

European Topic Centre on Inland Waters

ANNUAL SUMMARY REPORT 1996

By

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ETC Leader

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Note

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1. BACKGROUND

The European Environment Agency (EEA), based in Copenhagen, was established in 1990 by a Council Regulation of the European Union. The Regulation laid down a number of tasks for the Agency and prime among these is the establishment and co-ordination of a network for collecting, processing and analysis of national environmental data relevant at the European level. The network is EIONET (European Environmental Information and Observation Network) and the Agency has the responsibility to co-ordinate and develop it. The main purpose of the Agency is to produce objective, reliable and comparable information for those concerned with framing, implementing and further developing European environmental policy, and for the wider European public.

The Agency is an independent, legal entity working at the hub of a decentralised, distributed network designed to make maximum use of resources already existing throughout Europe. Key organisations within this network are the European Topic Centres. These are organisations or institutions appointed directly by the Agency to act as centres of expertise and to execute particular tasks identified in its Multiannual Work Programme.

The Water Research Centre (WRC) has been appointed the lead organisation of the European Topic Centre on Inland Waters (ETC/IW) under contract to the EEA. The ETC/IW consists of a consortium of several European organisations which each has a representative on the ETC's Management Committee. This agrees the allocation of tasks and budget and partners are accountable to the ETC Project Leader for the satisfactory prosecution of the Work Programme.

The Management Committee is chaired by Dr Tim Lack of WRC which also provides the services of a Technical Co-ordinator (Steve Nixon). The organisations represented on the Management Committee and their named representatives are:

- Austrian Working Group on Water (AWW - Austria) Wilhelm Vogel;
- Centro de Estudios y Experimentación de Obras Públicas (CEDEX - Spain) Teodoro Estrela;
- Flemish Environment Agency (VMM - Belgium, Flanders) Martin Verdievel;
- Instituto da Agua (INAG - Portugal) Manuel Lacerda;
- International Office for Water (IOW - France) Dominique Breux;
- National Environmental Research Institute (NERI - Denmark) Torben Moth Iversen;
- Norwegian Institute for Water Research (NIVA - Norway) Merete Johannessen.

There are two supporting organisations which also contribute to the Topic Centre's work programme:

- Danish and Greenland Geological Survey (GEUS - Denmark) Peter Gravesen;
- Institute of Hydrology (IH - UK) Alan Gustard.

ETC/IW Co-ordinating Group

An international core team of specialists co-ordinating the Topic Centre's work programme and acting as the interface between the Agency and the Topic Centre is based at WRc Medmenham including Dr Tim Lack and Steve Nixon and delegates from IOW: Lucile Laffon, and CEDEX: Concha Lallana. Mrs Laffon currently has the position of Deputy Project Leader which is alternated between CEDEX and IOW.

Further Information

For further information on the ETC/IW in particular and on the EEA and other Topic Centres you are invited to visit the appropriate home pages on the world wide web:

EEA Home page : <http://www.eea.eu.int/>

ETC/IW Home page : <http://www.wrcplc.co.uk/rnetwork/etc/index.htm>

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2. WORK PROGRAMME - PROJECTS AND OBJECTIVES

This section describes the objectives of the technical work programme of the ETC/IW for the 1995 and 1996 Subventions (i.e. work carried out during the calendar year 1996). The 1996 Subvention work programme runs into 1997 and this will be reported in the Annual Summary Report for that year. The production of the work programme is the responsibility of WRc as the lead organisation for the Topic Centre. This is carried out in discussions between the ETC/IW Technical Committee and the EEA Project Manager, agreed by the ETC/IW Technical Committee and ratified by the ETC/IW Management Committee and the EEA.

The following Tasks were agreed with the EEA for the 1995 Subvention.

Task Reference Number	1995 Subvention Programme Task Title	Indicative budget (kecu)
95/A	Workshop for MW3 (leadWRc) Objective: To organise and hold, on behalf of the Agency and the EIONET, a workshop to review progress by the ETC/IW and to discuss and approve the future work programme and, in particular, the progressive implementation of the proposed monitoring network for the EEA area developed under Project MW3.	50
95/B	Completion of MW1, MW2 and MW3 reports (leadWRc) Objective: To complete the reports produced under the 1994 Subvention with regard to the numbers of countries covered, and correction of errors/amendments recommended by the NFPs so that the reports are as complete and correct a record as possible.	50
95/C	Develop reservoirs database (lead IOW) and report on key issues in arid and semi-arid countries (lead CEDEX)(EEA Project number MW4/MW5). Objective: Under Projects MW4 and MW5 to produce a report and database on large reservoirs based on the existing ICOLD data and to produce a report on the key issues facing countries in arid and semi-arid zones of Europe.	100
95/D	Pilot implementation of European Freshwater Monitoring Network (lead WRc) Objective: To carry out, in a small number of countries, an initial assessment of the feasibility of the proposed monitoring network developed under Project MW3.	25
95/E	Human interventions in the hydrological cycle (lead AWW) Objective: To determine, on a pan-European scale, the significance and key issues arising from the various human alterations to the natural cycling of water in river catchments.	25
95/F	Ad-hoc technical support to the EEA (leadWRc) Objectives: To provide a resource capable of responding rapidly to requests for technical advice; commenting on drafts and reports; attending meetings at, or on behalf of, the EEA; writing and presenting technical papers when requested and providing any other form of support requested by the EEA.	50
95/G	Support to DG XI on Reporting Directive (leadWRc) Objectives: To ensure common standards and interchange protocols between the Commission and the EEA with regard to reporting and specifically to the Reporting Directive. To provide the Commission and Member States with access to relevant and comparable data reported	100

	under the terms of the Reporting Directive.	
95/H	Data and information collection and dissemination using EIONET (lead WRc) Objective: To review, establish, document and evaluate data quality and transmission standards required for the successful functioning and management of ETCs using the EIONET.	50
95/I	Review of efficiency of water use in Europe (lead CEDEX) Objective: To review water use in various sectors across Europe with a view to making recommendations for investigating and improving the efficiency of water use.	75
Total		525

The following Tasks were agreed with the EEA for the 1996 Subvention:

Task Reference Number	1996 Subvention Programme Project/Task Title	Indicative budget (kecu)
96/1	ETC Management and Co-ordination (lead WRc) Objective: To manage and co-ordinate the ETC Consortium for efficient and effective delivery of its Workplan.	85
96/2	Maintain and develop the Inland Waters aspects of EIONET (lead WRc) Objective: To maintain and develop expertise and supply of information to and from the National Focal Points and National Reference Centres for the ETC/IW and hence develop the Inland Waters aspects of EIONET.	15
96/3	Ad-hoc technical support to the Agency (lead WRc) Objective: To provide ad-hoc (technical) support to the Agency as agreed in advance between the EEA Project Manager and ETC Project Leader.	50
96/4	Preparation for EEA periodical reporting (lead NERI) Objectives: To start preparations to support the EEA in compiling the two major reports (EU State of the Environment Report and Dobris+3 report) to be published by the EEA in 1998.	50

96/5	Inland Waters Monitoring Network Implementation (lead WRc) Objective: To implement progressively the inland waters monitoring network across the EEA area.	150
96/6	Groundwater quality and quantity (lead AWW) Objectives: To provide support to the further development of the EC groundwater Action Programme. To provide information in support of the EU SOER and Dobris+3 reports. To provide support to the EEA/WHO on water quality and health issues.	100
96/7	Impact of excessive nutrients on the environment (lead IOW) Objectives: To prepare a monograph on the geographical distribution and severity of adverse biological effects in rivers, lakes, reservoirs, estuarine, coastal and marine waters, and other wetland and terrestrial habitats caused by excessive anthropogenic inputs of nutrients	100
Total		550

3. PROGRESS DURING THE YEAR

3.1. Workshop in Madrid (CEDEX)

A technical workshop was organised on behalf of the European Environment Agency to review the work of the European Topic Centre on Inland Waters, in particular, the design of a freshwater monitoring network for the EEA area which was carried out under Project MW3 in the 1994 Subvention. The workshop was hosted by the Centro de Estudios y Experimentación de Obras Públicas (CEDEX) in Madrid Spain in 4 June 1996. Around 60 people participated; drawn mostly from the EIONET group and specialists in the field of monitoring.

The freshwater monitoring network was designed in order to support the Agency in achieving its main task of providing the European Union and the EEA Member Countries with:

'objective, reliable and comparable information at a European level enabling them to take the requisite measures to protect the environment, to assess the results of such measures and to ensure that the public is properly informed about the State of the environment'

The main conclusions and recommendations of the workshop were as follows.

1. Information reported by Member States to the European Commission and other international organisations on the status of, and pressures on, water resources in Europe is insufficient to meet the needs of the EEA. In other words, there are large gaps and deficiencies in existing available information.
2. In many Member countries there is large amount of additional information, for example based on regional data, which may be of use to the EEA.
3. The European Topic Centre on Inland Waters has designed a monitoring network for the EEA area (largely based on existing networks) which, when implemented, will provide the EEA with the required comparable information in a timely fashion.
4. The approach of stratifying monitoring stations (from which information will be obtained) so that valid comparisons are made between different water types and Member countries was supported by a large majority of participants.
5. Most Member countries (Germany expressed reservations) endorsed the implementation of the proposed freshwater monitoring network across the EEA area in a step-by-step process.
6. Up to 10 Member countries are (or have volunteered to) piloting and testing the proposed network in their countries over the next year. Those presently piloting the network are Austria, Denmark, Spain and United Kingdom. Those who have volunteered to participate in the next phase are Belgium, Finland, France, Ireland, Norway and Sweden.

7. It was recognised that, as part of the step-by-step implementation of the network, issues regarding determinand comparability, quality control and information exchange procedures would have to be addressed and resolved. Further clarification on the specification of the precise needs of the ETC/IW and the EEA was also requested by several Member countries.
8. The ETC/IW was asked to issue progress reports and organise another workshop to discuss progress on implementation in the autumn/winter of 1997.

A full report of the Madrid workshop was produced and is available on request from the ETC/IW - Ref:PO14/96/2.

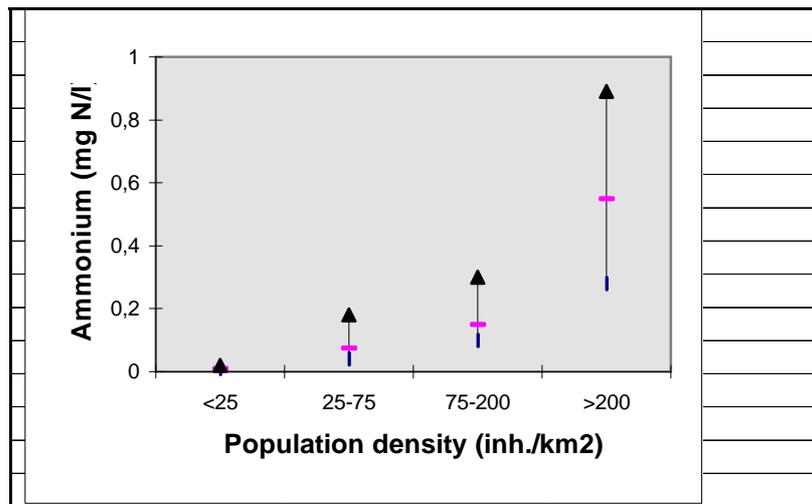
3.2. Completion of Reports from Projects MW1, MW2 and MW3

Provision was made in the 1995 Subvention to take account of late submission of questionnaires to the ETC/IW so that the most comprehensive and up-to-date information could be provided back to Member countries. The following reports were updated and completed during 1996:

1. Updated inventories on groundwater quality and quantity monitoring networks. This report, produced by AWW, gives tabulated information (metadata) on the monitoring networks in each country of the EEA area (EU15+3) with regard to locations of wells/boreholes, types of measurement made, frequency and duration of measurements. It is planned for the EEA to publish this report in the EEA Topic Report series in 1997.
2. Updated inventories on surface water quantity monitoring networks. This report, produced by IH, gives information on more than 15,000 gauging stations in 15 of the 18 countries in the EEA area which is held in a relational database. Maps showing the extent of the monitoring networks have been produced. A total of 14 recommendations have been made to assist in the harmonisation of hydrometric practices in Europe e.g. all monitoring should be carried out in compliance with internationally recognised standards; methods used for calibrating the relationship between water level and discharge should be consistent and carried out over the full range of flows; and the EEA should promote greater technical co-operation between hydrometric agencies in Europe. This work has been published by the EEA as No. 3/1996 in the Topic Report series as **Surface Water Quantity Monitoring**.
3. Report on international monitoring databases. This report by WRc is an inventory of the contents of monitoring databases associated with international monitoring programmes. The main output is a searchable electronic database that allows rapid identification of geographical areas, determinands measured and temporal coverage of the data. It is planned to publish this report in the Topic Report series in 1997.
4. Revision to MW1 Report (**Requirements for Water Monitoring**). This report by WRc is a critical review of the monitoring requirements of existing and proposed EU legislation and international agreements. Barriers to the harmonisation of monitoring

can arise at the sampling, analysis and data reporting stages for a number of reasons. This report has been published by the EEA as No. 1/1996 in the Topic Report series.

5. The report on **Water Quality of Large Rivers**, produced by NERI in 1996, from data arising from the Exchange of Information Decision supplemented with information about human activities and pressures has been published by the EEA as No. 4/1996 in the Topic Report series. The comparability of data is enhanced by selecting rivers on the basis of their size (i.e. catchment area) allowing cause-effect relationships to be investigated e.g. the relationship between population density in the catchment and the ammonium concentration in the river water:



This figure clearly demonstrates the value of taking a more systematic approach to achieving comparability as is being attempted in the water information network (tasks 95/D and 96/5).

The report on **Surface Water Quality Monitoring**, produced by NERI in 1995 under joint funding from the EEA and the European Commission (DG XI) has been published by the EEA as No.2/1996 in the Topic Report series.

3.3. Development of Reservoirs Database and Report on Key Issues in Arid and Semi-arid Countries

The reservoirs database has been updated by IOW with the support of IFEN and the intention is to include the largest European lakes. Documentation of ELDRED (European Lakes, Dams and Reservoirs Database) has been prepared and the database has been distributed on diskette to the EEA and Topic Centre partners for testing.

The report on Key Water Resource Issues in Arid and Semi-arid Countries was produced as a Final Version by CEDEX (Ref PO7/95/2) for possible production in the EEA Topic Report series. The existing regional imbalance of water resources across the continent makes water shortage a great problem in many countries but particularly those with an

arid climate. This report lays the foundation for developing greater integration between the management of surface and groundwater sources which will be a requirement of future EU legislation. Far greater emphasis is going to be placed on demand-side management (including water conservation and re-use) than has been the case in the past. The determination of suitable flows to maintain the ecology of rivers and streams in arid regions is also going to be important feature of new legislation.

3.4. Implementation of the European Freshwater Monitoring Network

The proposed network for the EEA to obtain the information it requires to achieve its objectives is designed to give a **representative** view or assessment of water types within a Member country and also across the EEA area. It will ensure that similar types of water body are compared. The need to compare like-with-like has led to a **stratified design** with the identified and defined strata containing similar water bodies. The use of the same criteria for selecting strata and water types across Member countries will ensure that valid status comparisons will be made.

The EEA network will:

1. Be **representative** of the size/numbers/types of water bodies in the EEA area (e.g. small rivers), variation in human pressures (e.g. population density and land use), and, will include a number of reference and flux stations.
2. For **rivers**, have **reference**, **representative**, **impact** (part of representative network) stations, and **flux** monitoring stations at discharge into sea, or at international boundaries.
3. For **lakes**, have a general surveillance network comprising **reference** and **representative** lakes, and if necessary, (in the light of experience) an **impact** network with lakes selected on the basis of population density. In addition the largest and most important lakes (nationally) will be included and possibly a specific cause/effect network of lakes.
4. For **groundwater**, have a general surveillance network comprising **representative** stations on **all nationally important aquifers** (groundwater in porous media, karst groundwater and others) ideally at a density of **1 station per 20 to 25 km²** of aquifer. In addition the feasibility of establishing **reference** stations in aquifers not affected by human activities will be assessed.

At present there is not enough comparable information to obtain a quantitative assessment of water resources across Europe. This can lead to unfair or incomplete comparisons being made and wrong conclusions drawn. By submitting information within this proposed framework a 'level playing field' will be obtained so that Member countries will have confidence in the conclusions being drawn. In addition the information will enable European environmental policies to targeted correctly and cost-effectively.

To minimise cost implications, where possible **the monitoring network will be based on existing national and international networks**, use existing sources of monitoring information and create an EEA database of aggregated data and information rather than of raw non-processed data.

The proposed network has been piloted and tested in four volunteer countries to date (Austria, Denmark, Spain and the United Kingdom). Results and experience from the piloting will be used to modify, where necessary, the design and the network will be progressively implemented step-by-step across the EEA area. This Project is being continued under the 1996 Subvention as Task 96/5.

3.5. Human Interventions in the Hydrological Cycle

Human interventions can have profound effects on water resources, water quality and aquatic and riparian ecology. There is a need to quantify both their extent and importance, and to quantify the nature and significance of the effects they have. The inter-relationship between intervention and effect must be understood before proper planning and control can be undertaken and so that the benefits of the intervention can be properly balanced and assessed against any environmental effect.

Major human interventions with significant ecological impact have been identified in all participating countries. The most significant human interventions in the hydrological cycle have been made over the last decades. Today the negative effects of these interventions are recognised and analysed, and restoration activities are initiated. The perception of the importance of an intervention changes over time, as the understanding of the aquatic environment evolves.

The report made the following recommendations:

1. There is a need to increase the comparability of data with regard to human interventions and to extend data collection to all EEA countries.
2. The regionalisation of the continent should, if required for the comparison of human interventions, be based on hydrological characteristics and/or on human pressures and demand.
3. The investigation on significant human interventions in the hydrological cycle should be extended to all EEA countries to give a representative overview of the situation across Europe. The reasons for an intervention should, in particular, be outlined in a detailed way, which may help in defining the most appropriate comparative regions. The importance of interventions nationally, regionally and across Europe should then be able to be assessed.
4. Single interventions should also be investigated separately with more detailed assessments on the impacts on water quality.
5. At this stage of the Task, the different human activities have not been fully quantified at a national or European level. For example, there appears to be no real

information on the extent/intensity of different activities affecting the hydrological cycle. Information such as on the number of dams in a Member country and the catchment area affected, or the approximate length/% of riverchannelised or under flow regulation might be feasible to obtain in the near future. Indeed work undertaken by the ETC/IW on developing a reservoirs database has begun to quantify the number of dams, reservoirs and lakes across the EEA area. The next phase of this study must address these issues and should suggest a list of data/information which each Member country could supply in the medium term (next two or three years).

6. It is recommended that the methodology and definitions used in this scoping study are further refined and developed in light of the experience obtained. Information gathering should then be extended to other EEA Member countries. It should be noted that the work on human interventions affecting groundwater quality and quantity will be addressed in the Groundwater Quality and Quantity Monograph to be produced by the ETC/IW in 1997.

3.6. Ad hoc Technical Support to the EEA

Activities under this heading are reported in Section 3.12.

3.7. Support to DG XI on the Reporting Directive (project CB 11):

The questionnaires outlined in Directive 92/446/EEC, amended by 95/337/EEC, (the Reporting Directive) consolidate the data required from the 14 Directives in the water sector. There are eight separate questionnaires. The objective of this task is to convert these questionnaires to an electronic format, with the aim of harmonising the reporting of information required under the terms of Directives and to make data collection and subsequent interpretation and analysis more efficient.

The Directives are:

- I Dangerous substances and daughter directives (six directives)
- II Freshwater fish
- III Titanium Dioxide
- IV Shellfish
- V Groundwater
- VIA Surface Water Abstraction
- VIB Sampling and Analysis of Surface Water
- VII Drinking Water
- VIII Bathing Water (this Directive already has an agreed electronic reporting format and is therefore not included in this project).

To date, electronic templates for four of the questionnaires namely I (for Mercury Daughter only), II, IV and VII have been produced. The four trial templates, together with a User-Note have been accepted by DGXI and the EEA and are scheduled to be distributed to Member States in early 1997. The templates have a common model, all

effort has been made to make data entry as simple as possible, supplying the user with the following where appropriate:

- menus of choices;
- default values; and
- “help-text” to indicate what type of data entry is required.

The electronic templates follow as closely as possible the paper version of the questionnaires, although some changes have had to be made to allow sensible entry of data.

On 4th November 1996 a meeting was held between DGXI and ETC/IW to schedule reporting of the returns from the questionnaires for the 1993-1995 reporting period. Subsequently, DG XI.D1 prepared a letter to the experts of Member States. A letter was also sent to the Permanent Representations to keep them informed. It was agreed that Member States would be given until mid - January 1997 to test the templates. They will be requested to use their actual 1993-95 data to make the exercise as real as possible. It was considered highly probable that Member States might wish to use the templates as their "official return" under the Directive.

Following the completion of the reporting of the 1993-95 data, work will begin in translating the remaining questionnaires to electronic templates, together with any necessary revisions of the four prototype templates. The scope of this project has also been broadened to include the development of a template that fulfils the requirements of the Exchange of Information Decision (77/795/EEC). Compared with the Directives in the water area, the data requirements of the Decision are much more highly structured and lend themselves particularly well to development of an electronic interface.

3.8. Data Collection and Dissemination Using the EIONET

Progress has been made in the complex task of reviewing, establishing, documenting and evaluating data quality and data transmission standards required for the successful functioning and management of allETCs using the EIONET. In this context the ETC/IW has been used as a “test” ETC. This task has close links with Programme Area 9, the work of the ETC/CDS and involves liaison with ITTAG and its technical sub-groups. In recognition of this, a meeting has been held at WRc with the ETC/CDS Project Leader and with the CDS Project Manager at the EEA, Dr Sigfús Bjarnason. Following that meeting, ETC/IW further defined the scope of the Task. Protocols and agreements for improved electronic communication between ETC/IW partners and EEA needed to be developed urgently as the Topic Centre had, itself, become highly dependent on electronic methods of data gathering, data transfers and reporting. The experience gained will have relevance to the development of the operation of the EIONET and further work in this area is being carried out under Task 96/2, supported from the 1996 Subvention budget. The work carried out by NERI on the transfer of the large rivers database from DG XI to the EEA and its subsequent aggregation with the large rivers database produced by the EEA Task Force was also part of this Task. This has

culminated in a common database and the production of a report on **Water Quality of Large Rivers** (No 4/1996 in the EEA Topic Report series. Work has also been aimed at improving the efficiency of data flows between the ETC/IW, EEA and ETC/CDS particularly in connection with the collection of data on the state and pressure indicators required for the Dobris+3 report and the monographs to be written by the ETC/IW.

3.9. Review of Efficiency of Water Use in Europe

Water resource availability, conservation and delivery to users are key issues in many EEA member countries, not only in the water scarcity areas of southern Europe, but also apparently in some relatively water-rich northern countries. Efficient use of water resources will help to maintain the balance between supply and demand, and sustain human population, activities and developments.

The aim of this task is to review water use in various sectors across Europe and with a view to making recommendations for investigating and improving the efficiency of use. This is the second draft report on the task.

Some information has been obtained through a review of published material and also by the distribution of a questionnaire to the Agency's National Focal Points. Unfortunately there were only detailed responses from 3 countries and no response at all from 7, which makes the review somewhat limited at the present time.

The report gives some general information on Europe's climate to illustrate the great variability in water availability across the EEA area. Readily available published information on water usage across Europe is then given. The three sectoral uses of water selected for the assessment of efficiency of use are irrigation, industrial and urban use. A number of indicators of efficiency are then suggested for the selected sectors and illustrations of their application to the limited data obtained from the questionnaire returns are given

This is a subject of great importance to the EEA and Member countries and it is being recommended by ETC/IW that it continues its efforts to gather data in this area. It is probable that the 1997 Subvention will be used to support this activity. The collaboration of Eurostat and other international organisations will be sought.

3.10. ETC/IW Management and Co-ordination

The purpose of this task is to manage and co-ordinate the ETC Consortium for efficient and effective delivery of its Workplan to the EEA by specifying unambiguously the tasks and responsibilities of the Topic Centres and their partners and Project Leaders, and corresponding responsibilities of the Agency and its Project Managers.

In accordance with this task, the ETC Project Leader has carried out the procedures described in the agreed Technical Work Programme with the full knowledge and approval of the EEA Project Manager ~~DN~~ Niels Thyssen.

3.11. Maintain and Develop the Inland Waters Aspects of EIONET

The efficient operation of the EIONET is crucial to supporting the EEA in the prosecution of its Multi-Annual Work Plan. The EIONET will therefore need to be maintained and developed as the needs of the EEA and EIONET itself change. In support of this, and in accordance with the detailed Technical Work programme, the ETC/IW has attended the NFP/EIONET meetings and, with the EEA Project Manager, has developed contacts and interdependencies with other relevant ETCs.

3.12. Ad hoc Technical Support to the Agency

This continues to be an important role for the Topic Centre and the continued use of the expert resources available to the EEA indicates its value. With the support and agreement of the Agency, the following tasks have been carried out:

- Tim Lack gave a lecture at the Institution of Civil Engineers on Sustainable Development;
- attended at the Scientific Advisory Committee of Monitoring Tailor Made 2 in Amsterdam;
- prepared papers publicising the work of the EEA-ETC/IW on behalf of the EEA for two journals;
- attended a meeting of the UN ECE Working group on Water in Geneva;
- attended a meeting on Environmental Telematics organised by DG XIII;
- represented the EEA-ETC/IW at a NATO advanced research workshop in Budapest (27-30 May) to discuss exchange of information among the Danube countries and others. Dr Lack chaired the drafting committee and conclusions and recommendations were produced.
- Torben Moth Iversen has represented the EEA and ETC/IW at a Conference on Community Water Policy (28-29 May) in Brussels and a joint report with the EEA has been produced.
- Tim Lack was invited to the EEA/PHARE countries meeting in Copenhagen (10-11 June) and gave a presentation on the work of the ETC/IW and possible future involvement of the PHARE.
- On 26 July a consultant for EUROSTAT (Chris Nelson) visited Dr Tim Lack to discuss ways of improving data exchanges between ETC/IW and EUROSTAT.
- On 6 September, Dr Ulrich Ramseier of the European Crop Protection Association visited the ETC/IW for discussions on data sources on pesticide sales in Europe.
- Dr Tim Lack represented the EEA at the Monitoring Tailor Made II workshop in the Netherlands (9 -12 September) where he chaired one of the sessions.
- Steve Nixon also attended this workshop where he presented a paper on the proposed freshwater monitoring network.
- On 13 September Dr Tim Lack, Dr Tom Zabel and Mr J Grath gave a presentation on the work of the EEA and the closer involvement of Germany in the water monitoring network to a joint meeting of representatives of UBA and LAWA in Berlin.

- The ETC/IW has made detailed comments (and provided photographs) on a draft Layperson's Guide to Wastewater Treatment,
- commented on a draft version of the Environmental Taxes Report,
- and produced a draft version of an illustrated brochure on the activities of the ETC/IW.
- On behalf the EEA, NERI participated in a GEMS/WATER meeting at VKI on 22 - 23 September.
- NERI has also responded to a letter of the EEA to the Environment Agency (England and Wales) about environmental boundaries.
- Members of the Topic Centre have participated in the EEA meeting on Forestry; attended the official opening of Ircel, the Belgian NFP office in Brussels; attended ETC/MC meetings in Rome and Lisbon; ITTAG meeting in Copenhagen; CDS meetings in Germany; German water organisations meeting in Karlsruhe; UK EIONET Policy Group meeting in London; Swedish EPA meeting on State Indicators; workshop on environmental monitoring and statistics in London; meeting with EEA consultants EOS to discuss support to EEA contract on data visualisation techniques; meeting with UK NFP and EEA Management Board member to discuss progress on MW3 implementation; met with representative of Netherlands Agricultural Research Institute to discuss state and pressure indicators and the CAP. We have also commented on numerous letters and drafts for the EEA.
- Collaborated with the consultant in producing the joint EEA/UNEP Message on the State of Europe's Water which was published in January 1997.
- Supported the EEA in Interservice consultations on the Nitrates Directive and the Water Resources Framework Directive.
- Assisted the EEA Executive Director by contributing to drafts of speeches and presentations.

3.13. Preparation for EEA Periodical Reporting

The ETC produced initial comments in October 1996 on the scope and contents of the Dobris+3 report and made a first assessment of the indicators to be used. Subsequently, the indicators to be used specifically in the Freshwater Resources chapter of the Dobris+3 report were developed in detail by NERI and again commented on by the other ETC/IW partners. A proposal was submitted to the EEA giving details of the support the ETC/IW could provide to the EEA on preparing the Freshwater Resources chapter. This has resulted in an additional subvention to the ETC/IW which is covered by a Technical Annex giving the aims, activities, reporting requirements, timing and budget associated with this task. The ETC/IW has also provided to the EEA a description of the data needs from external sources (such as OECD, Eurostat and other ETCs) in order to achieve the aims of the Dobris+3 report. Questionnaires for gathering the data have been prepared and are scheduled to be distributed to National Focal Points in early 1997.

3.14. Freshwater Monitoring Network - Further Implementation

This Task is a continuation of Task 95/D (see Section 3.4). Following the initial piloting, effort was put into involving other countries in order to broaden the geographic spread. The following countries indicated their willingness to participate: Belgium, Finland, France, Ireland, Norway and Sweden. The network will be required not only in the short term to obtain information for the EEA assessment reports due for publication in 1998 but also over the longer term for subsequent State of the Environment Reports, specific issue monographs and Integrated Environmental Assessments of problems and policies. As such, therefore, the freshwater monitoring network will be the heart of the EIONET for water.

Many countries have gaps in their current monitoring programmes which will need to be filled in a progressive step by step way and it is possible that these gaps could be filled by diverting resources from areas where excessive or unnecessary monitoring is occurring. It is envisaged that this optimisation of monitoring programmes will take some years to achieve. It is, however, essential to establish the network on a firm statistical basis so that the long term aim of obtaining comparable spatial and temporal information of water quality and quantity on a pan-European level can be achieved. To this end, visits were made in late 1996 to Belgium, Ireland and Finland to discuss the contribution of the national monitoring networks to the work plan of the ETC/IW. Progress has been made in France through the activities of the French partner in the ETC/IW. In the UK, discussions were held with the NFP and representatives of the environmental regulatory agencies for England, Wales, Scotland and Northern Ireland to ensure that a UK wide approach would be taken. The ETC/IW Project Leader visited Germany in September to pursue further with UBA/LAWA the possibility of including Germany at a later stage in the network implementation. The meeting involved representatives of the German Länder and resulted in a better understanding of the project aims and agreement to pass data directly through to the ETC/IW.

3.15. Monograph on Groundwater Quality and Quantity

The work will be based upon the implementation of EIONET and contacts in the Phare and Tacis countries and will provide overviews of important water quality and quantity issues and will have a role in providing the baseline against which temporal and spatial comparisons can be made in the future. This work also supports the further development of the Commission's proposal for a Groundwater Action and Water Resources Management Programme and provide information for the Agency's two major reports; to the EU Environment report and to the next Europe's Environment report (Dobris+3) - see section 3.13. The monograph is due to be published by the EEA at the end of 1997.

3.15.1. Groundwater Quality

The ETC/IW will provide overviews (largely in the form of maps and other graphical applications) showing the distribution of certain important indicators of (raw/untreated) groundwater quality such as: alkalinity, conductivity, pH, chloride, nitrate and pesticide concentration in the pan-Europe area based on measured values. For pesticides the

ETC/IW will consider which compound(s) to select for study and presentation taking account of the geographic variations in usage and practice.

3.15.2. Groundwater Quantity

For an evaluation of groundwater quantity the ETC/IW will identify problem areas with groundwater over-exploitation and related adverse effects. This study will, together with the studies on defining a strategy on human interventions in the hydrological cycle and key water resource issues in arid and semi-arid regions led to the definition of the contents of a study aimed at identification of the geographical distribution and severity of the most important human interventions in the hydrological cycle. Consequences for the continued unsustainable use and management of water resources will be considered (e.g. overexploited groundwater, and wetlands potentially endangered by groundwater over-exploitation).

3.15.3. Drinking Water and Health

Based on the two activities described above, and by studying published data on the quality of drinking water, the ETC/IW working with the Agency and the WHO, has prepared an annotated list of contents for a monograph on the quality and availability of drinking water across the whole of Europe, identifying problem areas and health aspects associated with poor drinking water quality. This monograph will be prepared during 1997.

3.16. Monograph on the Impact of Excessive Nutrients on the Environment

The monograph will provide the basis for the preparation of the chapter on eutrophication in the EEA's report on the EU 1998 state of the environment as well as contributing to the Water Resources section of the Dobris+3 report. It will include a study of the substances causing eutrophication and other substances associated with the impact of anthropogenic activities and will assess the expected positive impacts of protective measures e.g., those laid down in current directives such as the Urban Waste Water Treatment and the Nitrates directives. In this sense therefore, the monograph will provide the reference points against which the effectiveness of the protective measures will be judged. The ETC/IW, supported by the Topic Centres on Marine and Coastal, Air Emissions and Nature Conservation, will ensure that the monograph is produced as a key deliverable in 1997.

For this study the ETC/IW will also co-ordinate its efforts and co-operate with the JRC at Ispra who have worked extensively on lake eutrophication. Extending the study into marine and coastal waters will be done with the support of the ETC/MC. Assessment of excessive nutrient inputs in wetland and terrestrial habitats will be done with the support of the ETC/NC and other ETCs as appropriate. The deposition of nutrients is also important to both terrestrial ecosystems and water quality and the support of the ETC/AEM has been committed.

The information identification and collection will, where possible, use the proposed freshwater monitoring network and the EIONET. Established information sources and reporting networks will be used where possible and appropriate. The aim is to obtain a good geographical coverage across the whole of Europe.

A questionnaire was developed in the final quarter of 1996 in which information is requested at two levels, **general** level and **detailed** level.

1. **General** information is required to establish a pan-European overview of lake, reservoir, river, coastal and terrestrial issues regarding excessive anthropogenic nutrients impacts (including eutrophication) and water quality issues. Information on pressures and policy responses is also required. National and regional reports released by Member countries and relevant publications are asked for as a first priority. The use of these reports will complement information taken from international publications and will constitute the bulk of the EEA reports.
2. **Detailed** information is requested for a limited number of rivers and lakes. The aim of this data reporting is to compare river and lake water quality in areas with normal land use practices to that found in pristine areas and to report water quality trends.

The questionnaire has been designed to minimise the burden of data collection for the National Focal Points and to facilitate data exchange between the EEA report authors and the NFPs. It contains six sections:

Municipal sources of pollution. (Evaluation of pressures and driving forces).

Natural lakes and reservoirs. (State, trends).

Rivers and river catchments (State, trends).

Marine and coastal environment (State, impacts and trends).

Terrestrial habitats (Driving forces, state, trends).

Policies (Preventive and curative measures. Regulations).

4. PRODUCTS/OUTPUTS PRODUCED BY ETC/IW

The following Tables summarise the outputs from the ETC/IW in 1995 and 1996. Also given is an indication of their status in terms of their availability and intended audience. The status of reports is as follows:

1. Topic Report Published by and available from the EEA.
2. Project Report Produced by the ETC/IW (and available from the ETC/IW's homepage, ftp server, or by e-mail or, when appropriate, as hard copy report) prior to publication by the EEA as a Topic Report.
3. Internal Report Only for internal use by the ETC/IW and EEA, not available for general use.
4. DGXI Report Report produced by and available from the European Commission's Directorate General XI
5. Published Report Reports produced under the Ad-hoc support programme published by external publishers but copies available from ETC/IW

4.1. From the 1994 Subvention Funded Work Programme

(Some products will have been revised/completed from the 1995 Subvention Programme)

Report	Title	Status
P01/95-2	Requirements for water monitoring. June 1996	Topic Report 1/1996
P02/95/2	Design of a freshwater monitoring network for the EEA area. Nov 1996. Final Version	Project Report
P03/95/4	Review of monitoring databases within the European Environment Agency area. Final version. Nov 1996	Project Report
P04/95-6A	An analysis of the need for different types of monitoring stations, Surface Freshwater-Quality. UNINOVA / INAG Portugal.	Internal Report
P04/95-6B	An analysis of the need for different types of monitoring stations, Surface Freshwater - Quantity. Institute of Hydrology, UK.	Internal Report
P04/95-6C	An analysis of the need for different types of monitoring stations, Groundwater - Quality. Geological Survey of Denmark and Greenland (GEUS).	Internal Report
P04/95-6D	An analysis of the need for different types of monitoring stations, Groundwater - Quantity. Austrian Working Group on Water (AWW)	Internal Report
P04/95-7A	Evaluate representativeness of existing monitoring networks. Surface Water - Quality. National Environmental Research Institute, Denmark	Internal Report
P04/95-7B	Evaluate representativeness of existing monitoring networks. Surface Water - Quantity. LNEC/INAG. Portugal	Internal Report

Report	Title	Status
P04/95-7C	Evaluate representativeness of existing monitoring networks. Groundwater - Quality. Austrian Working Group on Water Austria.	Internal Report
P04/95-7D	Evaluate representativeness of existing monitoring networks. Groundwater - Quantity. INAG groundwater working group (CVRM/IST, FCL, LNEC)	Internal Report
P04/95-8A	Identify gaps in current national and international monitoring networks. Surface Water - Quality. National Environmental Research Institute. Denmark	Internal Report
P04/95-8B	Identify gaps in current national and international monitoring networks. Surface Water - Quantity. LNEC/INAG. Portugal	Internal Report
P04/95-8C	Identify gaps in current national and international monitoring networks. Groundwater - Quality. Austrian Working Group on Water (AWW). Austria	Internal Report
P04/95-8D	Identify Gaps In Current National And International Monitoring Networks. Groundwater - Quantity. INAG groundwater working group (CVRM/IST, FCL, LNEC)	Internal Report
P04/95-9C	Determine requirements for density, sampling frequency analytical methods, quality assurance schemes, data storage and estimate costs. Groundwater - Quality. Austrian Working Group on Water. (AWW) Austria	Internal Report
P04/95-9D	Determine requirements for density, sampling frequency analytical methods, quality assurance schemes, data storage and estimate costs. Groundwater - Quantity. INAG. Portugal	Internal Report
P04/95-10a	Sampling site selection for the monitoring network for the EEA Area. Author: P Kristensen (NERI) Denmark.	Internal Report
P04/95-10C	Design of a freshwater monitoring network for the EEA area. Groundwater - Quality. Austrian Working Group on Water. Austria	Internal Report
P04/95-10D	Design of a freshwater monitoring network for the EEA area. Groundwater - Quantity. INAG groundwater working group (CVRM/IST, FCL, LNEC).	Internal Report
P04/95-13	Identify Commonality Between EEA's Requirements And Current Databases. Austrian Working Group on Water (AWW). Austria.	Internal Report
P04/95-14	Develop appropriate procedures formats and software applications for the EEA database. Austrian Working Group on Water. Austria	Internal Report
P04/95-18	Development of an European literature review on surface water and groundwater interaction. LNEC. Portugal	Internal Report
P04/95-5	A comparison of existing monitoring activities with national and international requirements.	Internal Report
NERI/WRC/ DG XI	Quality of surface freshwaters. Common procedure for the exchange of information. 1990-1992. Synthesis Report. August 1995. CEC (1995)	DGXI Report
NERI/DG XI	Inventory of surface water quality monitoring activities in the European Environment Agency area.	DGXI Report
EEA/NERI	Surface Water Quality Monitoring	Topic Report 2/1996
EEA/NERI	Water Quality of Large Rivers	Topic Report 4/1996
P05/1/95-4c	Inventory of water resources monitoring networks - groundwater quality monitoring. December 1995	Internal Report
P05/95-4d	Inventory of water resources monitoring networks - groundwater quantity monitoring	Internal Report
P05/95-4c/d	Inventory of water resources monitoring networks - quality/quantity monitoring supplementary volume Germany and Greece	Internal Report

Report	Title	Status
P05/95-4e	Surface Water Quantity Monitoring	Topic Report 3/1996
P06/95	Synthesis report on importance of reservoirs, usage, environmental conditions, trends and causes	Project Report
P07/95/2	Overview report on the key water resources issues in arid and semi-arid water scarcity regions of the EEA area. Draft Final Version. August 1996	Project Report
P08/95	Annual summary report 1995	Topic Report 5/1996

4.2. From the 1995 Subvention Funded Work Programme

Report	Title	Status
PO11/96/2	Human Interventions in the hydrological Cycle. Authors: Austrian Working Group on Water. Final Version	Project Report
PO12/96/2	Groundwater (Quantity and Quality) Monitoring in Europe. Final Version, C Koreimann, JGrath, G Winkler, W Nagy, W R Vogel, AWW.	Project Report
PO14/96/2	Report on the workshop held on the work of the European Topic Centre on Inland Waters on 3-4 June 1996 at Centro DE Estudios Y Experimentacion de Obras Publicas (CEDEX) Madrid Spain. Rees, Y.R., Nixon S C, Leonard, J., Lack T.J.	Project Report
PO15/96/1	Summary of proposals for a freshwater monitoring network for the European Environment Agency area. Nov 1996. Final Version Authors: S Nixon, A Gunby, Y Rees, T Lack.	Project Report

4.3. From the 1996 Subvention Funded Work Programme

Report	Title	Status
In progress	Monograph with WHO on availability and quality of drinking water in pan-Europe. Annotated list of contents produced for EEA/WHO	
In progress	Monograph on European Groundwater-Quality and Quantity. Annotated list of contents produced. Questionnaire issued.	
In progress	Monograph on impact of excessive nutrients on the environment. Annotated list of contents produced. Questionnaires issued.	
PO17/97/1	Annual summary report for 1996	Project Report
PO16/96	Review of water use efficiency in Europe Second Draft Nov. 1996 Draft not issued - further work proposed under 1997 Subvention.	Project Report
Pending	Update of EEA large rivers database with data from 1993-96 from Exchange of Information Decision. Awaiting outcome of discussions between EEA/DGXI	
In progress	Reporting Directive 1993-95	
In progress	Annual freshwater indicator report	
In progress	Reports on further development of water monitoring network	

In progress	Contributions to Dobris + 3 reporting	
In progress	Contributions to EU 98 SOER report	

4.4. From the Ad Hoc Support Programme (1995 and 1996)

Report	Title	Status
OR1/95	Proposed Directive on Ecological Quality of Surface Waters. Dr T.J. Lack Report of a meeting at Strasbourg 29-30 May 1995, 2 June 1995	Published Report
OR2/95	The Integration of water policy with other policy areas and the role of research and development. Dr T.J. Lack. presentation to the Club de Bruxelles Conference 'Water in Europe'. Brussels 22-23 November 1995	Published Report
WRc CP 744	EC Directives for Environmental Water Quality Management. Dr T.F. Zabel and Dr T.J. Lack. Paper prepared for EWPCA Workshop on Urban Wastewater Treatment Directive, Hamburg 21-22 August 1995	Published Report
OR3/95	Report of 2 nd meeting of the Inputs group OSPAR Commission. 21 November 1995 (S Ashley)	Published Report
OR4/96.	Sustainability - Will it last? The Worshipful Company of Plumbers 12th Annual Lecture. February 1996 Author. Dr T Lack.	Published Report
OR5/96	International obligations and agreements and their applications. Paper presented at Hydrotop '96, 16-18 April 1996. Marseilles, France. February 1996. Authors: S Ashley, S Nixon, T Lack, G Rees, A Gendebien	Published Report
OR6/96	Assistance in drafting: Det Europæiske Miljøagenturs arbejde med vandressourcer by Domingo Jiménez-Beltrán Vækst, 2/96, pp4-5 The status of the European Environment Agency's work on water resources. (English version).	Published Report
OR7/96	European Environment Agency Supports Review of EC Water Policy. Author: Dr Tim Lack RECIEL Volume 5:2 1996 Rivers and International Watercourses.	Published Report

4.5. Other Products/Outputs

ETC/IW Background Leaflet

ETC/IW Newsletters (Now incorporated into the World Wide Web pages)

ETC/IW Brochure (in draft for approval)

ETC/IW Homepages on World Wide Web. URL:

<http://www.wrcplc.co.uk/rnetwork/etc/index.htm>

or go directly from the EEA World Wide Web Home pages at:

<http://www.eea.eu.int/>

Set of acetates "Introduction to the ETC/IW"

Electronic templates for selected questionnaires of the Reporting Directive

5. PLANS AND PROSPECTS FOR 1997

The following tasks have been identified for continuation/completion in 1997.

5.1. Continuing from the 1996 Subvention

Task	Title / Description	Outputs / Schedule Draft chapters and contributions
96/4	Support to EEA on Water Resources Section of Dobris+3 Report and on the EU State of Environment Report	Publication scheduled by EEA for 1998
96/5	Support to DG XI on Reporting Directive	First Draft 15 March Final Report 30 April Final Version June End of 1997
96/5	Update reservoirs and large lakes database	Updated and enlarged database. Final Report. Both by 30 September
96/5	Comparison of National Water Quality Classification Systems	Draft Report. End July
96/6	Monograph on Groundwater Quality and Quantity	First Draft. End July Final Version End October
96/7	Monograph on Impacts of Excessive Nutrients	First Draft End September. Final Version 15 December

5.2. Proposed under the 1997 Subvention

Task	Title / Description	Outputs / Schedule
97/1	Management of Topic Centre	Technical Work Programme end April. Quarterly Reports April, July, October, December. Annual Summary Report.
97/2	Maintain and Support the EIONET Attend NFP/EIONET Meetings, Arrange visits, workshops and bilateral meetings	As required and as scheduled by the EEA
97/3	Ad hoc Technical Support to the EEA	As required by the EEA
97/4	Report on Sustainable Water Use in Europe. I Sectoral Use of Water	First Draft 30 September, Final version 30 November
97/5	Continued Implementation of the Water Monitoring Network	Draft Final Report and Workshop November
97/6	Develop Indicators of Data Quality and Annual Indicators of State and Pressure	First Draft Report end October (Quality) and end November (State and Pressure)
97/7	Monograph on Drinking Water Quality and Human Health.	First Draft Report mid August, Draft Final Report end October, Final Version mid