

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**Keywords:**

10445 GLOBAL WARMING

25000 MONITORING AND ENVIRONMENTAL DATA

25220 ENVIRONMENTAL MONITORING

25225 ENVIRONMENTAL STATISTICS

28139 GEOPHYSICS

28141 GLACIOLOGY

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**Activities Related to Measurements and Monitoring:**

NGDC acquires and compiles archives and disseminates a variety of environmental data to all users world-wide. In conjunction with co-located World Data Centres, NGDC provides data as well as derived products and information on a non-discriminatory basis for the nominal cost of reproduction, or on a data exchange basis. Sources of data are national and international projects and programmes.

**Scope of the Measurements/Activities:**

The data disseminated by NGDC is used in a wide range of research, assessment and investigative activities including global change, non-renewable and renewable resource assessment, engineering evaluations, natural hazards, near earth space environment and solar/earth interactions.

**QA/QC Activities:**

The issue of environmental data quality is being addressed at NGDC through a number of mechanisms. Data are used internally in research projects as well as in conjunction with external principal investigators. This use results in improved databases. Also, GIS and AI are now beginning to be investigated for use in this area.

**Reference materials:**

User; Producer

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**Databases:**

NGDC has over 300 databases in the areas of Solid Earth Geophysics, Land Surface Characterization, Marine Geology and Geophysics, Solar-Terrestrial Physics, Paleoclimate and Snow and Ice.

**Programme Participation:**

NGDC operates four World Data Centres (WDC) for the International Council of Scientific Unions (ICSU). These are; Solid Earth, Marine Geology and Geophysics, Solar Terrestrial Physics and Paleoclimatology. In addition, the University of Colorado-Boulder operates the WDC-A for Glaciology for NOAA, in cooperation with NGDC.

**Publications:**

Numerous publications which catalogue and document data. Maps and slide sets are also produced.

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**Personnel:** 100

**Budget:** 8 MIL US\$

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**WorldWIDE Network**  
**World Women in Environment and Development**

1331 H Street NW Suite 903  
Washington DC 20005  
United States

Contact: Elia Garcia McComie, Executive Director

Telephone: +1 202 347 1514  
Telefax: +1 202 347 1524

E-Mail: [worldwide@igc.apc.org](mailto:worldwide@igc.apc.org).

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**Type of Organization:**  
Non-Governmental Organization  
International

**Geographical Scope:**  
Global

**Activities:**  
Education

**Sectors:**  
Environment and development, Environment and social conditions  
Other: Women in development

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**Keywords:**  
15244 ENVIRONMENTAL POLICY  
15284 SUSTAINABLE DEVELOPMENT  
16484 WOMEN IN DEVELOPMENT  
25220 ENVIRONMENTAL MONITORING  
27130 ENVIRONMENTAL EDUCATION

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**Activities Related to Measurements and Monitoring:**

WorldWIDE Directory of Women in Environment providing information on expertise, skills and knowledge of 1700 women from 115 countries on environmental issues.

The Global Assembly of Women in the Environment- "Partners in Life" project highlighting women-led environmental project successes.

The FORUMs and National Assemblies Project, developed to support WorldWIDE's participation in the UNCED process and to develop national networks on women and environment that will help to identify workable solutions for sustainable development.

**Scope of the Measurements/Activities:**

To establish a worldwide network of women concerned about environmental management and protection.

To educate the public and policy makers about the vital links between women, natural resources and sustainable development.

To promote the inclusion of women and their environmental perceptions in designing and implementing policies.

To mobilise and support women, both individually and in organizations, in environmental and natural resource programmes.

**Reference materials:**

User; Producer

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**Instrumentation:**

Newsletters and publications

**Databases:**

An E-mail database.

**Publications:**

"Women Making a World of Difference", a brochure containing information on WorldWIDE.

Directory of Women in Environment.

Proceedings of the Global Assembly of Women and Environment Vol.1 and Vol.2. (Miami, November 1991)

**Meetings:**

Global Assembly of Women and Environment. (Miami 1991).

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**Personnel: 3**

**Budget: 120 000 US\$**

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**National Nuclear Technology Board  
Laboratory for Nuclear Analysis Techniques**

Mercedes 1041  
Montevideo 11.100  
URUGUAY

Contact: Prof. Carlos M. Vera Tartaglia

Telephone: + 598 2 986330

Telefax: + 598 2 921619

Telex: 22072 MINIE

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**Type of Organization:**

Governmental Organization  
National

**Geographical Scope:**

National  
Uruguay

**Activities:**

Monitoring  
Assessment  
Policy development

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil, Food,  
Biosphere

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**Keywords:**

22300 POLLUTION ABATEMENT  
25124 IDENTIFICATION OF POLLUTANTS  
25172 POLLUTANT SOURCE IDENTIFICATION  
25180 POLLUTION MONITORING  
25324 CALIBRATION OF MEASURING EQUIPMENT  
27120 DATA RECORDING TECHNIQUES

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**Activities Related to Measurements and Monitoring:**

Issuing guidelines for measurement techniques and practices.

**Scope of the Measurements/Activities:**

Pollutant control monitoring.

Identification of pollution sources.

Modelling.

General services and help to government environmental centre.

**Reference materials:**

User

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**Instrumentation:**

Nuclear instruments for analysis:

X-ray fluorescence, instrumental neutron activation analysis, anodic stripping voltametry.

Chemical laboratory with clean room and digestion facilities.

Radiochemical laboratory.

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**Uruguayan Association of Environmental Law (AUDA)**

Echevarriarza 3396  
Montevideo 11.300  
URUGUAY

Contact: Dr. Mateo J. Magarinos de Mello

Telephone: +598 2 621024      E-Mail: AUDA.Chasque.apc.org  
Telefax: +598 2 621024

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**Type of Organization:**  
Non-Governmental Organization  
National

**Geographical Scope:**  
Global

**Activities:**  
Policy development  
Education

**Sectors:**  
Environment and development, Environment and social conditions  
Other: Environmental Law and Legislation. Economy

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**Keywords:**  
15107 ENVIRONMENTAL MANAGEMENT  
15244 ENVIRONMENTAL POLICY  
26000 ENVIRONMENTAL LAW AND INSTITUTIONS  
26116 ENVIRONMENTAL LAW  
27130 ENVIRONMENTAL EDUCATION

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**Activities Related to Measurements and Monitoring:**  
Advising people and institutions (private and official: Parliament, Ministries etc.), writing articles, teaching, giving lectures, participating in international meetings, seminars and symposia, preparing drafts of laws and decrees.



**Reference materials:**

User; Producer

**Instrumentation:**

Reports, Advises and Consultancies.

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**Uzbek Academy of Sciences  
Institute of Nuclear Physics**

Ulughbek, 702132 Tashkent  
Usbekistan

Contact: Prof. Alexander Kist, Deputy Director

Telephone: +7 3712 641552

E-Mail: kist@iae.tashkent.su

Telex: 116108 PTB SU

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional  
Former USSR

**Activities:**

Research  
Coordination

**Sectors:**

Outdoor air, Fresh water, Sediment, Soil, Biosphere, Flora, Human  
Other: Hair, blood, plants

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**Keywords:**

10300 AIR POLLUTION  
10380 INDOOR AIR POLLUTION  
12100 SOILS  
12148 SEDIMENTATION  
13000 FRESHWATER  
25354 RADIOACTIVE TRACER TECHNIQUES

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**Activities Related to Measurements and Monitoring:**

Nuclear analytical techniques, radiochemistry, labelled compounds, and their application in the environmental sciences. The institute was established as a leader in activation analysis in the former USSR.

The Institute holds All-Union and International conferences in various fields of activation analysis, radiochemistry, radioactive waste management, nuclear spectroscopy, nuclear data, solid state, etc. It participates in IAEA, WHO, M&B and other international programmes.

**Scope of the Measurements/Activities:**

Pollutant control at background, impact, local and global levels.

Mapping of polluted territories using data of airborne particulate matter, water, soil, vegetation, human blood and hair.

Study of radioactive waste management, water purification, metals by-processing.

**Reference materials:**

User

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**Instrumentation:**

Nuclear reactor (10 MW), 150 cm cyclotron, neutron generator, linear accelerator, computer gamma-spectroscopy equipment.

**Meetings:**

Tashkent proposes to host the International Symposium on Nuclear Analytical Methods in Life Sciences. There is no final decision.

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**South Pacific Regional Environmental Programme (SPREP)**

Apia  
Western Samoa

Contact: Dr. Vili Fuavao, Director

Telephone: + 685 21929

Telefax: + 685 20231

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional  
South Pacific

**Activities:**

Policy development  
Coordination  
Education

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Marine water, Fresh water,  
Lithosphere, Sediment, Biosphere, Flora, Fauna, Human, Cross media,  
Ecosystem, Environment and development, Environment and social conditions

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**Keywords:**

10400 CLIMATE AND CLIMATE CHANGE  
10481 SEA LEVEL RISE  
13378 WATER POLLUTION  
14190 TIDES AND SEA LEVELS  
28163 OCEANOGRAPHY

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**Activities Related to Measurements and Monitoring:**

Developing guidelines for member governments.  
Contracting regional and international institutions to carry out specific  
monitoring projects around the Pacific region.  
Distributing information on standards in the Pacific region.

**Scope of the Measurements/Activities:**

Monitoring existing pollution.  
Baseline studies.  
Involved with regional sea-level monitoring programme.  
Developing national EIA standards for the Pacific region.

**QA/QC Activities:**

Use of in-house expertise to assess quality, along with the use of international experts where required.

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**Instrumentation:**

Instruments specific to the individual contractors.

**Databases:**

PEAMIS: A GIS based database, covering ten member countries, or parts of those member countries.  
EIA standards database

**Programme Participation:**

South Pacific Sea Level and Climate Change Monitoring Programme.  
TOGA/COARE (for ENSO effect). SPREP-POL (South Pacific Pollution Monitoring Programme).

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**Personnel: 37**

**Budget: 5 MIL US\$**

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**Gisdata D.O.O.**

Vocarska 39  
Zagreb 41000  
Croatia

Contact: Mr. Boran Loncaric, Director

Telephone: +38 41 419785

Telefax: +38 41 419785

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**Type of Organization:**

Industrial or Commercial  
National

**Geographical Scope:**

National  
Croatia

**Activities:**

Research  
Data/Information management

**Sectors:**

Outdoor air, Marine water, Fresh water, Soil  
Other: Ground water

---

**Keywords:**

25200 MONITORING CRITERIA AND DATA  
25225 ENVIRONMENTAL STATISTICS  
26264 TECHNOLOGY TRANSFER  
27110 DATA PROCESSING  
27160 INFORMATION TECHNOLOGY

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**Activities Related to Measurements and Monitoring:**

Develop applications software on top of GIS geo-processing software (ARC/INFO), to manage environmental measurement data.  
Design and update spatial and environmental databases.

**Scope of the Measurements/Activities:**

Identification of pollutant sources.

"What if?" analysis of development scenarios, solutions and hypothesis testing.

---

**Instrumentation:**

PC and UNIX computers.

Graphics peripherals.

Vectoral tester GIS software (ARC/INFO ERDAS).

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**Ministry of the Environment  
National Agency for Environmental Protection (NAEP)**

29, Strandgade  
Copenhagen K DK-1401  
Denmark

Contact: Ms. Nina Lassen

Telephone: +45 31 57 83 10

Telefax: +45 31 57 24 49

Telex: 31 209

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Denmark

**Activities:**

Coordination

Assessment

Monitoring

Policy development

**Sectors:**

All sectors

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**Keywords:**

10110 AIR QUALITY

10300 AIR POLLUTION

13188 WATER RESOURCES CONSERVATION

17178 PESTICIDE CONTROL STANDARDS

20104 BIOGAS

22130 INDUSTRIAL EMISSIONS

22416 INCINERATION OF WASTE

25205 AIR QUALITY MANAGEMENT

25220 ENVIRONMENTAL MONITORING

25270 WATER QUALITY

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**Activities Related to Measurements and Monitoring:**

Some of the main activities and working areas of NAEP are:

Physical planning tools for environmental protection.

Coordination of multidisciplinary technical and scientific tasks.

Coordination of export of environmental systems to Eastern Europe.

Coordination of international activities, cooperation and agreements on marine and transboundary air pollution, for example.

Application of wastes to agricultural soils, biogas plants.

General matters of industrial pollution.

Assessment of the environmental and health impact of chemical substances and products.

Approval of pesticides.

Air pollution (emission data, air quality, air policy including greenhouse effect).

Hat/power production, fuel quality, air pollution from motor vehicles, waste incineration and energy policy.

Waste management, recycling and low-waste technology.

Water quality and water resources.

**Scope of the Measurements/Activities:**

The condition of the environment is monitored by means of various monitoring programmes. NAEP is responsible for investigation and research programmes concerning among others:

the aquatic environment, waste water, consumption of chemicals, reuse, cleaner technology, CFC (freon), waste, gene technology and air pollution.

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**National Environmental Research Institute (NERI)**

Frederiksborgvej 399  
Roskilde DK 4000  
Denmark

Contact: Dr. Hans Peter Lorenzen, Research Coordinator

Telephone: +45 46 30 12 00  
Telefax: +45 46 30 11 14

E-Mail: fuhpl@dmuro1.dmu.min.dk

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional  
Baltic.  
Fennoscandia.  
Northern Europe

**Activities:**

Education  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Marine water, Fresh water, Snow/Ice,  
Lithosphere, Sediment, Soil, Biosphere, Flora, Fauna, Human, Cross media,  
Ecosystem, Environment and development, Environment and social conditions

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**Keywords:**

15107 ENVIRONMENTAL MANAGEMENT  
15240 ENVIRONMENTAL IMPACT ASSESSMENT  
27000 ENVIRONMENTAL AWARENESS  
27130 ENVIRONMENTAL EDUCATION

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**Activities Related to Measurements and Monitoring:**

Organizing international workshops and seminars.  
Carrying out international training programmes.  
Coordinating monitoring and research.

Participating in international expert groups with the task of developing research programmes (especially the EC and Nordic Council of Ministers).  
National focal point within environmental data.

**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Early warning systems  
Identification of pollutant sources  
Verification of models  
Identification of "critical loads/level"  
Effect assessment

**QA/QC Activities:**

QA programmes, executed according to the EN 4500 series.  
Writing manuals  
Participating in international interlaboratory comparisons (ICES, IOG, JMG, KIWA and Aquacheck)  
Arranging training of personnel  
Implementing documented QA in research and routine work  
Carrying out external evaluation of research areas at a regular base

**Reference materials:**

User; Producer; Certifier; Supplier

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**Instrumentation:**

HPLC  
ICP/MS  
VOC Air Analyzer  
Headspace Units  
PIXE  
GC (FID)  
GF/AAS

**Databases:**

Physical, chemical and biological databases within the sectors of:  
-Atmosphere  
-Freshwater  
-Marine water  
Databases concerning wildlife are also implemented

**Programme Participation:**

EC 3rd. Framework (ENVIRONMENT, MAST). EUROTRAC PHARELIFE. Nordic Environmental Research Programme.

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**Personnel: 325**

**Budget: 25 MIL US\$**

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**National Environmental Research Institute (NERI)  
Department of Emissions and Air Pollution (DEAP)**

Frederiksborgvej 399  
Roskilde DK-4000  
Denmark

Contact: Ph.D. Lise W. Kristiansen, Deputy Chief

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Telefax: +45 46 30 11 14

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Coordination  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Outdoor air, Atmosphere, Hydrosphere, Marine water, Biosphere, Flora,  
Ecosystem  
Other: Deposition of air pollutants

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**Keywords:**

10110 AIR QUALITY  
10300 AIR POLLUTION  
10320 AIR POLLUTANTS  
10418 CLIMATIC CHANGE  
12321 DEFORESTATION  
15224 ENVIRONMENTAL ACCOUNTING  
22130 INDUSTRIAL EMISSIONS  
22148 MOTOR VEHICLE EMISSIONS  
25205 AIR QUALITY MANAGEMENT  
25220 ENVIRONMENTAL MONITORING  
25225 ENVIRONMENTAL STATISTICS

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**Activities Related to Measurements and Monitoring:**

Advising the Danish environmental authorities and the public.  
Participation in (and performance of) national and international research projects in the laboratory and field, air quality monitoring programmes and modelling activities.  
Arrangement of (and participation in) international scientific meetings, congresses, training courses and intercalibrations.  
Education and training of staff and students (M.Sc. & Ph.D.).  
Publishing of scientific papers, technical and popular reports and articles.  
Expert assistance to developing countries.

**Scope of the Measurements/Activities:**

Advising the Danish Ministry of the Environment, local authorities and the public.  
Monitoring and collection of air pollution data, in Denmark and Greenland.  
Modelling and measuring air pollution emission, dispersion and deposition.  
Investigating atmospheric chemistry and physics of air pollutants.  
Measuring effects of air pollutants on vegetation and nutrient dynamics in forests.  
Development and improvement of analytical equipment and procedures.  
Education and training of academic and technical staff and students.  
Assisting developing countries in establishing monitoring of air pollution.

**QA/QC Activities:****NERI Data:**

- Good laboratory practices (GLP) are followed. Staff are participating in international intercalibrations to assure quality of analytical equipment and procedures.

**External Data:**

- A thorough data validation is performed on all external data, e.g. meteorological data, before using or storing in NERI's databases.

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**Instrumentation:**

Gas monitors (UV-fluorescence (SO<sub>2</sub>), UV-absorption (O<sub>2</sub>), Non-dispersive IR absorption (CO<sub>2</sub>), chemiluminescence (NO)).  
Standard meteorological measuring devices.  
Bulk and wet only samplers (wet deposition).  
Atomic absorption spectroscopy (flame photometry).  
High pressure liquid chromatography.  
Auto analyzers.  
Gas chromatography (electron capture detection).  
Proton Induced X-ray Emission Spectroscopy (PIXE, multi-element analysis).  
Differential Optical Absorption Spectroscopy (DOAS).  
IR photometry (Fuel Efficiency Automobile Test, FEAT).  
Diffusion scrubber technique, denuders, filter pack and passive diffusion tubes (NH<sub>3</sub>).

**Databases:**

Chemical data: SQL Relational Database, daily or fortnightly mean values of various chemical substances in air and precipitation samples.

Monitor Data: SQL Relational Database, hourly and half hourly mean values of gaseous air pollutants.

Biological Data: SQL Relational Database, absolute values of various biological response parameters as well as that of gas and climatic data.

Meteorological Data: SQL Relational Database, absolute and mean values averaged over various time periods.

**Programme Participation:**

EUROTRAC (TOR). AMAP. ICP-Crops. EMEP.ETEX. ESPACE.

**Publications:**

Scientific papers, technical and popular reports and articles.

**Meetings:**

International scientific meetings and congresses.

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**Personnel: 46**

**Budget: 32 000 US\$**

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**National Environmental Research Institute (NERI)  
Department of Environmental Chemistry (MIKE)**

Frederiksborgvej 399  
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Denmark

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Telefax: +45 46 30 11 14

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Denmark

**Activities:**

Research

Monitoring

Assessment

Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Fresh water, Lithosphere, Sediment,  
Soil, Biosphere, Flora, Fauna, Human, Cross media, Ecosystem, Environment  
and development

Other: Wet deposition (rain)

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**Keywords:**

10300 AIR POLLUTION

21000 CHEMISTRY AND BIOCHEMICAL PROCESSES

22100 POLLUTANTS

25100 POLLUTANT MONITORING

25124 IDENTIFICATION OF POLLUTANTS

25172 POLLUTANT SOURCE IDENTIFICATION

28106 ANALYTICAL CHEMISTRY

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**Activities Related to Measurements and Monitoring:**

Research and development of techniques for sampling and analysis of indigenous and anthropogenic pollutants.

Conducting research programmes individually or in national or international cooperation.

Conducting measurements according to national programmes and international conventions for monitoring (OSPARCOM, HELCOM).

**Scope of the Measurements/Activities:**

Surveillance of pollutants, their sources, distribution and degradation.

Assessment of the impact of pollution on the environment.

**QA/QC Activities:**

NERI MIKE are working on obtaining an accreditation in 1994 and have most parts of an in-house QA system.

NERI MIKE are conducting national intercomparison exercises and are participating in several international intercomparison exercises (such as the EC programme QUASIMEME).

**Reference materials:**

User: Producer; Supplier

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**Instrumentation:**

Gas Chromatography (GC).

High Pressure Liquid Chromatography (HPLC).

Gas Chromatography/Mass Spectrometry (GC/MS).

HPLC/MS.

ICP/MS.

Atomic Absorption Spectroscopy (AAS).

**Programme Participation:**

Community of Europe: RADWAS. STEP. LIFE. ENVIRONMENT.

**Meetings:**

Participating in international meetings and conferences.

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**National Environmental Research Institute (NERI)  
Department of Freshwater Ecology (DOFE)**

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional  
Europe

**Activities:**

Coordination  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Fresh water, Biosphere, Fauna, Cross media, Ecosystem,  
Environment and development

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**Keywords:**

13116 CONSERVATION OF FRESHWATER  
13300 POLLUTION AND DEGRADATION OF FRESHWATER  
15236 ENVIRONMENTAL IMPACT ASSESSMENT  
15284 SUSTAINABLE DEVELOPMENT  
25220 ENVIRONMENTAL MONITORING  
25225 ENVIRONMENTAL STATISTICS  
25270 WATER QUALITY  
28134 FRESHWATER BIOLOGY

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**Activities Related to Measurements and Monitoring:**

Responsible for organization and coordination of monitoring water quality in 60 springs, 270 streams and 37 lakes and further in 6 small agricultural catchments (nutrient leaching) performed by the local counties.

Annually issuing a national report of the results of these monitoring programmes.

Advice, technical meetings and technical guidelines to counties, in relation to the monitoring programme.

Advising the Danish environmental authorities, the public and politicians.

Training courses and intercalibration in chosen fields.

Publishing scientific papers, technical reports and articles.

A national expert concerning freshwater is situated in the EEA task force of the EEC.

National focal point for freshwater data in relation to the European Environmental Agency.

**Scope of the Measurements/Activities:**

Pollutant control monitoring.

Identification of pollutant sources and assessment of the impact on the freshwater environment.

Verification of models (nutrient leaching from agricultural catchment, trend analyses of nutrient concentrations, phytoplankton and nutrient balance models in lakes and biological structure models in shallow lakes).

Advising the Danish Ministry of the Environment, local authorities and the public.

Associating East European countries with environmental monitoring programme of freshwater etc.

Monitoring the effects of management policies on rivers and lakes.

**QA/QC Activities:**

NERI DOFE Data:

- Good Laboratory Practices are followed and QC is performed.
- Participation in some local, national and international QA programmes.

External Data:

- A thorough data validation is performed on all external data (for instance from counties) before used and stored in databases.
- Biological reference laboratory.

**Reference materials:**

User

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**Instrumentation:**

Automatic water sample equipment in water courses.

Datalogger, water level recorders, OTT-Fluegel and boats.

Instruments for meteorological measurement.

HPLC/MS.

Ion Chromatography.

Gas Chromatography.  
Mass Spectrometry.  
Atomic Absorption Spectroscopy (AAS).  
Electronic microscopes.  
Ion Autoanalyzer.  
Lachat.  
FIA.  
TOC.

**Databases:**

All databases are SQL Relational Databases:

- Chemical data: (watercourses, springs, lakes). Primary values of TP, PO4-P, TN, NO23-N, NH4-N, Fe, Si, CoD, BI5, pH, alkalinity, chlorophyle-a, secchi-depths, temperatures and oxygen (20 records annually for each watercourse).
- Phyto- and Zooplankton: (lakes). Primary values registration of total number, biomass, dimension and species (about 20 records annually of each lake).
- Fish: Primary values registration of total number, species, weight etc.
- Transport of matter: (in watercourses, to lakes, fjords, coastal areas). Monthly and annual values of the transport of chemical substances and of water.
- Hydrometrical data: Primary values of instant discharge and daily mean discharge.
- Fauna data: (watercourses, only as ASCII Files) species, index value of the Biological Assessment Method (2 records for each watercourse).
- Watershed data: soil types, discharge, point and non-point sources (annual values).
- Climatological data: Only as ASCII-files. Daily means and monthly means of temperature, precipitation, global radiation, evaporation (and wind velocity) for Denmark, the counties in Denmark and 44 grids in Denmark.
- European lake and river data: (from reports) Morphometric location and quality data of lakes, reservoirs and main rivers in Europe.

**Programme Participation:**

Community of Europe: LIFE, HELCOM/PARCOM etc. Cooperation within the European Environmental Agency (EEA). Project on multi-media and geo-reference information delivery systems with Bull (France), Siemens-Nixdorf (Germany), Olivetti (Italy), Kommunedata (Denmark) and eight other associated partners. International Programme on Assessment and Monitoring of Acidification of Rivers and Lakes, under the auspices of the United Nations convention, concerning "Long Range Trans-Boundary Air Pollution"(UN-ECE). Biological structure of shallow lakes: Empirical and Dynamic Model, in collaboration with institutions in the Netherlands, the UK, Norway and Sweden.

**Publications:**

Scientific papers, technical and popular reports and articles.

**Meetings:**

Technical meetings for countries involved in the water quality monitoring programmes.

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**Personnel: 58**

**Budget: 3 MIL. US\$**

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**National Environmental Research Institute (NERI)  
Department of Marine Ecology and Microbiology (DMEM)**

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Roskilde DK-4000  
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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
Regional  
Baltic Sea, North Sea, Danish Marine Waters

**Activities:**  
Coordination  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**  
Marine water, Flora, Fauna, Hydrosphere, Biosphere, Cross media,  
Ecosystem, Environment and development

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**Keywords:**  
14226 COASTAL AREAS  
14370 MARINE ECOSYSTEMS  
15236 ENVIRONMENTAL IMPACT ASSESSMENT  
25225 ENVIRONMENTAL STATISTICS  
25250 MARINE MONITORING  
25270 WATER QUALITY  
28152 MARINE BIOLOGY  
28158 MICROBIOLOGY

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**Activities Related to Measurements and Monitoring:**

Issuing guidelines for measuring techniques and practices.  
The monitoring in the open Danish marine waters.  
Organization and coordination of monitoring in the coastal areas, performed by the local counties.  
Danish marine monitoring related to international conventions (HELCOM, PARCOM).

**Scope of the Measurements/Activities:**

Pollutant control monitoring.  
Early warning and vigilance systems.  
Identification of pollutant sources.  
Verification of models.

**QA/QC Activities:**

Internal QA programme.  
Participation in international QA programmes.  
Performance of QC procedures.  
Participation in interlaboratory comparison exercises.

**Reference materials:**

User

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**Instrumentation:**

Fully equipped, ocean going research vessel.  
Instrumentation for Oceanography, Eutrophication research (nutrients, plankton and zoobenthos) and Heavy metals.

**Databases:**

NERI DMEM hold time series starting in the 1970's on oceanographic data from the Danish marine waters including: Hydrography, oxygen, nutrients, chlorophylla, primary production, phyto and zooplankton, zoobenthos, heavy metals in water, biota and sediments.

**Programme Participation:**

HELCOM. PARCOM.

**Publications:**

Annual report on the status and development in the Danish marine waters.

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**Personnel: 45**

**Budget: 3.2 MIL. US\$**

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**National Environmental Research Institute (NERI)  
Department of Terrestrial Ecology (DOTE)**

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Silkeborg DK-8600  
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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Denmark

**Activities:**

Research  
Monitoring  
Assessment

**Sectors:**

Lithosphere, Soil, Biosphere, Flora, Fauna, Cross media, Ecosystem

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**Keywords:**

10110 AIR QUALITY  
10300 AIR POLLUTION  
12000 TERRESTRIAL ECOSYSTEMS  
12728 ECOLOGICAL BALANCE  
25100 POLLUTANT MONITORING  
25172 POLLUTANT SOURCE IDENTIFICATION

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**Activities Related to Measurements and Monitoring:**

Participation in the International Cooperative Programme on Integrated Monitoring of Air Pollution, Effects on Terrestrial Ecosystems, UN ECE Convention on Long-Range Transboundary Air Pollution. Host for the First Task Force Meeting in 1993.  
Participation in the UN ECE mapping of critical loads in Europe (in the same convention as above).



**Scope of the Measurements/Activities:**

Early warning systems.  
Effects mapping (GIS).  
Verification of models.

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**Instrumentation:**

Atomic Absorption Spectrophotometry.  
Ion Chromatography.  
HPLC.  
Ion Autoanalyzer.  
TOC.

**Databases:**

Data from the Danish IM station (UN ECE International Cooperative Programme on Integrated Monitoring).  
GIS maps: soil texture and mineralogy, forest inventories, land cover and Sulphur and Nitrogen deposition.

**Programme Participation:**

EC project within terrestrial ecotoxicology, SECOFASE (project coordinator)  
EC Environmental Programme 1992-1995.

**Meetings:**

UN ECE Convention on Long-Range Transboundary Air Pollution.

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**Personnel: 28**

**Budget: 1.7 MIL. US\$**

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**National Environmental Research Institute (NERI)  
Department of Wildlife Ecology (DOWE)**

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Roende DK-8410  
Denmark

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Denmark

**Activities:**

Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Flora, Fauna, Biosphere, Human, Ecosystem, Environment and development

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**Keywords:**

12650 WATERFOWL  
15240 ENVIRONMENTAL IMPACT ASSESSMENT  
15284 SUSTAINABLE DEVELOPMENT  
25225 ENVIRONMENTAL STATISTICS

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**Activities Related to Measurements and Monitoring:**

Population and landscape ecology.  
Research activities in population analyses in waterfowl on flyway level.  
Population studies of plants and animals in relation to agriculture and forestry.  
Impact of recreational activities on birds and mammals.  
Effect of fragmentation of landscape on plant and bird species.

Arranging ad-hoc national and international workshops and seminars.  
Arranging training courses in practical and theoretical monitoring of biological parameters.  
Publishing national and international journals and report series.

**Scope of the Measurements/Activities:**

Impact studies, early warning systems and analysis of biological structures in ecosystems and population trends.

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**Instrumentation:**

Field equipment and simple laboratory equipment.  
Radio tracking equipment, boats and aeroplanes.

**Databases:**

National database on game statistics.  
National database on wing surveys.  
International database on goose populations in Europe (from 1989).  
International database on sea duck populations in Europe (from 1989).

**Programme Participation:**

CONNECT Collaboration on Landscape Ecology and Biodiversity.

**Publications:**

International journals and report series'.

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**Personnel: 35**

**Budget: 3 MIL US\$**

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**Meteorological Authority**

Koubry El-Quobba  
CAIRO  
EGYPT

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Telex: 94293 METEGUN

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Egypt

**Activities:**

Research

Monitoring

Assessment

Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Cross media, Food, Ecosystem, Environment and development

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**Keywords:**

10280 SOLAR RADIATION

25148 POLLUTANT DISTRIBUTION

25210 ATMOSPHERIC MONITORING

25220 ENVIRONMENTAL MONITORING

25225 ENVIRONMENTAL STATISTICS

25245 LONG-TERM TRENDS AND FORECASTING

25280 WEATHER PREDICTION

27110 DATA PROCESSING

27130 ENVIRONMENTAL EDUCATION

27140 ENVIRONMENTAL TRAINING

28157 METEOROLOGY

29304 ARABIC

29317 ENGLISH

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**Activities Related to Measurements and Monitoring:**

Measurements of all ordinary meteorological elements such as atmospheric pressure, wind, air temperature, humidity etc., at all meteorological stations of the Egyptian network.

Monitoring of air pollution including some gas pollutants (CO<sub>2</sub> and SO<sub>2</sub>) and suspended dust particles.

Research in the fields of air pollution meteorology, urban climate, climatology, climate change, radiation and hydrology.

Publishing the Meteorological Research Bulletin.

Participation in the environmental conferences.

Cooperation with other environmental organizations.

**Scope of the Measurements/Activities:**

Monitoring of atmospheric turbidity at Sidi-Barrani, Siwa and Hurghada BAPMoN stations.

Monitoring of suspended dust particles at Cairo.

Research in the fields of air pollution, meteorology, climatology and climate change and urban climate.

Verification of models.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Sartorius High Volume Sampler- HVS 100; Strohleim HVS 150;

Uras 7 IR CO<sub>2</sub> Gas Analyzer; SO<sub>2</sub> analyzer (Model 43A);

Volz Multichannel Sun photometer; Beckman CO<sub>2</sub> Gas Analyzer

**Databases:**

Ordinary meteorological data are available for the Egyptian Meteorological Stations Network.

Atmospheric turbidity for Sidi-Barrani (1980-1993), Siwa (1982-1993) and Hurghada (1987-1993).

Suspended dust particles {mass concentration} at Cairo (1988-1993, with some missing periods).

**Programme Participation:**

Global Atmosphere Watch (GAW).

**Publications:**

"The Meteorological Research Bulletin"

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Personnel: 2000

Budget: 6 MIL US\$

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**Institute of Graduate Studies and Research (UNARC)**

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Alexandria  
EGYPT

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

National

Egypt

**Activities:**

Education

Research

Monitoring

Assessment

Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Marine water, Fresh water, Lithosphere, Sediment, Soil, Rock, Biosphere, Human, Cross media, Environment and development, Environment and social conditions

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**Keywords:**

14226 COASTAL AREAS

14239 COASTAL DEVELOPMENT

14252 COASTAL EROSION

15236 ENVIRONMENTAL IMPACT ASSESSMENT

27150 GEOGRAPHIC INFORMATION SYSTEMS

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**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Observation of climate change  
Identification of pollutant sources  
Observation of coastal changes  
Environmental impact assessment

**Reference materials:**

User

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**Instrumentation:**

Air pollution monitoring equipment  
Meteorological station  
Weather satellite receiver

**Programme Participation:**

Mediterranean Pollution (MED Pol).

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**Finnish Meteorological Institute  
Air Quality Department**

Helsinki SF-00101  
Finland

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Finland

**Activities:**

Assessment

Monitoring

**Sectors:**

Outdoor air

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**Keywords:**

10110 AIR QUALITY

10120 ATMOSPHERIC CHEMISTRY AND COMPOSITION

22102 AEROSOLS

25148 POLLUTANT DISTRIBUTION

25188 RADIATION MONITORING

25210 ATMOSPHERIC MONITORING

25245 LONG-TERM TRENDS AND FORECASTING

25280 WEATHER PREDICTION

25312 ATMOSPHERIC MODELS

28112 ATMOSPHERIC PHYSICS

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**Activities Related to Measurements and Monitoring:**

- Air quality monitoring and measurements
- Radioactivity monitoring network
- Emission surveys
- Dispersion computation
- Biological research
- Research in air physics and chemistry

**Scope of the Measurements/Activities:**

- Identification of pollution sources
- Verification of models

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**Instrumentation:**

- Ozone, NO<sub>2</sub>, SO<sub>2</sub>, CO, hydrocarbons and radioactivity monitors
- Aerosol and deposition samplers
- Gas chromatograph, ion chromatograph, atomic absorption/spectrophotometer and conventional analytic equipment

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**Finnish Standards Association (SFS)**

Helsinki FIN-00241  
Finland

Contact: Mr. Kari Kaartama, Managing Director

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Telex: 122303 stand fi

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Finland

**Activities:**

Coordination

**Sectors:**

Environment and development  
Other: Technical coordination. Marketing. Environmental labelling

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**Keywords:**

10110 AIR QUALITY  
10300 AIR POLLUTION  
10320 AIR POLLUTANTS  
21384 RADIOACTIVITY  
22130 INDUSTRIAL EMISSIONS  
22148 MOTOR VEHICLE EMISSIONS  
26128 ENVIRONMENTAL QUALITY STANDARDS

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**Activities Related to Measurements and Monitoring:**

Standardization.  
ECO-Labeling.  
ECO-Audit.

**Scope of the Measurements/Activities:**

Development of standards for environmental measurements

**QA/QC Activities:**

SFS manages quality system certification of enterprises on the basis of SFS-ISO 9000-Series. The certificate is granted to an applicant once the company's quality system has been judged to be in compliance with standard SFS-ISO 9001, 9002 or 9003 and once the company has committed itself to follow the regulations set down in its quality system.

**Reference materials:**

Certifier

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**Databases:**

SFS maintains a bibliographic on-line database on Finnish standards, drafts and standardization projects. The database is hosted by the Finnish State Computer Centre (VTKK).

**Programme Participation:**

SFS is the Finnish member of the ISO Information Network on standards (ISONET), and acts as the GATT Enquiry Point. SFS participates in the CEN/CENELEC Information Procedure on Standardization projects and draft standards.

**Publications:**

SFS Standards numbering over 5000.

SFS Tiedotus magazine is a bi-monthly listing of new SFS standards, drafts, Finnish draft technical regulations and EN standards.

SFS Annual Catalogue list and two cumulative supplements of valid SFS standards and other SFS publications.

SFS Handbooks on standards for specific fields of technology together with other relevant information.

SFS Guides, SFS Special Rules for Certification and TSL Informative Labelling Guidelines.

**Meetings:**

2 Annual meetings.

Workshops.

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**Personnel:** 70

**Budget:** 4.5 MIL: US\$

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**National Board of Waters and the Environment  
Environmental Data Centre (EDC)**

Helsinki SF-00101  
Finland

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Telex: 126086 vyh sf

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional  
Europe

**Activities:**

Data/Information management

**Sectors:**

Outdoor air, Marine water, Fresh water, Sediment, Soil, Flora, Fauna, Energy,  
Biosphere, Cross media

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**Keywords:**

15236 ENVIRONMENTAL IMPACT ASSESSMENT  
24245 LONG TERM TRENDS AND FORECASTING  
25225 ENVIRONMENTAL STATISTICS  
25360 REMOTE SENSING  
27110 DATA PROCESSING  
27140 ENVIRONMENTAL TRAINING  
27150 GEOGRAPHIC INFORMATION SYSTEMS

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**Activities Related to Measurements and Monitoring:**

Environmental Monitoring Data System (EMDS)  
National Environment Data System (EDS)  
Environment Geographical Information System (EGIS)  
Environment Management Information System (EMIS)  
Integrated Monitoring Data System (UN/ECE/ICP-IM)  
Environment Remote Sensing System (ERS)  
Environment Reviews and Reports  
Baltic Monitoring Data System (HELCOM/BMP)

Baltic Geographical Information System (HELCOM/BGIS)  
Environment data standardization & co-ordination of EDC mainly follows  
guidelines set by the Environment Data Group of the Nordic Council of  
Ministers (1976-)  
Reference: EDC document

**QA/QC Activities:**

Participation in the Nordic QA/QC project 1993-1996.

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**Instrumentation:**

Reference:  
- Manual for Integrated Monitoring 1993.

**Databases:**

3 international and 50 national databases.

**Programme Participation:**

UN ECE/ICP-IM. HELCOM/BMP. Several Nordic programmes

**Publications:**

- EDC document (revised 1993)  
- Manual for Integrated Monitoring 1993  
- Field Manual

**Meetings:**

The permanent secretariat for the Nordic Environment Monitoring and Data  
Group (1993), subject to the Nordic Council of Ministers.

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**Personnel:** 46

**Budget:** 2 MIL US\$

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**National Board of Waters and the Environment  
Water and Environment Research Institute**

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Finland

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
Regional  
Baltic Sea Area

**Activities:**  
Assessment  
Monitoring  
Policy development  
Research

**Sectors:**  
Marine water, Fresh water, Sediment, Biosphere

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**Keywords:**  
10310 ACID RAIN  
12148 SEDIMENTATION  
13378 WATER POLLUTION  
15145 NATURE CONSERVATION  
22364 POLLUTION CONTROL TECHNOLOGY  
23164 POLLUTION RISK  
25220 ENVIRONMENTAL MONITORING  
25270 WATER QUALITY

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**Activities Related to Measurements and Monitoring:**

The tasks of WERI are to carry out environmental research and to monitor the quality of the environment in general and the waters in particular. Activities are concentrated in the following areas:

- Integrated and terrestrial monitoring
  - Hydrological monitoring and research
  - Water quality monitoring and research
  - Ecotoxicology, hazardous substances and monitoring of bioaccumulating substances
  - Conservation ecology
  - Effects of acidification and climatic change
  - Non-point pollution from agriculture and forestry
  - Microbiological processes
  - Solid wastes and contaminated soil sites
  - Environmental technology
  - Chemical analytical methods
- An important task is further to publish the research results and to issue guidelines for sampling techniques as well as analytical methods.

**Scope of the Measurements/Activities:**

- Pollution control monitoring
- Monitoring the state of the environment
- Research on the effects of different polluters (acid deposition, agriculture, forestry, industry, climate change).

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**Instrumentation:**

- Normal hydrological, chemical and biological research instrumentation

**Programme Participation:**

- GEMS/water. HELCOM
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**Air Service of the CNRS (SA)**

Verrieres Le Buisson F-91371  
France

Contact: Dr. Pierre Bauer, Director

Telephone: +33 1 69 20 01 83

Telefax: +33 1 69 20 29 99

Telex: 602400

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Research

**Sectors:**

Atmosphere

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**Keywords:**

10000 ATMOSPHERE  
10120 ATMOSPHERIC CHEMISTRY AND COMPOSITION  
10170 OZONE LAYER  
12420 ANTARCTIC REGION  
25180 POLLUTION MONITORING  
25210 ATMOSPHERIC MONITORING  
25360 REMOTE SENSING

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**Activities Related to Measurements and Monitoring:**

Ozone monitoring using optical techniques (lidars, spectrophotometry), both from the ground and space (balloons, satellites)  
Stratospheric studies (dynamics, thermal structure)  
Tropospheric studies (chemistry, dynamics)  
Air pollution studies

**Scope of the Measurements/Activities:**

Pollutant monitoring;  
Monitoring of ozone, nitrogen compounds and stratospheric temperature  
Long term changes (tropospheric and stratospheric chemistry)



**QA/QC Activities:**

Ozone monitoring: Network for detection of stratospheric changes (NDSC)

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**Instrumentation:**

Lidars  
Spectrophotometers (UV, Visible, Infrared)  
Anemometers  
Ozone chemical probes  
Radars (stratosphere and troposphere)  
Space and air-borne instrumentation

**Databases:**

NDSC Ozone monitoring database.

**Programme Participation:**

WRCP (NDSC). EEC (EASOE, SESAME). NASA (UARS upper atmosphere research satellite). ESA/ENVISAT (GOMOS instrument).

**Meetings:**

Observations from the observatory of Haute Provence, from Antarctica and Greenland.

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**Personnel: 130**

**Budget: 16 MIL US\$**

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**Centre for Low Radioactivities (CNRS CEA)**

Avenue de la Terrasse  
Gif-sur-Yvette F-91198  
FRANCE

Contact: Dr. Bernard Bonsang

Telephone: +33 1 69 08 78 88

Telefax: +33 1 69 08 85 46

Telex: 604641 F

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

France

**Activities:**

Research

**Sectors:**

Outdoor air, Marine water

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**Keywords:**

10150 GREENHOUSE GASES

10418 CLIMATIC CHANGE

20132 HYDROCARBONS

21378 PHYSICO-CHEMICAL PROCESSES

21384 RADIOACTIVITY

22190 TRACE ELEMENTS

25180 POLLUTION MONITORING

25215 BASELINE MONITORING

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**Activities Related to Measurements and Monitoring:**

Measurements of trace gases (non-methane hydrocarbons, terpenes etc., carbon monoxide, methane) by gas chromatography

Flux measurements from soils, forests, oceanic areas

Monitoring in remote areas, background pollution survey

**Scope of the Measurements/Activities:**

Climate changes and related processes, i.e. modification of the oxidant power of air: OH radicals abundance, ozone (tropospheric) perturbations.

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**Instrumentation:**

Gas chromatography  
Coupled G.C. - M.S.  
UV analyzers (ozone)  
IR analyzers (CO<sub>2</sub>)

**Meetings:**

Oceanographic cruises and coastal site experiments.

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**Council of Europe  
Centre Natropa**

**Strasbourg Cedex F-67075  
France**

**Contact:** Mr. Jean-Pierre Ribaut, Head, Environment, Conservation and  
Management Division

**Telephone:** + 33 88 41 22 56

**Telefax:** +33 88 42 27 51 +33 88 41 27 84      **Telex:** eur 870 943

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional  
Europe

**Activities:**

Policy development  
Management and Enforcement

**Sectors:**

Flora, Fauna, Ecosystem, Environment and development

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**Keywords:**

12784 WILDLIFE  
12786 WILDLIFE CONSERVATION  
12788 WILDLIFE HABITATS  
25285 WILDLIFE POPULATION STATISTICS

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**Activities Related to Measurements and Monitoring:**

Protection and management of European wildlife and natural habitats through:  
-Systematic studies and enquiries.  
-The "Bern Convention"  
-Seminars and information distribution  
-Campaigns

**Scope of the Measurements/Activities:**

Preservation of the biodiversity by inventories and identification of threatened  
areas.

**Reference materials:**

User; Producer

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**Instrumentation:**

The "Bern Convention" recommendations to governments.

The European Diploma Regulations, which permit to withdraw the Bern convention distinction, given today to 37 protected areas, when the zone is degraded.

**Databases:**

37 European diplomas, with annual reports.

287 biogenetic reserves, with for each: size of the area, type of protection, ownership, altitudes, ecosystems and most characteristic plant and animal species.

**Programme Participation:**

Following the Lucerne Ministerial Conference, an enquiry is underway about all European protected areas and areas which should be protected, in cooperation with the European Environment Agency, IUCN etc.

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**Personnel:** 1000

**Budget:** 150 MIL US\$

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**European Coastal Zone Association for Science and  
Technology (EUROCOAST)**

Site "Marepolis" - La Roton de Boulevard Toussaint Merle  
La Seyne/Mer Cedex F-83501  
France

Contact: Dr. Ing. R.E. Quellenec, President

Telephone: +33 94 3003-01

Telefax: +33 94 3003-33

Telex: C53162

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional

Europe

**Activities:**

Coordination

Data/Information management

Monitoring

**Sectors:**

Marine water, Sediment, Biosphere

Other: Coastal Zone

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**Keywords:**

14000 OCEANS AND COASTAL AREAS

14239 COASTAL DEVELOPMENT

25180 POLLUTION MONITORING

25342 MODELLING AND SIMULATION

26200 INTERNATIONAL ENVIRONMENTAL RELATIONS

26232 INTERNATIONAL STANDARDISATION

27150 GEOGRAPHIC INFORMATION SYSTEMS

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**Activities Related to Measurements and Monitoring:**

Working groups on:

- data base / GIS on coastal zones in Europe
- impacts of sea-level rise
- coastal zone monitoring
- coastal morphological models

- coastal pollution
- coastal urbanization, tourism, etc.
- coastal protection
- coastal management

These will serve to focus activities at a national and European level on issues which are seen as of particular relevance to future developments within the coastal zone.

**Scope of the Measurements/Activities:**

Creation of a European network for scientific and technical cooperation and exchange, both within and outside Europe, on subjects relating to the protection, development and management of the "coastal zone", and to thereby improve existing inventories and knowledge

To establish a data-base and reference library on all aspects of the coastal zone:

Definition and implementation of the "CORINE Coastal Erosion" data-base for the 11 European Community Countries

To promote the wider dissemination of information on the above themes

To take all initiatives and actions which will lead to the realisation of these aims

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**Instrumentation:**

All types of "ad-hoc" instrumentation for coastal zones parameters

**Meetings:**

The following international meetings are organized by the National Committees:

ANTALYA Seminar on "Coastal Protection and Management in the Mediterranean", April 1992, Turkey

"LITTORAL 92" International Symposium, 7-12 September 1992  
Kiel/Buesum, Germany

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**European University for Industrial Chemistry (EHICS)**

1, Rue Blaise Pascal  
F-67000 Strasbourg Cedex  
France

Contact: Dr. Phillippe Lagrange

Telephone: +33 88 41 68 82

Telefax: +33 88 60 75 50

Telex: ulp 870260 f

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**Type of Organization:**  
Academic Organization

**Geographical Scope:**  
Regional  
Europe

**Activities:**  
Education  
Research

**Sectors:**  
Outdoor air, Fresh water

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**Keywords:**  
10120 ATMOSPHERIC CHEMISTRY AND COMPOSITION  
10230 ATMOSPHERIC PRECIPITATION  
13000 FRESHWATER  
21306 ACIDIFICATION  
28112 ATMOSPHERIC PHYSICS

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**Activities Related to Measurements and Monitoring:**  
Laboratory studies of the formation of acidity in clouds  
Kinetic studies of metallic complexation in solution  
Electroanalytical chemistry: ionometry, polarography, voltametry  
The chemistry of polyphosphates in aqueous solutions  
Participation in EUROTRAC project, HALIPP sub-project



**Scope of the Measurements/Activities:**

To improve current knowledge on the kinetics and mechanisms of reactions considered important in the aqueous phase of clouds

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**Instrumentation:**

Stopped flow spectrophotometry

Polarography and voltametry on rotating disk electrodes

Ionometry

**Programme Participation:**

EUROTRAC/HALIPP.

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**International Centre for Alpine Environment (ICALPE)**

Technolac  
Le Bourget du lac F-73374  
France

Contact: Mr. Pier Carlo Zingari, Vice director

Telephone: + 33 79 25 20 04

Telefax: + 33 79 25 28 48

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Europe

**Activities:**

Coordination  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Hydrosphere, Fresh water, Lithosphere, Soil, Biosphere, Flora, Fauna, Human,  
Cross media, Ecosystem, Environment and development

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**Activities Related to Measurements and Monitoring:**

Research coordination and management, interdisciplinary and inter  
institutional programmes covering resources, economy, society and  
sustainable development, scientific meetings, guidelines and publications.

**Scope of the Measurements/Activities:**

Observation of ecosystem and landscape change, climate change, quality of  
water, interactions between tourism activities and the environment,  
desertification monitoring, risk assessment and control and all activities  
concerning mountainous areas.

**QA/QC Activities:**

Direct measurements are performed by partners working in network from  
different countries

**Reference materials:**

User; Producer

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**Databases:**

GIS

FUTURALP database on the consequences of possible climatic change.

**Programme Participation:**

EC-DG X11 research and development programmes EPOCH, STEP, ENVIRONMENT (desertification). All programmes concerned with mountains.

**Publications:**

Newsletter

Several information publications on the ecology and future of the Alps, when faced with climatic change.

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**Personnel: 7**

**Budget: 1.058 MIL US\$**

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**International Centre of Comparative Environmental Law  
(CIDCE)**

**4, Place du Presidial  
Limoges Cedex F-87031  
France**

**Contact:** Mr. Prielia Michel, President

**Telephone:** + 33 55 50 54 21

**Telefax:** + 33 55 50 57 83

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Education  
Research  
Data/Information management  
Other: National and international law.

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**Keywords:**

26116 ENVIRONMENTAL LAW  
27140 ENVIRONMENTAL TRAINING

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**Activities Related to Measurements and Monitoring:**

International congresses  
Training  
Publications

**Scope of the Measurements/Activities:**

To bring together the jurists and the national associations of law regarding the environment in the world. CIDCE's task is the creation of a national association of law regarding the environment. Organisation of international meetings, speeches and scientific seminars of environmental law.

To hold the sessions of the course and the speech formats.

To publish the research and work undertaken.

To participate with the work of the international organizations and NGO's.

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**International Council of Scientific Unions (ICSU)**

51, Boulevard de Montmorency  
Paris F-75016  
France

Contact: Ms. J. Marton-Lefevre, Executive Director

Telephone: +33 1 4525 0329  
Telefax: +33 1 4288 9431

E-Mail: bitnet: icsu@paris7.jussieu.  
Telex: ICSU 645 554 F

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Coordination  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Marine water, Fresh water, Snow/Ice, Lithosphere, Sediment, Soil, Rock, Biosphere, Flora, Fauna, Human, Cross media, Food, Ecosystem, Environment and development, Environment and social conditions

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**Keywords:**

25000 MONITORING AND ENVIRONMENTAL DATA  
25220 ENVIRONMENTAL MONITORING  
25225 ENVIRONMENTAL STATISTICS

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**Activities Related to Measurements and Monitoring:**

ICSU is a multi-faceted organization which has many sub-divisions under the main ICSU heading. These deal with individual topics in the scientific field.

**Scope of the Measurements/Activities:**

See individual ICSU organizations

**QA/QC Activities:**

See individual ICSU organizations

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**Instrumentation:**

See individual ICSU organizations

**Databases:**

See individual ICSU organizations

**Programme Participation:**

See individual ICSU organizations

**Publications:**

See individual ICSU organizations

**Meetings:**

See individual ICSU organizations

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**Personnel: 8**

**Budget: 3.5 MIL US\$**

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**International Social Sciences and Environment Network  
(RISE Centre)**

101 Rue des Tuileries  
Limoges F-87100  
France

Contact: Dr. Dominique Allan-Michaud, Founder and Coordinator

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**Type of Organization:**  
Non-Governmental Organization  
International

**Geographical Scope:**  
Global

**Activities:**  
Education  
Research

**Sectors:**  
Environment and social conditions

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**Keywords:**  
15212 ECODEVELOPMENT  
25220 ENVIRONMENTAL MONITORING  
27130 ENVIRONMENTAL EDUCATION

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**Activities Related to Measurements and Monitoring:**

Many working meetings take place, particularly in France and Germany. RISE is preparing a bilingual book on the theme "Environment and intercultural pedagogy", in cooperation with the Franco-German Youth Office, which is coordinating a Franco-German research group working on the history of the environment-ecology concepts and their definitions (GRICE, founded in 1989).

RISE also have an office in Paris at 31 Rue des Chazelles, Postcode 75017. Telephone: +33 1 46 22 40 23.



**Scope of the Measurements/Activities:**

To facilitate encounters of researchers with different specialities among organizations in various countries and to contribute to popularisation and dissemination of research results.

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**International Union of Geodesy and Geophysics (IUGG ICSU)**

18 avenue Edouard Belin  
Toulouse Cedex F-31055  
France

Contact: Mr. G. Balmino, Secretary General

Telephone: +33 61 33 28 89

Telefax: +33 61 25 30 98

Telex: 531081 f

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Global

**Activities:**

Research

**Sectors:**

Atmosphere, Hydrosphere, Marine water, Fresh water, Snow/Ice,  
Lithosphere, Sediment, Soil, Rock

Other: Monitoring and research of earthquakes and volcanic eruption. IUGG is  
an international scientific union member of ICSU

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**Keywords:**

10481 SEA LEVEL RISE  
12570 VOLCANOES  
14190 TIDES AND SEA LEVELS  
20158 SOLAR ENERGY  
24110 CYCLONES  
24120 EARTHQUAKES  
24180 TROPICAL STORMS  
28141 GLACIOLOGY

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**Activities Related to Measurements and Monitoring:**

Regular General Assembly of the Union, every four years.

Meetings of the seven semi-autonomous Associations which compose the  
Union.

**Scope of the Measurements/Activities:**

Study of the prediction of earthquakes, volcanic eruptions and tropical cyclones.

Observation of climatic change at various scales.

**QA/QC Activities:**

Many comparison exercises and data validation processes, which are approved by International Working Groups

**Reference materials:**

User

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**Instrumentation:**

Observatory type measurements

Earth satellites

**Databases:**

Databases established and maintained by the ten permanent services of the Federation of Astronomical and Geophysical Service (FAGS).

**Programme Participation:**

WCRP, IGBP, ICL and SEDI.

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**Budget: 380 000 US\$**

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**National Centre for Scientific Research (CNRS)**

46, rue d'Ulm  
Paris Cedex 05 F-75230  
France

Contact: Dr. Jean-Claude Menaut, Deputy Director

Telephone: +33 1 44323708

E-Mail: [menaut@wotan.ens.fr](mailto:menaut@wotan.ens.fr)

Telefax: +33 1 44323885

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Regional  
Tropical Savannas in West Africa

**Activities:**

Education  
Research  
Monitoring

**Sectors:**

Hydrosphere, Fresh water, Lithosphere, Soil, Biosphere, Flora, Fauna,  
Cross media, Ecosystem

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**Keywords:**

10445 GLOBAL WARMING  
12156 SOIL CONSERVATION  
28171 SOIL SCIENCES

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**Activities Related to Measurements and Monitoring:**

Field ecological and ecophysiological measurements  
Plant and soil chemical analyses  
Stable isotopes  
Chromatography  
Spectrometry  
Holding international meetings  
Publishing textbooks  
Organising scientific exhibitions

**Scope of the Measurements/Activities:**

Monitoring ecosystem changes  
Analyzing changes in processes as a response to stress and disturbance  
Validation of models

**QA/QC Activities:**

Internal QC  
Interlaboratory comparisons

**Reference materials:**

User

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**Instrumentation:**

Physiological measurements  
Plant and soil chemical analyses

**Programme Participation:**

IGBP-GCTE ecosystems response to global change. SCOPE organic matter cycling. IUBS/UNESCO:RSSD: responses to stress and disturbance.

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**National Institute for Industrial Environment and Risks  
(INERIS)**

Parc Technologique ALATA  
Verneuil en Halatte F-60550  
France

Contact: Mr. Michel Laverie, General Manager

Telephone: + 33 44 55 6677

Telefax: + 33 44 55 6699

Telex: 140 094 F

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

France

**Activities:**

Monitoring

Research

Policy development

**Sectors:**

Outdoor air, Indoor air, Fresh water, Soil, Cross media

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**Keywords:**

16115 FIRE SAFETY REQUIREMENTS

18112 CHEMICAL INDUSTRY

22120 HAZARDOUS SUBSTANCES

25172 POLLUTANT SOURCE IDENTIFICATION

25306 ANALYTICAL EQUIPMENT

26232 INTERNATIONAL STANDARDISATION

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**Activities Related to Measurements and Monitoring:**

INERIS's expertise covers chemical pollution and technological hazards as a whole (explosion, fire, air, water and soil pollution), only nuclear hazards being excepted.

The institute also provides technical support both in detecting problems and in proposing the means of solution. Its range of competence extends to the drafting of national and international standards and technical regulations.

INERIS serves local authorities and industrialists by undertaking, managing and coordinating studies and research on industrial environment and safety.

**Scope of the Measurements/Activities:**

- Pollutant control monitoring
  - Identification of pollution sources
  - Verification of models
  - Certification of measuring equipment
- 

**Instrumentation:**

- Air quality measuring devices
- Explosimeters
- Dust sampling
- Rock mechanics properties

**Meetings:**

- "Portes Vertes" (Technical/Scientific conferences and meetings).
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**Aerospace Institute Berlin (WIB)**

Lassenstr. 11-15  
Berlin D-14193  
Germany

Contact: Prof. Dr. Reinhard Furrer

Telephone: +49 30 820910

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**Type of Organization:**

Industrial or Commercial  
National

**Geographical Scope:**

Regional  
Europe

**Activities:**

Education  
Research

**Sectors:**

Outdoor air, Marine water, Fresh water, Soil

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**Keywords:**

25348 MONITORING EQUIPMENT  
25360 REMOTE SENSING  
27110 DATA PROCESSING

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**Activities Related to Measurements and Monitoring:**

The application-oriented developments of sensors as well as data evaluation is performed in cooperation with research institutes from different universities as well as with other research institutions.

**Scope of the Measurements/Activities:**

The main scope of the WIB GmbH is to develop new experimental technics for remote sensing applications and to perform respective experiments on a contractual basis for customers. The company also initiates seminars and international conferences on remote sensing applications and is involved in setting up a centre for remote sensing in Berlin. WIB GmbH is also setting up an environmental data bank especially with (former) USSR data.



**Instrumentation:**

Aerial photography

VIS-spectroscopy

IR spectroscopy

Radar data

Radar scatterometer

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**Alfred-Wegener-Institute for Polar and Marine Research (AWI)**

Columbus Strasse  
Bremerhaven D-27515  
Germany

Contact: Prof. Dr. rer. nat. Wolfgang Ernst

Telephone: +49 471 4831 500

Telefax: +49 471 4831 149

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Coordination

Research

Monitoring

Assessment

**Sectors:**

Outdoor air, Marine water, Sediment, Biosphere

Other: Marine Biology, Marine Geophysics

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**Keywords:**

10418 CLIMATIC CHANGE

12420 ANTARCTIC REGION

12450 ARCTIC REGION

14142 MARINE POLLUTION

22190 TRACE ELEMENTS

25250 MARINE MONITORING

25342 MODELLING AND SIMULATION

25360 REMOTE SENSING

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**Activities Related to Measurements and Monitoring:**

Field expeditions into the Arctic and Antarctic regions.  
Numerical modelling of oceanic and atmospheric circulations and the regional polar climate.  
Organization of national and international meetings.  
AWI makes research platforms in polar regions available to other institutes on RV Polarstern and in research stations in the Antarctic and the Arctic

**Scope of the Measurements/Activities:**

Observation of climate change  
Development and control of reference materials  
Identification of pollution sources  
Verification of models  
Identification and quantification of biogenic and anthropogenic trace compounds

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**Instrumentation:**

Gas chromatography  
Mass spectrometry  
LIDAR instruments  
FTIR  
Atomic absorption spectroscopy  
Satellites  
Oceanic moorings  
Automatic buoys  
Ships  
Aircraft  
Ground based remote sensing in situ techniques

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**Bavarian State Office for Environmental Protection (LfU)**

Rosenkavalierplatz 3  
Muenchen D-81925  
Germany

Contact: Mr. Juergen Eichorn, Diplom-Ingenieur

Telephone: +49 89 9214 0

Telefax: +49 89 9214 3998

Telex: 529417 baylud

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Subational  
Bavaria

**Activities:**

Management and Enforcement  
Research  
Monitoring

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Fresh water, Lithosphere,  
Soil, Biosphere, Flora, Fauna, Cross media, Food, Environment and  
development  
Other: Waste and noise pollution

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**Keywords:**

10300 AIR POLLUTION  
10418 CLIMATIC CHANGE  
15145 NATURE CONSERVATION  
22472 WASTE DISPOSAL  
25132 NOISE MONITORING  
25172 POLLUTANT SOURCE IDENTIFICATION  
25188 RADIATION MONITORING  
25225 ENVIRONMENTAL STATISTICS  
28106 ANALYTICAL CHEMISTRY

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**Activities Related to Measurements and Monitoring:**

The main activities of LfU are: Environmental research, air and noise pollution, waste problems, radiation protection, nature protection and landscape conservation.

They publish the results of environmental measurement and hold national meetings.

**Scope of the Measurements/Activities:**

Pollutant control monitoring of, for instance, ozone;

Observation of climate change;

Identification of pollution sources;

Vigilance systems;

Measurement of radioactivity in the air around nuclear power plants, and measurement of noise.

Radiological investigations of samples from food such as milk, fruits and meat and from grass and soil.

Observation of waste dumps and incinerating plants, the nature of the plants and inspections of the users of radioactive materials.

**QA/QC Activities:**

Calibration in comparison with other measurements and continual observation.

**Reference materials:**

Producer

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**Instrumentation:**

Various instruments for the measurement of noise, nuclear radiation and air pollution;

Various instruments for chemical analysis.

**Databases:**

LUB: Air Quality Monitoring System of Bavaria.

KFU: Nuclear Reactor Remote Monitoring System.

IFR: Emission Monitoring Network for Radioactivity.

**Publications:**

Treaties and registers of emissions and nuclear radiation.

**Meetings:**

Bavarian meetings for people working in the field of environmental protection.

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**Personnel: 421**

**Budget: 52.8 MIL US\$**

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**Commission on Air Pollution Prevention in VDI and DIN  
(KRdL VDI-DIN)**

Robert-Stolz Strasse 5  
Duesseldorf D-40770  
Germany

Contact: Dr. Klaus. Grefen., Secretary

Telephone: +49 211 6214 532

Telefax: +49 211 62 14 157

Telex: 8586 525

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Germany

**Activities:**

Policy development

**Sectors:**

Outdoor air, Indoor air, Atmosphere

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**Keywords:**

10110 AIR QUALITY  
10130 ATMOSPHERIC PARTICULATES  
10300 AIR POLLUTION  
20255 AIR POLLUTANTS  
22130 INDUSTRIAL EMISSIONS  
26200 INTERNATIONAL ENVIRONMENTAL RELATIONS  
26232 INTERNATIONAL STANDARDISATION  
28157 METEOROLOGY

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**Activities Related to Measurements and Monitoring:**

According to an agreement with the Federal Republic of Germany, the German Standards Institute (DIN) is the only national organisation with a mandate to generate international codes and standards. In order to include questions, the old organizational units (VDI Commission on Air Pollution Prevention and DIN Committee on Clean Air) were combined in mid-1990 to

form a joint body named "Kommission Reinhaltung der Luft im VDI und DIN" (Commission on Air Pollution Prevention in VDI and DIN).

The purpose of this commission is to generate VDI guidelines, DIN standards, preliminary DIN standards, preliminary DIN-EN standards, DIN-EN standards and DIN-ISO standards. In addition the Secretariats of ISO/TC 146 "Air quality" and of CEN/TC 264 "Air Quality" were included in the commission. With respect to international and European codes and standards, the Commission works according to DIN principles and procedures; in work on VDI regulations at a national level, the commission also is required to observe procedural guidelines issued by VDI.

The task of the new "Commission on Air Pollution Prevention in VDI and DIN" includes worldwide cooperation with other standardization organizations and with international organizations such as the United Nations Economic Commission for Europe (UN/ECE) and the World Health Organization (WHO) in order to contribute to a better environment and to promote standardization and harmonization.

The following data will give an idea of the organization of the Commission:

- about 220 expert panels and working groups in 5 technical subdivisions
  - 1) Development and Prevention of Emissions
  - 2) Environmental Meteorology
  - 3) Effects of Dust and Gases
  - 4) Measurement Technology
  - 5) Methods of Waste Gas Cleaning and Dust Separation
- approx. 220 sessions per year
- 1.280 volunteers from the industrial, scientific and administrative sectors
- 26 full-time employees in the administrative office in Duesseldorf (engineers, physicists, chemists, biologists)
- approx. 380 guidelines, 145 of these in English/German
- financial support by the Federal Government

**QA/QC Activities:**

KRdL performs and evaluates round robin tests.

**Reference materials:**

User; Supplier

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**Meetings:**

Approximately 4 meetings every year concerning various topics of air pollution control

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**University of Karlsruhe  
Engler Bunte Institute**

Richard-Willstaetter-Allee 5  
Karlsruhe 1 D-76131  
Germany

Contact: Prof. Dr. F.H. Frimmel

Telephone: +49 721 60 82 580

Telefax: +49 721 69 67 21

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

National  
Germany

**Activities:**

Education  
Research

**Sectors:**

Hydrosphere, Fresh water, Lithosphere, Sediment, Biosphere, Ecosystem

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**Keywords:**

12860 MICROORGANISMS  
13188 WATER RESOURCES CONSERVATION  
13378 WATER POLLUTION  
25270 WATER QUALITY  
25342 MODELLING AND SIMULATION  
28114 BIOCHEMISTRY

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**Activities Related to Measurements and Monitoring:**

Development of new methods and adaptations of known methods for the determination of water quality parameters.  
Application of instrumental methods for trace analysis for aqueous samples.  
Lectures, courses and conferences on the determination, distribution and reactions of pollutants and water technology.  
Publication of studies and surveys of the fate of pollutants in aquatic systems (river Rhine, groundwater etc.)



**Scope of the Measurements/Activities:**

Pollutant control monitoring; biochemical tests for water quality; determination of microbiological parameters (e.g. regrowth rate); distribution and quantification of organisms; modelling of the transport of pollutants in aquatic systems.

**Reference materials:**

Supplier

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**Instrumentation:**

Spectroscopic methods (UV/vis; fluorescence, FTIR etc.);  
Mass spectrometry; chromatography (GC;LC;DC;HPLC);  
Specific detection systems for chromatography (MSD; ECD; FID; DOC);  
Specific systems for water analysis (DOC; AOX; AOS etc.)

**Databases:**

ARW and AWBR

**Programme Participation:**

River basin programme IAWR

**Publications:**

Studies and surveys of the fate of pollutants in aquatic systems are published.

**Meetings:**

Conferences on the determination, distribution and reactions of pollutants and water technology are held.

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Personnel: 80

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**Environmental Research Centre (UFZ)**

Permoser Strasse 15  
Leipzig D-04318  
Germany

Contact: Prof. Dr. Peter Fritz, Wissenschaftlicher Geschaeftsfuehrer

Telephone: +49 341 235 2242

Telefax: +49 341 235 2791

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Research  
Monitoring  
Assessment

**Sectors:**

Fresh water, Soil, Flora, Fauna, Human, Ecosystem, Environment and  
development, Environment and social conditions

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**Keywords:**

12112 CONTAMINATED LAND  
22300 POLLUTION ABATEMENT  
23124 ENVIRONMENTAL HEALTH HAZARDS  
23132 HUMAN EXPOSURE TO POLLUTANTS  
23156 POLLUTANT EFFECTS  
25100 POLLUTANT MONITORING  
25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

Environmental research in heavily contaminated environments  
Regional developments  
Health effects of airborne pollutants

**Scope of the Measurements/Activities:**

Pollutant control

Isotopic composition of precipitation ( $^{18}\text{O}$ ,  $2\text{H}$  and tritium)

Model of contaminant transport (smog and groundwater)

**QA/QC Activities:**

GLP for high precision analyses

Quality control programme (with QA to follow)

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**Instrumentation:**

Mass spectrometry

All standard analytical techniques for organic and inorganic analyses

Liquid scintillation counting

**Programme Participation:**

IAEA, Isotopic Hydrology and Global change.

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**European Experiment on Transport and Transformation of  
Environmentally Relevant Trace Constituents in the  
Troposphere over Europe (EUROTRAC)**

Kreuzeckbahnstrasse 19  
Garmisch-Partenkirchen D-82467  
Germany

Contact: The Scientific Secretary

Telephone: +49 8821 183.140

Telefax: +49 8821 735 73

Telex: 592474 ifu d

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**Type of Organization:**

Intergovernmental Organization

**Geographical Scope:**

Regional

Europe

**Activities:**

Research

Monitoring

Assessment

Data/Information management

**Sectors:**

Outdoor air

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**Keywords:**

10000 ATMOSPHERE

10120 ATMOSPHERIC CHEMISTRY AND COMPOSITION

10220 ATMOSPHERIC CIRCULATION

10300 AIR POLLUTION

21175 PHOTOCHEMICAL AGENTS AND EFFECTS

25306 ANALYTICAL EQUIPMENT

25312 ATMOSPHERIC MODELS

25342 MODELLING AND SIMULATION

28157 METEOROLOGY

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**Activities Related to Measurements and Monitoring:**

Measurements aimed at the understanding of the meteorological, chemical and physical principals which govern the transport and transformation of pollutants over Europe, and the development and validation of predictive models to provide practical information in this field.  
Particular interest in acidity and photo-oxidants.

**Scope of the Measurements/Activities:**

14 subprojects, 240 research groups and 500 workers  
Laboratory and field measurements, apparatus development and modelling

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**Instrumentation:**

All types of instrumentation for atmospheric environmental measurement and monitoring.

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**Federal Environmental Agency.  
Pilot station Frankfurt (UBA)**

Frankfurterstr. 135  
Offenbach D-63020  
Germany

Contact: Dipl.-Met. Wolfgang Grosch, Head of Pilotstation

Telephone: +49 69 22 8020

Telefax: +49 69 800 3873

Telex:413 730 piffm d

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional

Commission of the European Communities

**Activities:**

Research

Monitoring

**Sectors:**

Atmosphere, Outdoor air, Indoor air

Other: Immission (an emission that has entered the environment) concentration  
and

in-car pollution

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**Keywords:**

25196 TRAFFIC MONITORING

25300 MONITORING TECHNIQUES AND EQUIPMENT

25324 CALIBRATION OF MEASURING EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

Holding international comparison experiments (especially in the frame of CEC and EMEP), to compare measuring techniques and calibration gases.

Testing of instruments in accordance to regulations of Germany and CEC.

Development of new measuring techniques. Tasks are restricted to: ambient air concentrations.

**Scope of the Measurements/Activities:**

Pollutant monitoring (pilot function)  
Identification of pollutant sources.

**QA/QC Activities:**

Quality assurance (QA) exists both internally and externally, through the use of QA programmes. In addition to these measures, quality control is undertaken and interlaboratory comparison exercises entered in to.

**Reference materials:**

User

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**Instrumentation:**

GC, Ion GC, AAS, UV-Lumin., Lumin. with Ozone, UV-Absorption.  
PC controlled test bench (18 measuring places).

**Databases:**

Traffic related emission values (eg CO, NO, NO2, BTX, HC and O3).  
Test results of 14 monitors (eg CO, NO, NO2, O3 and SO2)

**Programme Participation:**

EMEP; comparison of NO2 instruments used within the programme.  
Harmonisation of measurements of CO, NO, NO2, O3, BTX and SO2 within CEC.

**Publications:**

Test reports.

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**Personnel: 14**

**Budget: 2 MIL. DM**

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**Federal Institute for Geosciences and Natural Resources (BGR)**

Stilleweg 2  
Hannover D-30631  
Germany

Contact: Dr. W. Eckelmann, Director

Telephone: +49 511 643 2396

Telefax: +49 511 643 2304

Telex: 923 730 bgr had

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Monitoring  
Data/Information management  
Policy development  
Research

**Sectors:**

Lithosphere, Sediment, Soil, Rock, Ecosystem, Environment and development  
Other: Groundwater

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**Keywords:**

10418 CLIMATIC CHANGE  
18200 INDUSTRIAL INPUTS AND OUTPUTS  
25360 REMOTE SENSING  
27150 GEOGRAPHIC INFORMATION SYSTEMS  
28137 GEOLOGY  
28138 GEOMORPHOLOGY  
28139 GEOPHYSICS  
28146 HYDROGRAPHY

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**Activities Related to Measurements and Monitoring:**

Development of a geoinformation system with the branches:  
geology, soils, hydrogeology, geochemistry, raw materials, ecology and  
geomorphology.



**Scope of the Measurements/Activities:**

Observation of past climate change  
Identification of pollution sources  
Verification of models  
Soil and water pollution control monitoring.  
Prognosis of status changes.  
State of the art.

**QA/QC Activities:**

QA exists between the geological surveys of the Laender of the FRG and the BGR.  
QA exists between BGR and other national and international research organizations.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

45 laboratories of different kinds  
Remote sensing equipment for evaluation (Globus)

**Databases:**

Numerous databases on DEC machines in the fields of geology, hydrogeology, geophysics, raw materials, geochemistry, ecology and geomorphology.

**Programme Participation:**

ODP, EOGI, SCGSECS and COGEOINFO, NSF, NERC, CODEODATA, COGEOENVIRONMENT, DEKORP, NAUTILAU, PONAM

**Publications:**

Geological Jahrbuch, series A-F.

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**Personnel: 760**

**Budget: 92 MIL US\$**

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**Federal Institute for Hydrology (BfG)**

**Kaiserin-Augusta-Anlagen 15-17  
Koblenz D-56003  
Germany**

**Contact:** Dr. K. Hofius

**Telephone:** +49 261 13 061  
**Telefax:** +49 261 13 06 302

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
National  
Germany

**Activities:**  
Policy development  
Monitoring  
Assessment

**Sectors:**  
Fresh water, Sediment, Biosphere

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**Keywords:**  
13156 RIVERS  
13188 WATER RESOURCES CONSERVATION  
13378 WATER POLLUTION  
19330 INLAND WATERWAYS  
24135 FLOODS  
25180 POLLUTION MONITORING  
25235 FRESHWATER MONITORING  
28147 HYDROLOGY

**Activities Related to Measurements and Monitoring:**

The Federal Institute of Hydrology is a scientific institute of the Federal Government of Research and Technology (BMFT). It works in the field of hydrology, water resources development and management, and water pollution control, with tasks concerning radiation protection precautions. It acts as adviser to the Federal Ministries and their offices, especially to the

Federal Water and Navigation Authorities, for both basic and detailed questions.

**Scope of the Measurements/Activities:**

Monitoring of (quantitative and qualitative) hydrological elements with respect to maintainance of river navigation.

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**Instrumentation:**

Various, not possible to specify.

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**Federal Maritime and Hydrographic Agency (BSH)**

Bernhard-Nocht-Strasse 78 Dienstgebäude  
Hamburg D-20359  
Germany

Contact: Dr. Dieter P. Kohnke, Director

Telephone: +49 40 3190 3400/1 E-Mail:  
kohnke@itdc.m4.hamburg.bsh.dbp.de  
Telefax: +49 40 3190 5000 Telex:215448 hydro d

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
Regional  
North Sea; Baltic Sea; North Atlantic Ocean

**Activities:**  
Research  
Monitoring  
Data/Information management  
Assessment  
Coordination

**Sectors:**  
Hydrosphere, Marine water, Snow/Ice, Lithosphere, Sediment, Environment  
and development

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**Keywords:**

12148 SEDIMENTATION  
14142 MARINE POLLUTION  
25180 POLLUTION MONITORING  
25250 MARINE MONITORING  
28146 HYDROGRAPHY  
28163 OCEANOGRAPHY

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**Activities Related to Measurements and Monitoring:**  
Several of the tasks of BSH are related to measurements and the  
environment:  
Regular pollutant monitoring off the German coast and North Sea;

The "Optimizing North Sea Monitoring (OPTINOM)" research project;  
The "Transport, turnover and variability of pollutants and nutrients in the German Bight (TUVAS)" research project;  
The "Meeresumweltdatenbank", a database on the marine environment containing data from oceanographic investigations;  
Nautic and hydrographical services like predictions and warnings of tides, storm flows and ice. Ship of opportunity programme

**Scope of the Measurements/Activities:**

OPTINOM and TUVAS should provide the basis for decisions about where and how often sampling should be done in future as well as making it possible to estimate with greater precision the turnover of substances between water, suspended matter and sediments.  
Warning system for radionuclides only

**QA/QC Activities:**

Internal and external QA programmes exist in BSH  
Calibration laboratories and intercalibration exercises

**Reference materials:**

User; Certifier; Supplier

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**Instrumentation:**

CTD, XBT, Current meters, ADCP, thermosalinograph and towed instrumentation such as Delphin  
For heavy metals: TRXFA, AAS, CU AAS and inverse voltametry  
For organic: GC, GC/MS and HPLC  
For radionuclides: alpha and gamma spectrometry and anti coincidence gamma counting

**Databases:**

Marine Environmental Database containing data from monitoring programmes of regional conventions such as HELCOM, PARCOM and national "Bund Lander Messprogramme (BLMP).

**Programme Participation:**

IGOSS of IOC/WMO. IODE of IOC. GIPME of IOC. GLOSS of IOC. GOOS; BLMP; HELCOM (Baltic sea); JMP (North sea and North Atlantic)

**Meetings:**

Annual symposium on the marine environment

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**Personnel:** 1002

**Budget:** 65 MIL US\$

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**Federal Agency for Nature Conservation (BfN)**

Konstantinstrasse 110  
Bonn D-53179  
Germany

Contact: Mr. H.W. Koepfel, Scientific Director

Telephone: +49 228 8491 0 (180)

Telefax: +49 228 8491 200

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Germany

**Activities:**

Policy development  
Research  
Coordination  
Data/Information management

**Sectors:**

Fresh water, Soil, Biosphere, Ecosystem, Flora, Fauna  
Other: Inventories and Mapping of Wildlife and Vegetation

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**Keywords:**

12720 BIOTOPES  
12728 ECOLOGICAL BALANCE  
12730 ENDANGERED ANIMAL SPECIES  
12732 ENDANGERED PLANT SPECIES  
15145 NATURE CONSERVATION

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**Activities Related to Measurements and Monitoring:**

Researching, describing and developing standard lists of plants, wildlife and biotopes, as well as the red data lists of endangered species.  
Different workshops and meetings are held in Bonn and throughout the FRG within this framework of nature conservation and landscape ecology.  
Instruments for landscape planning.

**Scope of the Measurements/Activities:**

Biological monitoring, early warning of changes in ecological systems, mapping of reference materials and model verification.  
Implementation and maintenance of Landscape Information System (LANIS).  
Research and implementation of planning instruments.  
Control of endangered species including the Washington convention (CITES).  
Production of statistics and data concerning the natural environment.

**QA/QC Activities:**

Coordination and harmonization of Geo-coded data in LANIS.  
Combination and improvement of the links between geographic and descriptive data.

**Reference materials:**

User; Producer; Certifier; Supplier

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**Instrumentation:**

Hardware: microcomputer, workstations and input-output devices (also for graphics)  
Software: word processing, calculation programmes, statistical programmes, databank software (ORACLE) and software for GIS.  
Field research equipment and laboratories.

**Databases:**

Many databases under the umbrella of LANIS: BDNL, GEOBUCH, NSCDAT, BIOTEC, LPV, FLORDAT, TAXON, VEGDAT, LEPIDAT, FREIDAT, CITES and WISIA.

**Programme Participation:**

Different international programmes and conventions, such as: CORINE Programme. Bonn and Bern conventions. Ramsar convention. UNESCO-MAB.

**Meetings:**

Several meetings during the year related to BfN's participation in the international programmes mentioned.

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**Personnel:** 200

**Budget:** 20 MIL US\$

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**Federation of German Industries (BDI)  
Department of Environmental Policy**

Gustav-Heinemann-Ufer 84-88  
Koeln D-50941  
Germany

Contact: Mr. Bernd Dittmann, Head of department of environmental policy.

Telephone: +49 221 37 08 581  
Telefax: +49 221 37 08 730

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**Type of Organization:**

Industrial or Commercial  
National

**Geographical Scope:**

National  
Germany

**Activities:**

Coordination  
Policy development  
Other: All fields of the environment

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**Keywords:**

15145 NATURE CONSERVATION  
22130 INDUSTRIAL EMISSIONS  
25225 ENVIRONMENTAL STATISTICS

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**Activities Related to Measurements and Monitoring:**

Taking initiatives and coordinating the industrial position in the field of the environment, e.g. environmental measurement, water protection, protection of nature, emission control, environmental compatibility of products and industrial processes, standards, issuing and promoting guidelines, information in the environmental sector.



**Scope of the Measurements/Activities:**

No technical measurements

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**Meetings:**

WICEM II 10-12. April 1991 in Rotterdam

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**Fraunhofer-Institute for Atmospheric Environmental Research (IFU)**

Kreuzeckbahnstrasse 19  
Garmisch-Partenkirchen D-82467  
Germany

Contact: Dr. Wolfgang Seiler, Director

Telephone: + 49 8821 1830 E-Mail: INTERNET user name a)ifu.fhg.de

Telefax: + 49 8821 73573 Telex:592474 ifu d

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Europe

**Activities:**

Research  
Monitoring  
Data/Information management

**Sectors:**

Atmosphere, Outdoor air, Lithosphere, Soil

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**Keywords:**

10000 ATMOSPHERE  
10300 AIR POLLUTION  
22190 TRACE ELEMENTS  
25210 ATMOSPHERIC MONITORING  
25245 LONG-TERM TRENDS AND FORECASTING  
25306 ANALYTICAL EQUIPMENT  
25324 CALIBRATION OF MEASURING EQUIPMENT  
26232 INTERNATIONAL STANDARDISATION

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**Activities Related to Measurements and Monitoring:**

Organization and holding of international meetings  
Coordination of international projects on development, harmonization,  
improvement of instruments, calibration procedures etc.

Development of instruments for measurements of atmospheric pollutants, both photochemically produced species and precursors (TDLS, DOAS, GC, Mass-spectrometry, standard techniques)  
Organisation of intercalibration exercises (in polluted and clean air)  
Intercomparison of different instruments / methods etc.  
Numerical modelling of atmospheric transport, transformation and deposition of pollutants.

**Scope of the Measurements/Activities:**

Measurements are performed at various ground-based sites and in the free troposphere for:

- Validation of models, emission inventories etc.
- Pollution control / Environmental monitoring
- Identification of pollution sources
- Determination of pollution transport (vertical/horizontal)
- Early warning system (radioactivity)
- Trend analyses of environmentally important trace substances

**QA/QC Activities:**

QA/QC programme for IFU measurements.

Organization of QA/QC programmes for larger research projects (TRACT, SANA) and international programmes.

Participation in interlaboratory comparison exercises (international)

Organisation of said interlaboratory exercises.

**Reference materials:**

User; Supplier

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**Instrumentation:**

Tunable Diode Laser Spectrometry (TDLS)

Light Detection and Ranging (LIDAR)

DOAS

GC-MS and Gas chromatography

Ion-Chromatography

Chemiluminescence, Fluorescence

HPLC

AAS

**Databases:**

SANA database on emissions, air quality, ecological data, Eastern Germany and surface and aircraft data.

BAYERN stations on air quality data for the region of the Bavarian Northern Alps, since 1978.

**Programme Participation:**

UNDP (emission of greenhouse gases from rice paddies). EUROTRAC (international secretariat and participation in subprojects; BIATEX, TOR, JETDLAG, TRACT and GCE). EUROSILVA (advanced methods in tree physiology). EEC (STEP, EPOCH). GACEP (sub-working group 6: Stratospheric aerosol). GCOS-GAW

**Meetings:**

Intercomparison experiment for non-methane hydrocarbons at the Wank site (April - December 1991)

Intercomparison for CO, CKW, N<sub>2</sub>O

Intercomparison for H<sub>2</sub>O<sub>2</sub>

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**Personnel: 100**

**Budget: 15 MIL US\$**

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**Fraunhofer-Institute for Environmental Chemistry  
and Ecotoxicology (FhG-IUCT)**

Schmallenberg D-57377  
Germany

Contact: Prof. Dr. Werner Klein, Director

Telephone: +49 2972 302-0

Telefax: +49 2972 30 23 19

Telex: 841 520

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Germany

**Activities:**

Research  
Monitoring  
Assessment  
Data information management

**Sectors:**

Fresh water, Sediment, Soil, Biosphere, Cross media, Outdoor air,  
Hydrosphere, Lithosphere, Flora, Fauna, Ecosystem, Environment and  
development

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**Keywords:**

00000 ECOTOXICOLOGY  
12160 SOIL CONTAMINATION  
12172 SOIL IMPROVEMENT  
15248 ENVIRONMENTAL RISK ASSESSMENT  
17364 PESTICIDE PATHWAYS  
17388 TOXICITY OF PESTICIDES  
21000 CHEMISTRY AND BIOCHEMICAL PROCESSES  
28106 ANALYTICAL CHEMISTRY

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**Activities Related to Measurements and Monitoring:**

Research and development and testing. Principal fields: exposure and effects of chemicals in the environment, analysis, prediction, assessment, decontamination, exposure prediction  
Participation in national standardization organisations  
Participation in national and international scientific committees of experts  
Inter-laboratory testing  
Participation in international projects  
Cooperation with international institutions

**Scope of the Measurements/Activities:**

Identification of pollution sources; fate of chemical substances in the environment; effects of chemicals on ecosystems; development and verification of models for environmental hazard; risk assessment of chemicals and pesticides including QSAR; chemical and ecotoxicological testing of environmental chemicals and pesticides according to guidelines; development and updating of test methods; development of ecotoxicological assessment criteria for chemically stressed terrestrial and aquatic systems; chemical and biological decontamination of soil; life cycle analyses.

**QA/QC Activities:**

GLP certificate issued by the responsible ministry of the North Rhine Westfalia state, for the testing section of the institute; includes determination of PC properties, investigations on the fate of pesticides and chemical substances and ecotoxicological testing.  
Most of the institute's laboratories are working following GLP principles.

**Reference materials:**

User

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**Instrumentation:**

Outdoor field simulation facilities for fate studies (isotopically labelled chemicals).  
Outdoor facility for special exposure of ecosystem compartments.  
Facilities for outdoor simulation of environmental processes.  
Climate controlled greenhouse (isotopically labelled chemicals).  
Special laboratories for ecotoxicological studies.  
Biochemical autoanalyzers.  
Facilities for handling and analyses of radiolabelled materials.  
Mobile analytical laboratory.  
Mass spectrometers, including high resolution, coupled with GC/FT-IR, GC and HPLC.

**Databases:**

STN databases  
Confidential data  
Journals

**Programme Participation:**

STEP

**Publications:**

Annual Report  
List of Publications on specific topics on request  
Public meetings on specific topics are announced in the media

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**Personnel: 102**

**Budget: 8.5 MIL US\$**

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**Fraunhofer Institute for Physical Measurement Techniques  
(FhG-IPM)**

Heidenhofstrasse 8  
Freiburg D-79110  
Germany

Contact: Prof. Dr. Elmar Wagner

Telephone: +49 761 8857 0  
Telefax: +49 761 8857 224

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**Type of Organization:**  
Non-Governmental Organization  
National

**Geographical Scope:**  
Regional  
Europe

**Activities:**  
Research

**Sectors:**  
Outdoor air, Indoor air

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**Keywords:**  
10300 AIR POLLUTION  
10340 CHLOROFLUOROCARBONS  
10418 CLIMATIC CHANGE  
22162 ORGANOHALOGEN COMPOUNDS  
25210 ATMOSPHERIC MONITORING  
25348 MONITORING EQUIPMENT

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**Activities Related to Measurements and Monitoring:**  
Trace gas analysis of air for immission and emission monitoring by means of optical spectroscopy  
Chemical sensors for chlorinated hydrocarbons  
Electro-optical components for spectroscopic instrumentation  
Temperature sensors for balloon-borne weather sonde  
Prototype and custom designed instrumentation



**Scope of the Measurements/Activities:**

Pollutant control monitoring  
Observation of climate change  
Identification of pollution

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**Instrumentation:**

Spectroscopic instruments  
Diode laser (4-20 microns) spectrometers

**Meetings:**

Monitoring of Gaseous Pollutants by Tunable Diode Lasers.

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**German Aerospace Research Establishment.(DLR)  
German Remote Sensing Data Centre (DFD)**

Muenchner Strasse  
Wessling D-82234  
Germany

Contact: Dr. Hans-Joachim Lotz-Iwen, Project head

Telephone: + 49 8153 1373      E-Mail: Lotz @dirtcs. da. op. dlr. de.  
Telefax: + 49 8153 1445      Telex: 5270286 daal d

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Data/Information management  
Research  
Monitoring

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Snow/Ice, Lithosphere, Sediment,  
Soil, Biosphere, Flora, Cross media, Environment and development  
Other: Land cover, vegetation

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**Keywords:**

25000 MONITORING AND ENVIRONMENTAL DATA  
25200 MONITORING CRITERIA AND DATA  
25360 REMOTE SENSING  
27110 DATA PROCESSING  
27120 DATA RECORDING TECHNIQUES

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**Activities Related to Measurements and Monitoring:**

Acquisition and archiving of remotely sensed satellite imagery  
Evaluation of remote sensing data and development of processing techniques  
Training courses for scientists  
Regular meetings of the national user community

**Scope of the Measurements/Activities:**

Monitoring of: forest disease, sea surface temperature, sea ice coverage and stratospheric ozone.  
Production, archiving and distribution of remotely sensed data.  
Verification of models.

**QA/QC Activities:**

For ERS-1 Radar data: production along with ESA-specifications for PAFs.  
(Processing and archiving facilities)  
For NOAA satellite data: production of SHARK products along with ESA specifications.

**Reference materials:**

User; Producer; Supplier

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**Instrumentation:**

Receiving stations for NOAA, Meteosat and ERS-1 in Germany.  
Receiving stations for NOAA and ERS-1 in Antarctica.  
Network of UNIX based workstations for data analysis.  
Long term archive on magnetic tapes and optical disks.  
On-line archive on optical disk jukeboxes.

**Meetings:**

User seminar in September 1991  
Training courses on remote sensing and ecological mapping  
(1990-1991)

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**German Aerospace Research Establishment.(DLR)  
Institute for Optical Electronics**

**Wessling D-82234  
Germany**

**Contact:** Dipl.-Forstw. Hans-Henning Voss

**Telephone:** + 49 8153 28-857

**Telefax:** + 49 8153 28-1349

**Telex:** 0526419 (dfvir d)

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional

Europe

**Activities:**

Research

Data/Information management

**Sectors:**

Outdoor air, Marine water, Soil

Other: Vegetation ecosystems

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**Keywords:**

12000 TERRESTRIAL ECOSYSTEMS

12778 VEGETATION

13378 WATER POLLUTION

25300 MONITORING TECHNIQUES AND EQUIPMENT

25360 REMOTE SENSING

27110 DATA PROCESSING

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**Activities Related to Measurements and Monitoring:**

Development of remote sensing techniques for environmental monitoring

Pilot projects to apply remote sensing techniques to investigate ecosystems

**Scope of the Measurements/Activities:**

Monitoring of vegetation damage, water pollution and recultivation

**Reference materials:**

User

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**Instrumentation:**

Metric cameras

Multispectralscanner

Imaging spectrometer

Lidar systems

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**German Aerospace Research Establishment.(DLR)  
Institute of Atmospheric Physics**

Muenchner Strasse 20  
Wessling D-82234  
Germany

Contact: Prof. Dr. U. Schumann

Telephone: +49 8153 282520

Telefax: +49 8153 281841

Telex:526419 dvlop d

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Research

Data/Information management

**Sectors:**

Outdoor air

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**Keywords:**

10120 ATMOSPHERIC CHEMISTRY AND COMPOSITION

25210 ATMOSPHERIC MONITORING

25348 MONITORING EQUIPMENT

25360 REMOTE SENSING

28112 ATMOSPHERIC PHYSICS

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**Activities Related to Measurements and Monitoring:**

National and international projects concerning:

Measurement techniques in aircraft

Data processing in aircraft measurements

Air chemistry measurements in aircraft

Remote sensing of atmospheric parameters

**Scope of the Measurements/Activities:**

Observation of climate change  
Identification of pollution sources  
Verification of models  
Influences of air traffic on the atmosphere  
Changes in atmospheric composition

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**Instrumentation:**

Airborne in situ instruments for concentration measurement  
Remote sensing instrumentation  
Mesoscale and global models

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**German Aerospace Research Establishment (DLR)  
Institute for Radio Frequency Technology**

Wessling D-82230  
Germany

Contact: Dr. W. Keydel

Telephone: +49 8153 28 306  
Telefax: +49 8153 28 1135

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**Type of Organization:**  
Governmental Organization

**Geographical Scope:**  
Global

**Activities:**  
Research

**Sectors:**  
Outdoor air, Indoor air, Marine water, Sediment, Soil, Snow/Ice,  
Other: Agriculture

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**Keywords:**  
10418 CLIMATIC CHANGE  
12778 VEGETATION  
25220 ENVIRONMENTAL MONITORING  
25306 ANALYTICAL EQUIPMENT  
25348 MONITORING EQUIPMENT  
25360 REMOTE SENSING

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**Activities Related to Measurements and Monitoring:**  
Participation in international projects and cooperation with international institutions (e.g. EC's ARCHIMEDES campaign)  
Coordination of user-activities and airborne campaigns within international microwave remote sensing satellite /shuttle programmes, e.g. ERS-1, SIR-C/X-SAR, JERS-1, PRIRODA  
Cooperation within the CEOS-group (data formats, calibration)  
Organization of workshops and meetings  
Research and development in the field of microwave techniques, sensors and systems for remote sensing



Development and operation of airborne and ground based radar and microwave radiometers for earth and atmospheric observation  
The main goal of the institute is to develop high resolution, calibrated and economic microwave measurement instruments for earth observation. The application oriented development of the sensors and data evaluation is performed in close cooperation with the national and international user communities formed especially in ESA's ERS-1 project and in the German-Italian-American project SIR-C/X-SAR (X-SAR was "invented" by the institute)

**Scope of the Measurements/Activities:**

Microwave measurements and their evaluation to support the development of pollutant control monitoring, early warning systems, observation of climate change, control of reference materials, identification of pollution sources and verification of models; moreover measurements to observe the status of vegetation, soils and snow/ice

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**Instrumentation:**

Ground based coherent multifrequency radar  
High resolution airborne synthetic aperture radar (SAR) operating in X-, C-, L- and P-Band.  
Multifrequency microwave radiometers  
Coherent C-Band cloud radar

**Meetings:**

SAR campaign in Switzerland (SNOW/ICE)  
SAR campaign in Europe together with NASA  
SAR campaign in the USA together with JPL and NASA (SIR-C/X-SAR)  
SAR campaign in Africa (EC project to map tropical forests)  
Scientific and coordinating /planning meetings within the framework of ERS-1 and SIR-C /X-SAR projects (not regularly, but mostly once or twice a year according to actual needs)

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**German Bunsen Society for Physical Chemistry (DBG)**

Varrentrappstrasse 40-42  
Frankfurt D-60486  
Germany

Contact: Dr. Heinz Behret, General Secretary

Telephone: +49 69 7917 201

Telefax: +49 69 7917 322

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

National

Germany

**Activities:**

Coordination

Education

Research

Monitoring

Assessment

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil,

Atmosphere, Hydrosphere, Snow/Ice, Lithosphere, Ecosystem

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**Keywords:**

10418 CLIMATIC CHANGE

21378 PHYSICO-CHEMICAL PROCESSES

25342 MODELLING AND SIMULATION

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**Activities Related to Measurements and Monitoring:**

Climate change

Development and control of reference materials

Verification of models

Meetings concerning atmospheric chemistry and climate change.

**Reference materials:**  
Producer; Certifier

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**Instrumentation:**  
All types of physico-chemical instrumentation

**Meetings:**  
International meeting: "Physical Chemistry of Atmosphere" (International Discussion Meeting October 7 to 9 , 1991, Schliersee)  
ANAKON (Propers of Analytical Chemistry in Method and Application) April 1993, Baden-Baden.

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**German Society for Mineralogy**

Suesterfeldstrasse 22  
Aachen D-52072  
Germany

Contact: Prof. Dr. Guenther Friedrich

Telephone: +49 241 80 57 74

Telefax: +49 241 805771

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

National  
Germany

**Activities:**

Coordination  
Research

**Sectors:**

Marine water, Fresh water, Sediment, Soil

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**Keywords:**

22120 HAZARDOUS SUBSTANCES

22424 RADIOACTIVE WASTE MANAGEMENT

22472 WASTE DISPOSAL

25164 POLLUTANT PATHWAYS

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**Activities Related to Measurements and Monitoring:**

Institutes and individual members of the society are developing and improving techniques and practices of environmental measurements. Results are reported at the annual meeting of the society and international conferences; they are published in national and international journals.

**Scope of the Measurements/Activities:**

Development and control of reference materials  
Identification of pollution sources  
Verification of models  
Special activities: deposits of problematic waste

**Reference materials:**

Certifier; User

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**Instrumentation:**

XRF, AAS, Mass Spectrometry, ICP, various spectroscopic methods.

**Meetings:**

Annual meeting in September 1991 in Salzburg (together with  
Oesterreichische Mineralogische Gesellschaft)

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**Global Precipitation and Climatology Centre (GPCC)**

Offenbach D-63004  
Germany

Contact: Mr. Bruno Rudolf

Telephone: +49 69 8062 2981

Telefax: +49 69 8062 2880

Telex:415 2817

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Global

**Activities:**

Assessment

Monitoring

**Sectors:**

Atmosphere, Outdoor air

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**Keywords:**

10230 ATMOSPHERIC PRECIPITATION

25342 MODELLING AND SIMULATION

25360 REMOTE SENSING

27110 DATA PROCESSING

27120 DATA RECORDING TECHNIQUES

28125 CLIMATOLOGY

28147 HYDROLOGY

28157 METEOROLOGY

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**Activities Related to Measurements and Monitoring:**

The GPCC was initiated by WMO and established in 1988 and is now in a "trial" operational phase. It is a central element of the Global Precipitation Climatology Project (GPCP), a part of WCRP. Routine operation will start in 1994. The main task of the centre is to provide global monthly precipitation totals on a 2,5 degree grid.

To construct these gridded global monthly precipitation fields, data from different sources are collected:

Raingauge data over land, collected through the WWW GTS and complemented by data obtained from bilateral contacts. The finished data products are supplied to the WDC's for Meteorology.  
Remote sensing IR and microwave data from several meteorological satellites; Where no other data are available (polar regions), theoretical results of numerical weather prediction models are used.

**Scope of the Measurements/Activities:**

Global precipitation analyses are necessary for climatological and hydrological research, e.g. to investigate the global water balance, and for the verification of climate and general circulation models.

**QA/QC Activities:**

Quality assessment for all input data.  
Estimation of the error range of the global analyses.

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**Instrumentation:**

Conventional rain gauges.  
Satellite images (infra-red, microwave)  
Mainframe computer.  
Graphical workstations.  
IBM compatible personal computers.

**Databases:**

Precipitation data from all available observation techniques, on a monthly time scale.  
Digital topographical data.

**Programme Participation:**

WCP/WCRP/GPCP. GCOS. GEWEX.

**Publications:**

Periodic publication of gridded precipitation maps and data sets of monthly totals and anomalies.

**Meetings:**

Workshops (irregularly held).

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**Personnel:** 9 (planned)

**Budget:** 800 000 US\$

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**Global Run-off Data Centre (GRDC)**

Kaiserin-Augusta-Anlagen 15-17  
Koblenz D-56003  
Germany

Contact: Dr. Wilke

Telephone: +49 261 1306 0  
Telefax: +49 261 1306 302

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**Type of Organization:**  
United Nations Organization

**Geographical Scope:**  
Global

**Activities:**  
Coordination  
Data/Information management

**Sectors:**  
Fresh water

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**Keywords:**  
10418 CLIMATIC CHANGE  
13156 RIVERS  
13326 RUN-OFF AND SEEPAGE  
25235 FRESHWATER MONITORING  
27110 DATA PROCESSING  
27120 DATA RECORDING TECHNIQUES

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**Activities Related to Measurements and Monitoring:**

GRDC was established by the Federal Republic of Germany under the auspices of the WMO. The database currently consists of flows for 3070 river stations from 140 countries. Daily flows for 1834 stations are available and monthly flows for 1509. These numbers include 273 stations with both daily and monthly data.



**Scope of the Measurements/Activities:**

Collection of run-off data to support studies of climate change.

Participation in international programmes and cooperation with international institutions.

Development of grid-point estimates.

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**Programme Participation:**

WCP-water. GEMS/water. IHP of UNESCO. GRID/UNEP

**Meetings:**

Workshop annual meeting of the Steering Committee every three years.

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**Institute for European Environmental Policy (IEUP)**

Roonstrasse 7  
Bonn D-53175  
Germany

Contact: Dr. Jan C. Bongaerts

Telephone: +49 228 95 73 50  
Telefax: +49 228 95 73 522

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**Type of Organization:**

Non-governmental Organization

**Geographical Scope:**

Regional  
Europe

**Activities:**

Coordination  
Policy development

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**Keywords:**

13196 WATER RESOURCES DEVELOPMENT  
15244 ENVIRONMENTAL POLICY  
15288 TRANSPORT PLANNING  
17000 AGRICULTURE  
20230 ENERGY CONSERVATION  
20245 ENERGY POLICY  
22130 INDUSTRIAL EMISSIONS  
22400 WASTE DISPOSAL AND USE  
26116 ENVIRONMENTAL LAW  
27130 ENVIRONMENTAL EDUCATION  
27140 ENVIRONMENTAL TRAINING

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**Scope of the Measurements/Activities:**

Integration of environmental matters in other areas of policy of the EC and its member states (agriculture, biotechnology, energy, transport, regional funds, industrial policy, trade policy)  
Environmental law and administration

**Reference materials:**

User

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**Publications:**

List of publications available from IEUP's address

**Meetings:**

Stratospheric ozone measurement campaign, Jan.-March 1991,  
Spitsbergen

Cruise with RV Polarstern to Antarctic Peninsula, Nov. - Dec.  
1991

Ship's expeditions into the Arctic region: June-October 1991

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**Personnel: 10**

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**Institute of Space Science,  
Free University Berlin**

Fabeckstr. 69  
Berlin D-14195  
Germany

Contact: Prof. Dr. R. Furrer

Telephone: +49 30 838 66 66

Telefax: +49 30 832 86 48

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

National

Germany

**Activities:**

Education

Research

Monitoring

**Sectors:**

Outdoor air, Marine water, Fresh water, Soil

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**Keywords:**

10170 OZONE LAYER

22472 WASTE DISPOSAL

25210 ATMOSPHERIC MONITORING

25360 REMOTE SENSING

27110 DATA PROCESSING

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**Activities Related to Measurements and Monitoring:**

Development of new experimental techniques for remote sensing applications

Planning and performance of experiments

Treatment and evolution of these data

Education of students

Initiation of scientific seminars and discussions

**Scope of the Measurements/Activities:**

Tracer gas monitoring in atmosphere  
Ozone depletion monitoring  
Soil moisture determination from aircraft  
IR- and VIS-mapping of the ground with respect to the identification of waste disposal sites

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**Instrumentation:**

IR-interferometer  
Photo-acoustic (IR) spectrometer  
HARRIOT-absorption cell  
IR-imaging scanner  
VIS-imaging scanner  
Radar scatterometer

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**Nuclear Research Centre Karlsruhe (KfK PEF)**

Weberstrasse. 5  
Karlsruhe D-76021  
Germany

Contact: Dr. Gerald Kaendler, Assistant Manager

Telephone: +49 7247 82 5191

Telefax: +49 7247 82 3929

Telex: Teletex 2627/724716 = KfK

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Regional  
Europe

**Activities:**

Coordination

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Fresh water, Lithosphere, Soil,  
Biosphere, Flora, Cross media, Ecosystem

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**Keywords:**

10120 ATMOSPHERIC CHEMISTRY AND COMPOSITION

10310 ACID RAIN

12370 TEMPERATE FORESTS & WOODLANDS

12480 TEMPERATE ECOSYSTEMS

12812 ENZYMES

21378 PHYSICO-CHEMICAL PROCESSES

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**Activities Related to Measurements and Monitoring:**

Funding and coordinating of research on air pollution, e.g. novel forest decline in Baden-Wuerttemberg.

Main sites are Black forest (watershed budget) including fertilization projects. Other sites with investigations into tree physiology and biochemistry.

Coordinated sampling dates for needles, February, April, June, August, November

Weekly soil water sampling, tension meters, rainfall crown passage  
Continuous measurement of environmental parameters such as global radiation temperature, surface wetting, wind speed, rainfall, air humidity, SO<sub>2</sub>, O<sub>3</sub>

**Scope of the Measurements/Activities:**

Effects of air pollutants on forest trees and forest ecosystems  
Physiological and biochemical pathways which are effected with respect to diagnosis and early damage  
Nutrient cycling and the role of leaching  
The effects of climate on tree growth

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**Instrumentation:**

Open-top-chambers  
Different specialized laboratories for:  
- enzyme analysis  
- soil analysis  
- soil water analysis  
- chlorophyll fluorescence equipment  
- porometer (gas exchange of plants)

**Databases:**

Database of LUBW concerning main air pollutants in daily and monthly courses.  
FV and FBW databases on quantity of rain and element input.  
FV and FBW databases on the nutritional status of trees and the elemental content of needles.  
FV and FBW databases on the elemental content and humidity of soils and soil mapping.

**Programme Participation:**

EC-STEP- open top chambers. EC-ENCORE

**Publications:**

The results of international working group sessions are published as reports in the KfK-PEF-Series ISSN 0931-2749  
Presentation of reports (Kolloquium) each March

**Meetings:**

International working group sessions 17.-19. March 1992 Kolloquium, Karlsruhe

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**Society of German Chemists (GDCh)**

Varrentrappstrasse 40/42  
Frankfurt D-60444  
Germany

**Contact:** Dr. Heinz Behret

**Telephone:** +49 69 7917 363

**Telefax:** +49 69 7917 322

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Germany

**Activities:**

Coordination

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil, Biosphere,  
Cross media, Food  
Other: GDCh deals with all kinds of measurements of environmental relevance

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**Keywords:**

00000 ECOTOXICOLOGY  
22300 POLLUTION ABATEMENT  
25306 ANALYTICAL EQUIPMENT  
28106 ANALYTICAL CHEMISTRY

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**Activities Related to Measurements and Monitoring:**

Several divisions of GDCh, e.g. analytical chemistry, food chemistry society (a division of GDCh), chemistry of detergents, water chemistry etc., develop, improve and harmonize techniques and practices of environmental measurement ( holding regular meetings, issuing guidelines and publishing agreements).

The GDCh working party on "Environmental Ecotoxicology Chemistry" will be the basis of a new division.



The GDCh advisory committee on existing chemicals of environmental relevance (BUA) selects and investigates existing chemicals with a view to ecological effects, and publishes lists of priorities and special documents (BUA reports) on chemicals.

**Scope of the Measurements/Activities:**

Include pollutant control, observation of climate change, development and control of reference materials, identification of pollution sources and verification of models.

The BUA reports include conclusions and recommendations on existing chemicals.

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**Instrumentation:**

All types of chemical and physio-chemical instrumentation

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**State Environmental Protection Agency Baden Wuerttemberg  
(LfU)**

Griesbachstrasse 1  
Karlsruhe W-76157  
Germany

Telephone: +0721 983 1300

Telefax: +0721 983 1456

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Subnational

Baden-Wuerttemberg

**Activities:**

Monitoring

Assessment

Data/Information management

Coordination

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Fresh water, Lithosphere,  
Sediment, Soil, Flora, Fauna, Cross media, Ecosystem

Other: Noise pollution, Radioactivity, Light, Chemicals

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**Keywords:**

10110 AIR QUALITY

10418 CLIMATIC CHANGE

12000 TERRESTRIAL ECOSYSTEMS

13172 SUBTERRANEAN WATER

25108 BIOLOGICAL INDICATORS

25188 RADIATION MONITORING

25225 ENVIRONMENTAL STATISTICS

28121 CARTOGRAPHY

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**Activities Related to Measurements and Monitoring:**

Register of ecological impact of pollution, with active and passive monitoring  
including long-term monitoring sites in wood and grasslands and observation  
points along rivers and streams.

Bioindicators such as tobacco plants, cloned spruce trees, fish and mosses.

Remote monitoring of nuclear reactors with concentric measurement of radioactivity burden around the nuclear power plants in Obrigheim, Philippsburg and Neckarwestheim, and semicircular measurements in the German region around the nuclear power plants in Fessenheim (France), Beznau and Leibstadt (Switzerland). Measurements include local gamma dose-rate in microsieverts per hour.

Radiological investigation of samples from different environmental media, including the food chain on land (samples of milk, grass, soil, fruits etc.) and in water (collection of drinking water samples, water plants etc.)

Running water monitoring network with data on the quality of running water in Baden-Wuerttemberg.

Ground water monitoring network with collection of data on the level of ground water and other factors, and examination of ground water quality.

Monitoring network for soil with long term monitoring sites and establishment, as newly required, of soil samples, soil databases and a register of soil condition

Continuous air quality monitoring network

Observation and measurement of the environment, evaluation, advising of other Baden-Wuerttemberg state authorities.

**Scope of the Measurements/Activities:**

Concept advisory service for the State Government and ministries

Technical advisory service for specialist state authorities on questions of technical and ecological environmental protection

Environmental observation and monitoring, environmental reporting, environmental documentation and environmental information

The task of the LfU can best be summarized by the words:

observe, evaluate, advise.

Pollutant control monitoring

Verification of models

Early warning systems

Maintenance of industrial health and safety standards

Observation of the environmental situation (air, water, soil, biosphere), biomonitoring and pollution monitoring.

**QA/QC Activities:**

Local QA programme

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**Instrumentation:**

High quality laboratory equipment and monitoring stations for all mediums.

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**Institute for Hydraulics  
University of Armed Forces Munich (UniBwM)**

**Werner-Heisenberg-Weg 39  
Neubiberg D-85579  
Germany**

**Contact: Prof.Dr. Wilhelm Bechteler**

**Telephone: +089 6004 3486**

**Telefax: +089 6004 3560**

**Telex:5215800 bwd (uni)**

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

National

Germany

**Activities:**

Research

Education

**Sectors:**

Hydrosphere, Fresh water

Other: Sediment and water in rivers and sewage systems, technical application of regenerative energies and numerical modelling of flow and transport

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**Keywords:**

13339 SEDIMENT TRANSPORT

22176 SEWAGE

22364 POLLUTION CONTROL TECHNOLOGY

25342 MODELLING AND SIMULATION

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**Activities Related to Measurements and Monitoring:**

Development of an in situ measuring device of the critical velocity for resuspension of sediments in sewerage systems or reservoirs.

Guidelines for sediment transport (ST) measurement.

Developing ST measuring techniques.

Flow measurement in laboratory and field conditions.

**Scope of the Measurements/Activities:**

Pollutant contamination monitoring

Expert systems for PV pumping system.

Basic data for mathematical simulation models for pollutant transport in and out of the sewage system.

Devising reference data.

Early warning systems for dam break.

Verification of hydrodynamic-numerical models combined with pollutant dispersion.

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**Instrumentation:**

Complete hydraulics laboratory

Underwater video camera systems

Automatic frame processing system

PV test facilities for all components

Electronic laboratory

3-D Laser Doppler

**Programme Participation:**

Photovoltaic pumping for developing countries.

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**World Economy, Ecology and Development  
Information and Service Office (WEED)**

**Berliner Platz 1  
Bonn D-53111  
Germany**

**Contact: Mr. Peter Wahl, Executive Director**

**Telephone: +49 228 696479      E-Mail: weed@gruen-bv.zer (de)  
Telefax: +49 228 696470      Telex:696470**

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**Type of Organization:**

Non-Governmental Organization  
National

**Geographical Scope:**

National  
Germany

**Activities:**

Policy development  
Coordination

**Sectors:**

Environment and development

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**Keywords:**

15216 ECONOMIC DEVELOPMENT  
15220 ECONOMIC PLANNING  
15278 SOCIAL SURVEYS  
16145 INDUSTRIAL AREAS  
16400 SOCIO-ECONOMIC ASPECTS OF HUMAN SETTLEMENTS  
16464 SOCIAL AND CULTURAL INDICATORS  
16468 SOCIO-ECONOMIC FACTORS  
25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

WEED is concerned with the vital, current threat of the increasing gap in economic conditions between the North and South of the globe. WEED advocates the need for a radical re-structuring of the entire system of production and consumption in the industrialized countries. At the same time, WEED advocate that a fundamental change of the world economic order in the interest of the South is required.

**Scope of the Measurements/Activities:**

To serve as an interface for the NGO movement between the international and the national level.  
To connect the UN system and other international organizations with NGO`s, grass root and popular movements.  
To link extra parliamentary work with lobbying at all levels.  
To promote networks between the different social movements and political streams of thinking.  
To transmit to the NGO movement all results of research which are relevant to it`s work.  
To deliver information, documentation, expertise and know-how.

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**Hellenic Society for the Protection of Nature (HSPN)**

**24, Nikis street  
Athens GR-10557  
Greece**

**Telephone: +30 1 322 49 44/322 52 85**

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**Type of Organization:**

Non-Governmental Organization

**Geographical Scope:**

National  
Greece

**Activities:**

Policy development  
Coordination

**Sectors:**

Biosphere, Flora, Fauna

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**Mesoamerican Centre for the Study of Appropriate Technology  
(CEMAT)**

Guatemala City 01901  
Guatemala

Contact: Arch. Kajsa Asturias, Executive Director

Telephone: +502 2 71 83 80

Telefax: +502 2 71 83 80

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Latin America

**Activities:**

Coordination  
Policy development

**Sectors:**

Outdoor air, Indoor air, Fresh water, Soil, Food,  
Environment and development, Environment and social conditions.  
Other: Transfer of appropriate technology and information diffusion.

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**Keywords:**

12156 SOIL CONSERVATION  
12160 SOIL CONTAMINATION  
12164 SOIL DEGRADATION  
12724 BOTANICAL GARDENS  
17000 AGRICULTURE  
17136 COMPOSTS AND NATURAL FERTILIZERS  
20104 BIOGAS  
20106 BIOMASS  
22112 CROP WASTE  
22186 TOXIC WASTE  
22464 WASTE ASSIMILATION CAPACITIES  
22468 WASTE CONVERSION TECHNIQUES  
22480 WASTE RECOVERY  
23124 ENVIRONMENTAL HEALTH HAZARDS  
25200 MONITORING CRITERIA AND DATA

25220 ENVIRONMENTAL MONITORING  
27130 ENVIRONMENTAL EDUCATION  
29317 ENGLISH  
29367 SPANISH  
30020 DEVELOPING COUNTRIES  
30201 NORTH AMERICA  
30202 CENTRAL AMERICA  
30203 CARIBBEAN AREA  
30204 SOUTH AMERICA

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**Activities Related to Measurements and Monitoring:**

Dry alkaline fertilizer latrines: to desiccate and alkalinize human faeces, rendering them odourless and pathogen free and producing an excellent soil conditioner.

Biogas plants: agricultural, livestock and human wastes converted into safe and effective soil fertilizer and flammable gas, and environmental protection.

Rainwater catchment cisterns: simple rain water catchment and storing tanks.

Public forest and environment: communal forest management with fast-growing species as well as awareness of clean air, water and energy.

Information Centre: availability of documents for consultation; translations of appropriate technology documents; strengthening rural libraries; publication and dissemination of AT documents, and concern with environmental activities.

Improved cookstove: comfortable, safe, smokeless and efficient for saving firewood; environment protection; the typical model is the lorena stove.

**Scope of the Measurements/Activities:**

Pollution control monitoring  
Development and control of reference materials  
Identification of pollution sources  
Verification of models

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**Databases:**

16,000 Document database of appropriate technology and related topics.

**Publications:**

"RED" periodical newsletter of CEMAT (English and Spanish).  
54 publications on appropriate technology.

**Meetings:**

Diverse workshops  
Training activities

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**Personnel:** 25

**Budget:** 500,000 US\$

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**Water Resources Research Centre (VITUKI)**

**Budapest H-1453  
Hungary**

**Contact:** Dr. Laszlo Somlyody, Director General

**Telephone:** +36 1 1338 160

**Telefax:** +36 1 1341 514

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Hungary

**Activities:**

Education

Research

**Sectors:**

Fresh water, Sediment

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**Keywords:**

13188 WATER RESOURCES CONSERVATION

13378 WATER POLLUTION

22300 POLLUTION ABATEMENT

24135 FLOODS

25265 QUALITY CONTROL

28147 HYDROLOGY

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**Activities Related to Measurements and Monitoring:**

Hydraulic: seepage hydraulic, hydraulic machinery, hydrobiological, tritium.

Soil mechanic laboratories equipped with standard instrumentation.

The water chemical laboratory can trace nutrients and heavy metals as well.

**Scope of the Measurements/Activities:**

Expansion of knowledge in the fields of science related to water management (hydrology, hydrobiology, water pollution control etc.) through basic and applied research and adaptation of the scientific achievements for practical application in flood control, river training, groundwater utilization, water pollution problems of surface and subsurface waters, agricultural water management etc. Expertise, service activities, quality control, standardization. Organizing the international hydrological postgraduate course supported by UNESCO and WMO.

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**Bhabha Atomic Research Centre  
Analytical Chemistry Division**

**Trombay  
Bombay 400 085  
India**

**Contact:** Dr. S. Gangadharan, Head

**Telephone:** +91 22 551 0489

**E-Mail:** gangs@magnum.barct1.ernet.in

**Telefax:** +91 22 556 0750

**Telex:** 1171017 BARC IN

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**Type of Organization:**

Governmental  
National

**Geographical Scope:**

National  
India

**Activities:**

Education  
Research

**Sectors:**

Fresh water, Biosphere, Soil

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**Keywords:**

22170 RADIOACTIVE SUBSTANCES

25366 SAMPLING TECHNIQUES

27140 ENVIRONMENTAL TRAINING

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**Activities Related to Measurements and Monitoring:**

The Analytical Chemistry Division organize training courses, specialized training for research scholars working in environmental areas and provide referral analysis in some selected cases.

**Scope of the Measurements/Activities:**

The objectives are to provide training and validation support.

**Reference materials:**

user

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**Instrumentation:**

Nuclear, spectrochemical and electrochemical methods.

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**Central Scientific Instruments Organisation (CSIO)**

**Sector 30**  
Chandigarh 160020  
India

**Contact:** Dr. M.S.N. Srinivas

**Telephone:** +91 172 42811

**Telefax:** +91 172 40527

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
India

**Activities:**

Monitoring - - -  
Research

**Sectors:**

Outdoor air, Fresh water, noise pollution

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**Keywords:**

10110 AIR QUALITY  
10130 ATMOSPHERIC PARTICULATES  
10150 GREENHOUSE GASES  
21170 SULPHATES AND SULPHURIC ACID  
22152 NITROGEN OXIDES  
25210 ATMOSPHERIC MONITORING  
25348 MONITORING EQUIPMENT  
30315 INDIA

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**Activities Related to Measurements and Monitoring:**

Monitoring air pollutants, writing technical reports, training, conducting conferences.

The technical know-how developed at CSIO is given to industry for commercialization

Design and development of scientific instruments in medicine, optics, space, micro-electronics and environmental monitoring.

**Scope of the Measurements/Activities:**

Air quality monitoring (e.g. stack and automobile exhaust monitoring) including the measurement of suspended particulate matter, sulphur dioxide, oxides of nitrogen, ozone, carbon monoxide, environmental noise and meteorological parameters.

Study of the behaviour of environmental monitoring instruments during prolonged daily use and the behaviour of pollutants in the atmosphere.

Study of the source - receptor relationship of various pollutants.

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**Instrumentation:**

CSIO is routinely carrying out monitoring of various pollutants in air as follows:

- SPM, by HVS
  - Inhaleable particulate matter, by piezoelectric microbalance
  - Particle size distribution, by Anderson Counter
  - Carbon monoxide
  - SO<sub>2</sub>, by UV fluorescence technique and conductivity meter
  - NO, NO<sub>2</sub>, NO<sub>x</sub>, by chemiluminescence technique
  - Ozone, by UV absorption technique
-



**Centre for Environmental Studies  
School of Planning and Architecture (CES-SPA)**

Block 4B, Indraprashta Estate  
New Delhi 110002  
India

Contact: Professor A.K. Maitra, Head of the Centre

Telephone: +91 11 331 8353

Telefax: +91 11 331 9435

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**Type of Organization:**

Academic Organization

**Geographical Scope:**

Regional

**Activities:**

Education

**Sectors:**

Environment and development

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**Keywords:**

15244 ENVIRONMENTAL POLICY

25000 MONITORING AND ENVIRONMENTAL DATA

27130 ENVIRONMENTAL EDUCATION

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**Activities Related to Measurements and Monitoring:**

Teaching students at post graduate course of Master of Planning (Environmental Planning).

Teaching students at undergraduate level in Environmental Design and Environmental Sciences.

Conducting a centre for environmental information on human settlements.

**Scope of the Measurements/Activities:**

Ensuring sustainable future development by taking all natural parameters into consideration, testing them against social, economic and political forces and evolving alternate scenarios of development.

**Instrumentation:**

General use of the laboratory of the Central Pollution Control Board.

**Databases:**

Central pollution control board and state pollution control boards

National Environmental Engineering Research Institute

National Physical Laboratory

Some data from individual industries and some actual measurements

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**Personnel: 6**

**Budget: 30 000 US\$**

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**International Crops Research Institute for the Semi-Arid Tropics  
(ICRISAT)**

Patancheru P.O.  
Andhra Pradesh 502324  
India

Contact: Dr. S.M. Virmani, Principal scientist in agroclimatology

Telephone: +91 842 224016

E-Mail: 31057:CGN3025

Telefax: +91 842 241239

Telex: 422203 icri in

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Semi-Arid Tropics

**Activities:**

Education  
Research

**Sectors:**

Atmosphere, Outdoor air, Hydrosphere, Fresh water, Lithosphere, Sediment,  
Soil, Rock, Biosphere, Flora, Cross media, Food, Ecosystem, Environment and  
development  
Other: Sustainable agricultural development

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**Keywords:**

10418 CLIMATIC CHANGE  
12104 AGRICULTURAL LAND  
12152 SOIL CAPABILITIES  
12291 SEMI-ARID LAND ECOSYSTEMS  
17106 AGRICULTURAL MANAGEMENT  
17145 CROP PROTECTION  
17181 PLANT DISEASES  
28102 AGRICULTURAL ECOLOGY

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**Activities Related to Measurements and Monitoring:**

ICRISAT works on genotypes of its mandate crops and their environment. The objective is to develop sustainable agricultural technology for the semi-arid tropics. ICRISAT research in different areas is related to:  
Socio-economic monitoring through village level surveys and detailed studies at four selected locations.  
Agroclimatic and crop production studies at selected bench-mark sites and experimental stations.  
Working in collaboration with NARS on crop production technologies across different ecological zones within SAT.  
Holding regional and international workshops

**Scope of the Measurements/Activities:**

Early warning system on soil erosion potential in different land use systems and related environmental pollution.  
Observation of climatic and agroclimatic changes.  
Preparation and construction of crop models.

**QA/QC Activities:**

Three areas exist of QA for data produced by ICRISAT:  
Agroclimatic data: Checks with national soil and climate research system.  
Soil analysis and bioclimatic data: Checks carried out with satellite systems.  
Disease and pest data: Standardization of procedures and checks with recognized laboratories worldwide.

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**Instrumentation:**

Automatic weather stations  
Automatic sediment collectors in watershed areas  
Seasonal air pollution study equipment  
Rain water collection and analysis

**Databases:**

Climatic Databases:  
-15 Minute interval  
-Daily interval  
-Crop performance  
-Soil and water losses under different land use systems

**Programme Participation:**

All research is on an international/regional basis. ICRISAT is a member of CGIAR, which is an international association "dedicated to supporting a system of agricultural research centres and programmes around the world...to improve the quantity and quality of food produce in developing countries".

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**Personnel:** 100 Scientists

**Budget:** 30 MIL US\$

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**International Society for Tropical Ecology (ISTE)**

c/o Department of Botany, Banaras Hindu University  
Varanasi UP 221005  
India

**Contact:** Prof. R.S. Ambasht, Secretary

**Telephone:** +91 542 312989

**Telefax:** +91 542 312059      **Telex:** 545 304 BHU IN

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**Type of Organization:**

Non-Governmental Organization  
International

**Geographical Scope:**

Regional  
Tropics

**Activities:**

Research

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Marine water, Fresh water, Lithosphere, Soil, Biosphere, Flora, Fauna, Human, Cross media, Ecosystem, Environment and development  
Other: Research papers and result publication

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**Keywords:**

12300 TROPICAL FOREST AND WOODLAND ECOSYSTEMS  
12384 TROPICAL ECOSYSTEMS  
12391 TROPICAL FORESTS  
25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

ISTE holds periodical international symposia in different parts of the tropics. Special sessions are organized on important issues and aspects related to the environment and ecosystems.

ISTE also publish the referred journal "Tropical Ecology", with two issues per volume per year. A large number of papers from all over the tropical world on research findings, reviews and techniques etc. have been published.

**QA/QC Activities:**

Member scientists assure the data quality.

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**Databases:**

Individual members may be involved in database use.

**Publications:**

The referred journal "Tropical Ecology".

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**Personnel:** 3 full time. 4 honorary.

**Budget:** 5000 US\$

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**Kerala State Pollution Control Board**

Piampoodu Junction Pattom Palace P.O.  
Thiruvananthapuram Kerala 695004  
India

Contact: Mr. J. Venugopalan Nair, Chairman

Telephone: +0471 438150

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
India

**Activities:**

Policy development  
Coordination  
Research  
Monitoring  
Assessment  
Management and Enforcement

**Sectors:**

Outdoor air, Indoor air, Marine water, Fresh water, Sediment, Soil, Biosphere  
Other: Hazardous wastes

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**Keywords:**

13378 WATER POLLUTION  
13480 WATER TREATMENT  
15264 POLICY PLANNING  
21390 TOXICITY  
22138 LIQUID WASTES  
22176 SEWAGE  
22364 POLLUTION CONTROL TECHNOLOGY  
22408 CHEMICAL TREATMENT OF WASTE  
23156 POLLUTANT EFFECTS  
23164 POLLUTION RISK  
25000 MONITORING AND ENVIRONMENTAL DATA  
25124 IDENTIFICATION OF POLLUTANTS  
25140 POLLUTANT ANALYSIS  
25156 POLLUTANT LEVELS

25172 POLLUTANT SOURCE IDENTIFICATION  
25220 ENVIRONMENTAL MONITORING  
25324 CALIBRATION OF MEASURING EQUIPMENT  
26116 ENVIRONMENTAL LAW  
26128 ENVIRONMENTAL QUALITY STANDARDS  
26172 REGULATORY CONTROL  
29317 ENGLISH  
30020 DEVELOPING COUNTRIES  
30315 INDIA

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**Activities Related to Measurements and Monitoring:**

Water pollution control.  
Industry regulations containing conditions regarding quality, quantity, location of discharge and monitoring effluents.  
Promotion of reduction of pollutant travel from on-site sanitation by providing sand envelope.  
Control measures for agricultural run-off.  
Air pollution control.  
Sound pollution control.  
'No objection certificate' is issued for siting/expansion of industries.  
Water cess collection.  
Hazard management.  
Approval of laboratories.

**Scope of the Measurements/Activities:**

Pollution control monitoring  
Ambient water and air quality monitoring  
Identification of pollution sources  
Effluent and emission monitoring  
Performance evaluation of pollution control measures  
Scientific studies on environmental aspects  
Analytical quality check up, etc.

**Reference materials:**

Advisory Service; Consultancy Service

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**Instrumentation:**

Instruments for analysing various environmental parameters: spectrophotometers of various types, chromatographic equipment, ion specific electrodes, radiation counters, flame photometer, etc.  
Field officers are equipped with kits and instruments to monitor readily measurable quality parameters of water, air and sound level.

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**Madhya Pradesh Pollution Control Board**

Paryawaran Parisar E-5 Arera Colony  
Bhopal 462016  
India

Contact: Member Secretary

Telephone: +091 0755 563143

Telefax: +091 0755 563742

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

Subnational

India

**Activities:**

Research

Policy development

Coordination

Management and Enforcement

Monitoring

**Sectors:**

Outdoor air, Fresh water

Other: Industrial effluents and wastes

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**Keywords:**

18115 CLEAN TECHNOLOGIES

22128 INDUSTRIAL EFFLUENTS

22130 INDUSTRIAL EMISSIONS

22472 WASTE DISPOSAL

25220 ENVIRONMENTAL MONITORING

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**Activities Related to Measurements and Monitoring:**

Enforcing and regulating pollution control measures in the state as per Provisions of Water and Air Act.

Monitoring of air, water, emissions and effluents.

Enforcing Water Cess Act 1977

Enforcing some sections of E.P. Act

Encourage recycling of industrial wastes. Management of hazardous substances and waste

**Scope of the Measurements/Activities:**

Conducting research:

- for utilisation of thermal power station ash in agriculture.
- for development of methodologies for arresting pollution from lime kilns, rice mills and other major, medium and small scale industries.

**QA/QC Activities:**

Monitoring of air, water, waste water, noise and vehicular pollution.

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**Instrumentation:**

All equipment needed for air and water pollution measurements

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**Dr. A. Felix Public Health Laboratory**

69, Ben Zvi Street  
Tel-Aviv 61082  
Israel

Contact: Dr. R.C. Ghinsberg, Director

Telephone: +972 3 830261

Telefax: +972 3 826996

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Israeli

**Activities:**

Research  
Monitoring  
Assessment

**Sectors:**

Marine water, Fresh water, Food  
Other: Infectious diseases such as Tuberculosis, Syphilis and Toxoplasmosis  
and others

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**Keywords:**

25245 LONG-TERM TRENDS AND FORECASTING  
25300 MONITORING TECHNIQUES AND EQUIPMENT  
25342 MODELLING AND SIMULATION  
28158 MICROBIOLOGY

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**Activities Related to Measurements and Monitoring:**

Participation in international meetings and in multiple national projects.  
Participation in standardisation programmes.  
Participated in the MED-Pol monitoring programme.  
Microbiological pollution of sea water.  
Developed methods for counting E. coli and faecal streptococci  
in sea water.  
System for approving beaches for recreational activity based upon testing sea  
water.

Microbiological and chemical testing of fresh water and ground water  
Food quality.

**Scope of the Measurements/Activities:**

Monitoring of pollutants (water, food)  
Development of predictive models for pollution assessment  
Early warning to the authorities on pollutants that appear

**QA/QC Activities:**

Internal QA programme exists, but not an external programme.

**Reference materials:**

User

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**Instrumentation:**

Mostly microbiological equipment  
ICP equipment  
Water microbiological instruments including incubators, filtration apparatus  
and autoclaves.

**Databases:**

All the data used is computerized, using IBM PC computers, with specific  
software developed by the Ministry of Health.

**Programme Participation:**

Med-Pol; prevalence of potential pathogenic bacteria in sand and seawater on  
recreational beaches of the Mediterranean Sea in the Tel Aviv area.

**Publications:**

Publication in international meetings

**Meetings:**

Beijing, China 12-16 October, 1992.

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**Personnel: 52**

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**Israel Oceanographic and Limnological Research Ltd. (IOLR)**

Tel-Shikmona  
Haifa 31080  
Israel

Contact: Dr. Yuval Cohen

Telephone: +972 4 515 202

Telefax: +972 4 511 911

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National  
Israel

**Activities:**

Monitoring  
Assessment

**Sectors:**

Marine water, Fresh water, Sediment, Biosphere

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**Keywords:**

12670 WATERSHED MANAGEMENT  
12740 FOOD CHAINS  
13132 LAKES  
13200 FRESHWATER ECOSYSTEMS  
14190 TIDES AND SEA LEVELS  
14360 FISH  
17130 AQUACULTURE  
17154 FISHERIES MANAGEMENT  
17340 NITRATES, NITRITES AND NITROSAMINES  
17380 PHOSPHATES  
21336 EUTROPHICATION  
25220 ENVIRONMENTAL MONITORING  
25235 FRESHWATER MONITORING  
26140 HEALTH LEGISLATION  
27110 DATA PROCESSING  
28163 OCEANOGRAPHY  
29317 ENGLISH  
29329 HEBREW

30319 ISRAEL  
30403 MEDITERRANEAN AREA  
30600 OCEANS AND SEAS

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**Scope of the Measurements/Activities:**

Pollutant control monitoring, early warning and vigilance systems,  
observation of climate change, identification of pollution sources, verification  
of models.

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**Instrumentation:**

Autoanalyzers (nutrients in water)  
Atomic absorption spectrometry (metals)  
GC, HPLC (biological materials)

**Databases:**

Heavy metals in marine fish.  
Benthic fauna and sediments.  
Lake Kinneret monitoring data.

**Publications:**

IOLR Biennial Report.  
IOLR Collected Reprints.

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Personnel: 190

Budget: 8 MIL US\$

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**Centre for Interdisciplinary Environmental Studies (CISA-CIES)**

Via Masaccio 67  
Florence 50132  
Italy

**Contact:** Dr. Andrea Bertelli, Technical Director

**Telephone:** +39 55 2345754

**Telefax:** +39 55 244 300

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**Type of Organization:**

Industrial or Commercial  
International

**Geographical Scope:**

Global

**Activities:**

Policy development  
Research  
Monitoring  
Assessment  
Data/Information management

**Sectors:**

Atmosphere, Fresh water, Lithosphere, Biosphere, Cross media  
Other: Agro-Ecosystems

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**Keywords:**

12136 LAND USE CLASSIFICATION  
15000 ENVIRONMENT AND DEVELOPMENT  
15236 ENVIRONMENTAL IMPACT ASSESSMENT  
22122 HAZARDOUS WASTES  
22186 TOXIC WASTE  
25220 ENVIRONMENTAL MONITORING  
28137 GEOLOGY  
28174 TOXICOLOGY

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**Activities Related to Measurements and Monitoring:**

CISA provides highly specialized informational and technical support to institutions that require advanced studies on specific issues as well as the definition of long and short range plans and programmes concerning:

- Land management and development
- Environmental protection
- Optimisation of natural resources utilization
- Recovery of environmental quality
- Formulation of regional and national strategies for industrial and agricultural development.

**Scope of the Measurements/Activities:**

Formulation of regional and national strategies for industrial and agricultural development with minimal environmental consequences.

Application of advanced technologies for pollution assessment, prevention and abatement.

Ecosystem computer modelling.

Environmental impact assessment.

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**Instrumentation:**

Algae test kits, AO salinity refractometer, Direct reading titrators, OCTET comparators, TDS meter, DO meter, REDOX potential value tester, Corning 120 portable pH meter, Classmate Kemmerer water sampler, Classmate KB core sampler, La Motte air pollution test kits and acid rain survey kits.

**Databases:**

Database of agrochemical effects (Date).

**Publications:**

"Per un Ambiente a Misura D'uomo". A brochure on the work and objectives of CISA.

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**Personnel: 10**

**Budget: 2 MIL US\$**

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**ENEL-DCO-Piacenza Laboratory (ENEL-DCO/LP)**

Via Bixio 39  
Piacenza I-29100  
Italy

Contact: Mr. Edmondo Ioannilli, Manager of environmental section

Telephone: +39 523 5252 22

Telefax: +39 523 5253 87

Telex: 530541

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**Type of Organization:**

Industrial or Commercial  
National

**Geographical Scope:**

National  
Italy

**Activities:**

Research  
Monitoring  
Assessment

**Sectors:**

Atmosphere, Outdoor air, Indoor air, Hydrosphere, Marine water, Fresh water, Lithosphere, Sediment, Soil, Biosphere, Flora, Fauna, Cross media, Ecosystem

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**Keywords:**

10300 AIR POLLUTION  
15232 ENVIRONMENTAL IMPACT  
25124 IDENTIFICATION OF POLLUTANTS  
25220 ENVIRONMENTAL MONITORING  
25348 MONITORING EQUIPMENT

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**Activities Related to Measurements and Monitoring:**

Environmental impact assessment of power plant construction and operation  
Field surveys of atmospheric micropollutants  
Source characterization  
Hydroelectric system management through water quality monitoring

**Scope of the Measurements/Activities:**

- Pollutant control monitoring
- Identification of pollution sources
- Verification of models
- Application of mathematical models

**QA/QC Activities:**

- Quality control procedures
- Participation in interlaboratory comparison exercise

**Reference materials:**

- User

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**Instrumentation:**

- Automatic monitoring systems, multiparametric, for air, water and noise; mobile vans

**Databases:**

- Atmospheric Depositions chemistry in Italy
- Atmospheric Pollution around power plants.
- Fresh water biology chemical characteristics.

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**Personnel: 50**

**Budget: 2 MIL US\$**

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**Institute for Atmospheric Research  
National Council for Research (CNR)**

Area della Ricerca di Roma Via Salaria km 29.300  
Monterotondo Stazione (Roma) I-00016  
Italy

Contact: Dr. Ivo Allegrini, Director

Telephone: +39 6 900 53 49

Telefax: +39 6 900 58 49

Telex: 624809 CNR MLI

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**Type of Organization:**

Governmental Organization

**Geographical Scope:**

National

Italy

**Activities:**

Coordination

Research

**Sectors:**

Outdoor air, Indoor air

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**Keywords:**

10110 AIR QUALITY

20255 AIR POLLUTANTS

22364 POLLUTION CONTROL TECHNOLOGY

25265 QUALITY CONTROL

25306 ANALYTICAL EQUIPMENT

25324 CALIBRATION OF MEASURING EQUIPMENT

25342 MODELLING AND SIMULATION

25348 MONITORING EQUIPMENT

25366 SAMPLING TECHNIQUES

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**Activities Related to Measurements and Monitoring:**

Quality assurance and quality control in monitoring devices and networks:

- Preparation of gas standards
- Laboratory standardization
- Field intercomparison

Development of sampling techniques for atmospheric pollutants in:

- open atmospheres
- remote sites
- emissions
- working sites
- indoors

Development of analytical methods, techniques and instruments for air pollutant measurements

**Scope of the Measurements/Activities:**

Pollution control (remote, urban and indoor)

Model validation

Instrument development

**Reference materials:**

Producer; User; Certifier

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**Instrumentation:**

Gas analysers

Samplers

Beta gauges

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