DG RTD I/3 "Sustainable management and quality of water"
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Potential contribution of past and on-going EU-funded research projects for supporting the activities of the Working Groups and Expert Advisory Fora instituted in the framework of the implementation strategy of the Water Framework Directive

This document represent a contribution of DG RTD – Water Management and Quality Unit – to the Implementation Strategy of the Water Framework Directive, and should serve:

- as a basis for **the identification of groups of projects, clusters or networks to be consulted by the WG and EAF established by the Implementation Strategy** of the WFD;
- as a mean to better **identify the needs for future research** in this policy context

The document groups, under each WG or EAF of the Implementation Strategy, the **most recent research projects** approved by the Commission. Projects taken in consideration range from the end of the 4th Framework Programme – recently concluded projects, for which final results are available – to the whole 5th Framework Programme – on-going activities, for which intermediate results may be available and final results are expected from now on. Taking into consideration that these projects have an average duration of three years, some projects of 1999 are due to end in 2002.
It is important to remember that the projects selected in FP5 were submitted to competitive calls based on the **work programme of the Water Key Action** that was prepared with the **relevant contribution of DG Environment**. The work programme gave a central role to integrated water management, and had one of its major goals to **provide scientific support to the Water Framework Directive**, still in phase of discussion at the time the programme was issued. Further discussions with DG Environment led to a revision of the work programme in November 2000, at the time of the approval of the WFD, with even more **targeted objectives** of support to the Directive.
DG RTD is convinced that the output – in terms of selected projects – of FP5 is of the highest scientific value and that it has the potential to generate results of fundamental importance for the implementation of the WFD. In terms of **economic resources**, even if it is difficult to analyse the value of the outputs of importance for the WFD from the others, it may be evaluated **in the range of 120M€**, considering that about 50% of FP5 projects have the objective to contribute to the directive.
DG RTD is aware that the success cannot be metered in terms of awarded projects but in terms of produced and diffused results. For this reason, our efforts are now directed towards the monitoring of the projects and the exploitation of their potential and actual results. In this context, information means are of the outmost importance, and **the web site of the Water Key Action** (www.cordis.lu/eesd/ka1/home.html) is conceived in order to provide the best and easiest way to come in contact with the EU-funded projects. From there, a much wider amount of information can be obtained.

The **first part** of this document contains short abstracts of a series of the most relevant projects for the various WGs or EAFs.
The **second part** of the document contains a more extended indication of other projects of interest, with the indications of their respective **web sites**, when available.
In order to simplify the management of this large number of projects and in order to establish a simplified interface with stakeholders, regulators and policy-makers, the Key Action Water has promoted the creation of a series of **Clusters**, co-ordinated through Concerted Actions, Thematic Networks and other accompanying measures.
Among those clusters and among the most relevant large research projects, a single or a limited number of **contact points** for the Working Groups and the Expert Advisory Fora have been identified. At the end of the document, a **table** listing these contact points is presented.

PART 1 – Description of projects relevant for the WGs and EAFs

WG analysis of pressures and impacts

A large number of research projects have been launched with the goal to understand the impact on water bodies of anthropogenic impacts of various nature and to understand the role of riparian ecosystems and wetlands, and the in-river (or in-lake) processes that may help in defining the carrying capacity of the given water body.
Among the long list of projects in annex, more than some projects of the CATCHMOD cluster, that will be described under the WG on best practises in river planning, we should particularly highlight the projects:

EVK1-CT2000-00081 STREAMES
Human effects on nutrient cycling in fluvial ecosystems: Development of an expert system to assess stream water quality management at reach scale.
The STREAMES research project intends to develop a strategic expert system tool for assessing and managing nutrient transport and retention in medium-sized catchments in order to improve river water quality and the loads to the coastal zone. The project has a particularly strong relationship to the implementation of the forthcoming Water Framework Directive and the existing Nitrates Directive. At the same time it represents a so far 'missing link' in the thematic projects network ELOISE, namely a management tool for river basins in order to reduce or to avoid surface water and coastal eutrophication.

EVK1-CT2000-00051 DANUBS
Nutrient management in the Danube basin and its impact on the Black Sea.
The DANUBS research project will provide a really integrated approach to address the management of nutrient problems in ground and surface waters from point and diffuse sources in the largest European river basin, the Danube basin, combined with an economic and social assessment of this problem. This intends to stop the further deterioration and to improve the coastal zone water quality of the NW-Black Sea. DANUBS complements the STREAMES project and will contribute to the ELOISE thematic projects network.

EVK1-CT2000-00044 EUROCAT
European catchments: catchment changes and their impacts on the coast.
The EUROCAT research project aims to develop a quantifiable framework of analyses for the improved planning and management of entire river basins of different sizes, land cover/uses, geomorphology, climate/weather, hydrology, etc, in view to improve the quality of coastal seas (contaminant, nutrient loads).

EVK1-CT1999-00018 RECOVER:2010
Predicting recovery in acidified freshwaters by the year 2010 and beyond.
RECOVER:2010 is designed to assess the impact of current and future anthropogenic pressures on sensitive European freshwater ecosystems. The proposed Pan_European assessmant will use enhanced predictive models to evaluate the degree of compliance with respect to restoration of acidified waters by the year 2010 as specified u der the Water Framework Directive, and evaluate the economic costs and environmental benefits of agreed and proposed UN-ECE protocols on emissions control. Direct interaction and involvement of end-users throughout the lifetime of the project will focus the scientific effort to provide robust analysis through which to enhance the decision making process at a policy level, whilst maintaining information exchange links to the public.

WG on designation of heavily modified bodies of water

This subject is very poorly covered by the EU-funded projects, and despite of the accent on this topic that was introduced in the revision of the Work Programme of November 2000, no project proposal of the third call addressed this subject.

The only project which partially deals with the matter is the following:

EVK1-CT1999-00009 CITYFISH
Modelling ecological quality of urban rivers: ecotoxicological factors limiting restoration of fish populations.
The ecological quality of urban river systems in four European countries will be described on a seasonal basis in terms of chemical water quality and biotic indices, and related to the population biology, and occurrence of tissue biomarkers of a resident coarse fish. measurements of swimming performance will be related to migration of fish within the river system. Specific biochemical or molecular changes occurring in fish biomarkers, plus their immunological status, will be used to reveal the degree of exposure to particular toxic chemicals. A parallel sociological study will investigate the way people perceive the risks associated with poor ecological quality in urban rivers. factors limiting fish populations at the study sites will be modelled by multivariata statistics, enabling elaboration of ecological risk assessments and sensitive water quality criteria for a range of European rivers.

WG on classification of inland surface water status and identification of reference conditions

EU-funded projects can provide a strong support in this area, as far as the classification of inland surface water status is concerned, but very little has been and is being done as far as the definition/identification of reference conditions is concerned.
For the first aspect, at least four main projects, among the others in the attached list, have to be cited, because they represent today the main effort carried out at European level with the objective of development and standardisation of assessment methodologies. The AQEM project was recently concluded with the production of all the expected deliverables. The AQEM web site (www.aqem.de/) contains in a downloadable format all the main results of AQEM:

- assessment software
- manual how to apply the AQEM system
- taxa list (>7700 European macroinvertebrate taxa)
- several reports, tools and interesting software products

EVK1-CT1999-00027 AQEM
Development and testing of an integrated assessment system for the ecological quality of streams and rivers throughout Europe using benthic macroinvertebrates
The aim of the project is to develop and test an assessment procedure for streams and rivers which meets the demands of the EU Water Framework Directive using benthic macroinvertebrats. The assessment system will be based on a European stream typology and on near-natural reference conditions. The method will be adapted to regional conditions in order to allow comparable use in all EU member states. It will be combined with methods for stream assessment and indication currently used in the EU member states. If these methods supply additional information for certain regions they will be included in the assessment system as additional modules. Data bases on European macroinvertebrate taxa used for the assessment system will be generated. Finally, the method will be transferred into water management application via a manual and a PC program.

EVK1-CT1999-00026 PAEQANN
Predicting Aquatic Ecosystem Quality using Artificial Neural Networks: Impact of Environmental characteristics on the Structure of Aquatic Communities (Algae, Benthic and Fish Fauna).
The goal of the project is to develop general methodologies, based on advanced modelling techniques, for predicting structure and diversity of key aquatic communities (diatoms, micro-

invertebrates and fish), under natural (i.e. undisturbed by human activities) and under man-made disturbance (i.e.submitted to various pollutions, discharge regulation, ...). Such an approach to the analysis of aquatic communities will make it possible to: i) set up robust and sensitive ecosystem evaluation procedures that will work across a large range of running water ecosystems throughout European countries; ii) predict biocenosis structure in disturbed ecosystems, taking into account all relevant ecological variables; iii) test for ecosystem sensitivity to disturbance; iv) explore specific actions to be taken for restoration of ecosystem integrity. Our investigations will therefore help to define strategies for conservations and restoration, compatible with local and regional development, and supported by a strong scientific background. Among the available modelling techniques, artificial neural networks are particulary appropriate for establishing relationship among variables in the natural processes that shape ecosystems, as these relationship are frequently non-linear.

EVK1-CT-2001-00089 STAR

Standardisation of river classifications : Framework method for calibrating different biological survey results against ecological quality classifications to be developed for the Water Framework Directive

The Water Framework Directive defines a framework for monitoring and assessing the ecological status of surface and ground waters. The ecological status of rivers will be determined in the STAR project from a range of taxonomic groups and a variety of methods. Most Member States will have their own assessment procedures, but a common European standard is still missing. Through field sampling and desk studies the project aims to: 1) cross-calibrate and integrate assessments using different methods and taxonomic groups 2) recommend which procedures to use in which situations 3) define the precision and reliability of each method and 4) assist the EU in defining the boundaries of classes of ecological status. A decision support system will be developed for applying the project findings. The research will be used to assist in the establishment of a European standard for assigning the ecological status of rivers on the basis of multiple sources of ecological data. The STAR project builds upon the results of the previously funded AQEM project and will be clustered with the complementary FAME project.

EVK1-CT2001-00094 FAME

Development, Evaluation and Implementation of a Standardised Fish-based Assessment Method for the Ecological Status of European Rivers: A Contribution to the Water Framework Directive

The objective of the project is to develop, evaluate and implement a standardised Fish-based Assessment Method for the ecological status of European rivers (FAME), a method identified as priority requirement for the implementation of the Water Framework Directive. FAME will follow a pan-European approach in developing models to characterise reference and degraded conditions based on existing fish data of 17000 sites (5200 rivers) in 16 of the 25 eco-regions of Europe. An integrated system to assess the ecological status will be developed in close co-operation with end-users integrated into the project as "Applied partners". The new method will be evaluated by field tests within ongoing national monitoring programmes. A manual and PC-software will be produced and made available to the public via a project web site. In providing a new standard method applicable throughout Europe, FAME will contribute to the new EU water policy aiming at a good status in all water bodies. FAME will be clustered with the complementary STAR project.

WG on the development of typology and classifications systems of transitional and coastal waters

The matter is partially covered by the projects that are clustered in the ELOISE cluster (see attached list), which deals with all the aspects of the relationship between river basins and coastal zones. No project is specifically addressing the implementation of the Water Framework Directive. Among this large group however, the projects **ENV4-CT96-0300 BIOMAR-2 Biological markers of environmental contamination in marine ecosystems** gave very interesting results, which are going to be published very soon on a book.

WG on economic analysis

As far as past and present research is considered, one project – the **METRON** project - so far was specifically dedicated to the subject of water pricing for urban water uses, and another (see below **WADI**) was dedicated to the "economic" evaluation of the irrigated agriculture, in terms of sustainability. **EUROMARKET** analyses possible scenarii of water market liberalisation and of their likely evolution in view of the implementation of the Water Framework Directive. Several socio-economic projects were launched (see attached list), among which the subject of stakeholder's participation was particularly present (i.e. **FIRMA, GOUVERNE, MULINO, MERIT, ADVISOR, EUWARENESS, SLIM, HarmoniCOP, Intermediaries**).

EVK1-CT2000-00057 WADI
The sustainability of European irrigated agriculture under water directive and Agenda 2000.
Emphasis is put on the CAP Reform and the Water Framework Directive. The three involved dimensions: economic impact (farm income), social impact (direct labour and rural development) and environmental impact (water consumption, fertiliser etc) will be re-evaluated in terms of sustainability instead of old profitability conception, taken into account the multi-functional dimension.

EVK1-CT2002-00113 EUROMARKET (Contract under negotiation)
Water liberalisation scenarios: An empirical analysis of the evolution of European water supply and sanitation sectors
This research project aims at analysing the consequences of the liberalisation of the water supply and sanitation sectors in economic, ecological, social and institutional terms. This is done by means of exploring different liberalisation scenarios, which, in turn, result from three separate analyses, namely (1) an analysis of the evolving water market in both distribution and sewerage, (2) an analysis of the evolution of the different enterprises ' strategies, and (3) an analysis of existing legislation and regulations at the EU country level (including Switzerland) and their likely evolutions in light of the EU's waterFramework Directive and its implementation. The research will be conducted by a team of highly qualified researchers from all over Europe.

A **specific document** in support of the WATECO group has been presented to the Conference held in **Lille** on 18-19 March 2002.

WG on tools for the assessment and classification of groundwater (and EAF Groundwater)

Groundwater protection has not been sufficiently developed in the text of the WFD; for this reason a daughter directive is now in preparation. This is reflected as well by the different level of development of surface water and groundwater science, with the second of course much less developed. However, significative efforts have been carried out through EU funded research also in previous Framework Programmes.
A good set of projects have been completed on the characterisation of fractured aquifers and on transport of contaminants(i.e. **PORE-TO-CORE, SCALFRAC, FRACFLOW, FAMEST**); this subject was continued under FP5 with a new on-going project (**TRACe-Fracture**). Other FP5 projects relate to groundwater remediation at contaminated sites (**GRACOS, INCORE, PURE, PEREBAR**), on saltwater intrusion in coastal aquifers (**CHRYSTECHSALIN, SALTRANS, ALIANCE**) and on Boron contamination (**BOREMED**).
It is worth to cite more extensively four FP5 projects, which represent today the most relevant ones for groundwater management:

EVK1-CT1999-00006 BASELINE

Natural Baseline Quality in European Aquifers: a basis for aquifer management

There is currently no standard to access the natural baseline quality of groundwater. This is required a) as basis for defining pollution and b) because existing limits are breached by entirely natural processes. The present-day baseline inorganic and organic geochemistry will be investigated using selected reference aquifers as well as historical water quality trends in these aquifers. State-of-thart chemical, isotopic and radiometric tracer techniques and geochemical modelling will be used to define timescales of the natural geochemical processes. The results will be used as a scientific basis for underpinning tne emerging Water Framework Directive and for making recommendations for monitoring natural aquifer systems. This will be achieved by working closely with an advisory group drawn from regulatory bodies in the consortium. The results will be presented through scientific channels, for use by policy makers and legislators.

EVK1-CT1999-00041 W-SAHARA

Stochastic analysis of well head protection and risk assessment

Wellhead protection zones serve as an effective protection of groundwater against pollution by regulating human activities in areas around drinking wells. The major problem that drinking water companies are facing is the definition of a reliable strategy for the quantification of the risk associated to drinking well fields. Traditional deterministic models inherently offer predictions of undetermined quality. We propose to develop efficient scholastic computational methods for flow and well catchment predictions in aquifers of random heterogeneity, conditioned on available measurements, including a quantification of the concept of risk associated with such predictions. We will perform field and laboratory experiments, demonstrate our methodology through application to selected field data and offer guidelines on how to reduce uncertainty by geological investigations and monitoring of groundwater heads/concentrations.

EVK1-CT1999-00043 GOUVERNe

Guidelines for the Organisation, Use and Validation of information systems for Evaluating aquifer Resources and Needs

The project GOUVERNe will deveop an implementation for selected case studies in the European Union, a user-based and scientifically validated Decision support system (DSS) for management of undeground water resources at the catchment levels. Hydrological, spatial and economic data sets will be integrated within scenario simulation tools under a state-of-the-art information and communications technology (ICT) user interface. The product will allow robust and clear scientific support for deliberation by dcision-makers and stakeholders permitting intelligent compromises, identification of novel management options and, to the extent possible, co-operative conflict resolution. The consortium unites research, information technology and water management partners.

EVK1-CT1999-00028 PEGASE

Pesticides in European Groundwaters : detailed study of representative Aquifers and Simulation of possible Evolution scenarios

Pesticide concentrations greater than the accepted potability standards (0.1 µg L-1) have been reported in many European groundwater (GW) used for drinking water supplies. The question of how this will evolve cannot at present be answered. This is why the hydroelogists, soil scientists and socio-economists of PEGASE adress the key processes involved in the pesitcide contamination of sic contrasted aquifers representative of European GW resources. A 32-months detailed field monitoring, supported by laboratory work, will be the basis for the development, calibration and performance assessment of predective modelling tools. At the same time, alternative scenarios of agricultural practices will be establised and tested with the developed tools so as to provide a socio-economic assessment of the implementations of alternative land uses and agricultural practices on GW quality.

WG on best practices in River Basin Planning

Several FP5 projects are dealing with this subject (see attached list), and several of them has been already cited for the WG on analysis of pressures and impacts.
However, in this field DG RTD has and is making a particular effort for the launch of the CATCHMOD initiative, an European concerted effort for producing harmonised integrated modelling tools for catchment planning and management to be used for the implementation of the WFD.
The CATCHMOD initiative has selected ten projects for a total EU contribution of about 30 M€(see below), co-ordinated through the concerted action **HarmoniCA**.

EVK1-CT-2002-20001 HarmoniCA (Contract under negotiation)

Harmonised Modelling Tools for Integrated Basin Management

The Water Framework Directive provides a European policy basis for water management and the elaboration in river basins . It prescribes the development of river basin management plans. The development of these plans increasingly needs high quality computer based tools (ICT tools) , including tools for socio-economic analysis and stakeholder participation. Though many tools have been developed, there is no clear and complete overview on what is available and which tools to use in which situations. HarmoniCA will establish a forum for unambiguous communication and discussion concerning the use and development of all tools relevant to the implementation at the WFD . In six workpackages key aspects of integrated modelling will be considered in close collaboration with the modelling community , the policy makers and the users .

EVK1-CT-2001-00090 HarmonIT

IT Framework

The aim of the HarmonIT project is to develop an 'Open Modelling Interface and Environment (OMI)'. The purpose of this environment is to facilitate the linking of models and so allow catchment process interactions to be represented in the formulation and selection of sustainable policies for catchment management. Model linkage will address scale and resolution aspects, model concept (deterministic/stochastic), model regimes (e.g. arid/Mediterranean/arctic) and aspects of variables modelled (e.g. high flows (floods)/average conditions/low flows(summer flows)), need to represent feed back loops, lack of common data definitions and absence of an agreed generic data model description, and finally framework, platforms, medium and physical location of models to be linked.

EVK1-CT-2001-00097 HarmoniQuA

Harmonising Quality Assurance in model based catchment and river basin management

The project aims to develop a European methodology for modelling and simulation in water management, covering both generic and domain specific modelling activities. The development of a generic methodology will be achieved on the basis of collected existing methodologies and guidelines (both generic and domain specific) and subsequent analysis, harmonisation, integration and improvement. Subsequently, the generic methodology will be translated into guidelines for seven specific domains: groundwater models, precipitation runoff models, hydrodynamic models (including sediment and morphology models), flood forecasting models, surface water quality

models, biota (ecological) models, and socio-economic models. Stand-alone and plug-in tools to support modellers and water managers throughout the quality assurance process will be also developed and tested in integrated case studies covering geographical conditions and modelling cultures, involving various stakeholders and end-users. An exploitation infrastructure guarantees long term support and future use by the entire community of water managers. (see also http://www.info.wau.nl/harmoniqua/)

EVK1-CT-2001-00093 BMW

Benchmark Models for the Water framework directive

The overall objective of the project is to establish a set of socio-economic, bio-geo-chemical and systems analytical criteria to assess the appropriateness of integrated models for the use in the implementation of the WFD. The project aims at testing and demonstrating the use of the models fulfilling the defined a priori criteria, applied to selected intensively studied river basins differing in ecotype, land-use, pollution activities and pollution problems, to answer questions relevant for the implementation of the WFD. This will include linking the output of the integrated models to the ecological status of freshwaters, assessing the sensitivity and goodness-of-fit of selected models, and running a series of scenarios of possible measures to show the cost effectiveness towards achieving water quality goals. The active participation of the end-users will ensure that the criteria and the models are operational and functional at the management level.

EVK1-CT-2001-00096 EUROHARP

Towards Harmonised Procedures for Quantification of Catchment Scale Nutrient Losses from European Catchments

EUROHARP includes nine different contemporary methodologies for quantifying diffuse losses of N and P, and a total of seventeen study catchments across gradients in European climate, soils, topography, hydrology and land use. These methodologies have been selected to include those approaches - applicable at catchment scale - that are currently used by European research institutes to inform policy makers at national and international levels. The first primary objective of EUROHARP is to provide end-users (national and international European environmental policy-makers) with a thorough scientific evaluation of the nine contemporary quantification tools and their ability to estimate diffuse nutrient (N, P) losses to surface freshwater systems and coastal waters; and thereby facilitate the implementation of the EC Water Framework Directive. The second primary objective is to develop an electronic decision support system (tool-box) for the identification of benchmarking methodologies with respect to both costs and benefits, for the quantification of diffuse nutrient losses under different environmental conditions across Europe.
EUROHARP will contribute substantially to improved comparability, transparency and reliability of the quantification of nutrient losses from diffuse sources, and thereby to improved efficiency of abatement strategies related to the implementation of e.g. the Nitrates Directive and the Water Framework Directive.

EVK1-CT-2001-00099 TISZA RIVER PROJECT

The Tisza River Project - Real-life scale integrated catchment models for supporting water- and environmental management decisions

The main objective is to help solving the most critical water- and environmental problems of the multinational Tisza river basin in line with the relevant EU policy objectives. Main issues are pollution control (such as those of the dramatic accidents of the year 2000) and the protection of the unique wetland ecosystems. The project is aimed at the development of and integrated catchment model, which will be a genuine and practical application. Specific objectives are: Development of hydrological, hydraulic, water quality models and ecological models to support the analysis of novel eco-hydrological management strategies jointly with the traditional ones. The eco-hydrological objective is to control flow, point and non-point pollution in such a way as to help revitalising the high number of unique wetlands, serving simultaneously the interest of other water uses (such as flood control, fisheries, irrigation and drainage, recreation and water quality improvement) in an integrated manner.

EVK1-CT2002-00109 HarmoniRib (Contract under negotiation)
Harmonised Techniques and Representative River Basin Data for Assessment and Use of Uncertainty Information in Integrated Water Management
The preparation of integrated water management plans for the WFD will require making a large number of decisions by operational agencies in Europe. A decision maker has to make decisions based on the available information. In most cases this information is deficient, incomplete and uncertain. How should this affect the decision making? The methodology to quantify uncertainty and to assess the propagation of uncertainty from the raw data to concise management information and decision making is the main subject in this project. HarmoniRiB will develop an uncertainty analysis toolkit comprising methodologies and tools for identifying, assessing and quantifying uncertainty and risk in decision making - Furthermore, a network of representative river basins with datasets comprising information on uncertainty will be developed and made publicly available. The suitability of the methodologies, the tools and the datasets will be demonstrated through a number of integrated case studies.

EVK1-CT-2002-00112 TempQSim (Contract under negotiation)
Evaluation and improvement of water quality models for application to temporary waters in Southern European catchments
The aim of the project is to provide advanced tools to significantly improve the efficiency of integrated water management in the Mediterranean and semiarid river catchments. There are major problems in the application of existing water quality models during periods without runoff and the extreme first flush effects at the beginning of the rain period. The dynamic processes in sediments during the period of no Surface runoff and the interaction of resuspended matter and water quality is often not considered. It is proposed that selected models will be improved by development of new hydrological and sediment modules. They will be tested in a rigorous experimental catchment framework, at various Mediterranean case study sites at the sub-basin scale. Experience of data needs and model application, through close interaction to a range of end-users, will be used to prepare guidelines for the operational use of models and adapted management strategies.

EVK1-CT-2002-00121 CLIME (Contract under negotiation)
Climate and Lake Impacts in Europe
CLIME brought together a consortium of scientists and end-users from 10countries to assess the direct and indirect effects of changes in the weather on the dynamics of lakes in northern, western and central Europe. Particular attention will be paid to water quality variables used as diagnostic elements in the Water Framework Directive. The primary objective is to develop a suite of well as past changes in the weather. The models will be validated by historical data and perturbed by simulations of future variations in the weather. These simulations will be based on the output from an ensemble of Regional Climate Models (RCMs) and will be linked to socio-economic analyses of their costs and benefits of the predicted changes. One of the main outputs will be a Decision Support System that can be used to optimise the management of lakes in a warmer world.

EVK1-CT-2002-00120 HarmoniCOP (Contract under negotiation)
Harmonising Collaborative Planning
The main objective of the HarmoniCOP project is to increase our understanding of participatory river basin management in Europe and support the implementation of the Water Framework Directive on this point. The research will focus on three aspects that are both essential for river basin management and scientifically challenging: - scale issues (at which level and in which phase to organise which kind of PP?) - the role of information and information tools - the influence of the cultural-/ political-/ geographical context. Nine countries will be studied and in-depth case studies will be conducted. The research will result in a Handbook on public participation methodologies to be used in implementing the Water Framework Directive. Throughout the project, end-users will be involved through workshops, the case studies, the Internet, etc.

WG on Development of a Geographical Information System (GIS)

This subject will be approached by the previously described project of the CATCHMOD initiative. However, a training course (**GEOWATER**) dedicated to GIS for the WFD has been approved by DG RTD – Euroconference.

Integrated testing in pilot river basins

Within the CATCHMOD initiative, the project **HarmoniRib** (see above with the CATCHMOD cluster description) has been selected. It covers the research priority described in the work programme for a project launching a network of representative pilot river basins: "…*These representative catchments/river basins or sub-basins (covering the spectrum of water types and eco-regions defined in the Water Framework Directive) should be selected among those where long-term research and/or monitoring activities have been undertaken in the past. with the aim to start a European network of representative 'case studies' for the inter-comparison, verification and validation of the various models, and to approach the solution of well-defined water-related problems*".
Contacts have been established between the JRC and the proposers of this new project, in order to study how to maximise the synergy between this network and the one expected for the implementation of the WFD, that should if possible coincide.

EAF Priority Substances

A long list of projects related to this topic is reported in the annex. The revised work programme of KA1 asked for projects to improve the COMMPS procedure, but unfortunately no suitable project in this sense was presented.
Several projects address the problem of endocrine disrupting chemicals, for which new projects have been selected after the closure of the dedicated call on EDC in mid September 2001. The **ENDO** cluster has been formed with the projects **EDEN, FIRE, COMPRENDO** and **EURISKED**. This cluster will then group together also other on-going projects in the field, like **ACE**. In addition, highly interesting final results have been achieved by the **COMPREHEND** project.
Another group of projects is dealing with the emerging problem of residues of pharmaceuticals (the PHARMA cluster, between the projects **ERAVMIS, REMPHARMAWATER and POSEIDON**)
Several of the on-going projects may be relevant for covering some of the existing knowledge gaps, and particularly:

EVK1-CT-1999-00012 BEAM
Bridging effect assessment of mixtures to ecosystem situations and regulation
BEAM focuses on risk assessment of mixture toxicity resulting from joint occurrence of environmental pollutants. Its objectives are (i) to provide tools for implementation of predictive combined effect assessment in normative protocols, (ii) to generate instruments allowing for more environmental realism in the scientific assessment of complex exposure. The workpackages interlink innovative multiple exposure identification methodology with advanced fast mixture toxicity testing which comprise population and community biotesting? The experimental results compared with toxicity predictions generated from biometrical and chemometrical modelling approaches will allow conceptually based combined effect assessments . In conjunction with efforts that investigate the options for predictive mixture toxicity risk assessment, several tools will be delivered that shall provide a bridge between the scientific assessment of pollutant mixtures, ecosystem situations and environmental regulations (e.g. Water Framework Directive).

EVK1-CT-2001-00086 BIOSPEC
Sensor development for routine prediction of metal bio-uptake in freshwaters and soil solutions
In collaboration with end-users, the BIOSPEC project will compare sensors for the routine prediction of metal bio-uptake, based on in situ metal speciation measurements. The project addresses aims of the Water Framework Directive (2000/60/EC) to protect aquatic systems by setting environmental quality standards. The results will facilitate implementation of this policy by

formulating appropriate speciation-based parameters for heavy metals (Cu, Pb, Cd, Zn, Ni) and by providing the tools to enable their routine measurement by end-users. Specifically, the project will: (i) determine simple predictive quantitative parameters for assessing metal bio-uptake (ii) rigorously compare several dynamic speciation techniques (iii) assess the relative merits of the techniques in the field (iv) assess the capabilities of the techniques to predict metal uptake by organisms under a range of natural conditions, and (v) apply the sensors and models to routine monitoring at the river basin level.

EVK1-CT-2001-00100 ACE

Analysing combination effects of mixtures of estrogenic chemicals in marine and freshwater organisms

There is growing concern among European Union citizens about chemicals that are suspected of disrupting reproduction in aquatic organisms. Natural estrogens and synthetic chemicals with estrogenic activity have adversely affected a variety of fish. Addressing the crucial aspect of identifying the causes of endocrine disruption in aquatic systems the ACE project will analyse how chemicals implicated as causative agents might act when present as mixtures. Hence, ACE intends to improve our understanding of the effects of combinations of multiple estrogenic chemicals and other toxicants on aquatic organisms. It brings together expertise from fish biology, endocrinology, biometry, statistics and analytical chemistry. Mixture effects of combinations of multiple estrogenic chemicals will be assessed and predicted at the sub-cellular, cellular, physiological and organism levels by using a variety of estrogenicity assays. The ACE project will be clustered with several ongoing EDC projects within the ENDO cluster.

PART 2 – ACRONYMS, FULL TITLES AND WEB PAGE ADDRESSES OF AN EXTENDED LIST OF PROJECTS RELATED TO THE WGs AND TO THE EAFs

Searches can be launched on the CORDIS web site (www.cordis.lu/eesd/ka1/home.html) making use of the contract number. Projects with the contract number beginning with ENV4 belong to the Fourth Framework Programme (Previous Research).

WG Analysis of pressures and impacts

- **EUROCAT** - EUROPEAN CATCHMENTS: CATCHMENT CHANGES AND THEIR IMPACT ON THE COAST - EVK1-CT-2000-00044 - http://www.iia-cnr.unical.it/EUROCAT/project.htm

- **EUROLAKES** - INTEGRATED WATER RESOURCE MANAGEMENT FOR IMPORTANT DEEP EUROPEAN LAKES AND THEIR CATCHMENT AREAS - EVK1-CT-1999-00004 - http://pcs0.hydromod.de/Eurolakes/index.html

- **PHYTOPLANKTON-ON-LINE** - INTERACTIVE REGULATION OF PHYTOPLANKTON SUCCESSION BY PHYSICAL FORCING AND INTERNAL PHOSPHORUS LOADING: A COMPARATIVE STUDY IN EUTROPHIC FRESHWATER LAKES - EVK1-CT-1999-00037 - http://phyto-online.ocean.org.il/

- **SWALE** – SHALLOW WETLAND LAKE FUNCTIONING AND RESTORATION IN A CHANGING EUROPEAN ENVIRONMENT – ENV4-CT97-0420

- **MOLAR** – MEASURING AND MODELLING THE DYNAMIC RESPONSE OF REMOTE MOUNTAIN LAKE ECOSYSTEMS TO ENVIRONMENTAL CHANGE: A PROGRAMME OF MOUNTAIN LAKE RESEARCH – ENV4-CT95-0007 – http://www.mountain-lakes.org/molar/index.html

- **EMERGE** - EUROPEAN MOUNTAIN LAKE ECOSYSTEMS: REGIONALISATION, DIAGNOSTICS & SOCIO-ECONOMIC EVALUATION - EVK1-CT-1999-00032 – http://www.mountain-lakes.org/index.html

- **CLIMFRESH** – IMPACT OF CLIMATE CHANGE ON CARBON FLUX IN FRESHWATER ECOSYSTEMS – ENV4-CT97-0570

- **REFLECT** - RESPONSE OF EUROPEAN FRESHWATER LAKES TO ENVIRONMENTAL AND CLIMATIC CHANGE - ENV4-CT97-0453

- **ECOFRAME** - ECOLOGICAL QUALITY AND FUNCTIONING OF SHALLOW LAKE ECOSYSTEMS WITH RESPECT TO THE NEEDS OF THE EUROPEAN WATER FRAMEWORK DIRECTIVE - EVK1-CT-1999-00039 –

- **INCA** - INTEGRATED NITROGEN MODEL FOR EUROPEAN CATCHMENTS - EVK1-CT-1999-00011 - http://www.rdg.ac.uk/~sgs98ajw/inca_publish/

- **RANR** -REGIONAL ANALYSIS OF SUBSURFACE RETENTION OF NITROGEN AND THE IMPACT OF SUCH RETENTION ON THE EXPORT OF NITROGEN FROM LAND TO SEA - ENV4-CT97-0435

- **NICOLAS** - NITROGEN CONTROL BY LANDSCAPE STRUCTURE IN AGRICULTURAL ENVIRONMENTS - ENV4-CT97-0395 - http://www.qest.demon.co.uk/nicolas/nicolas.htm

- **RECOVER:2010** - PREDICTING RECOVERY IN ACIDIFIED FRESHWATERS BY THE YEAR 2010 AND BEYOND. - EVK1-CT-1999-00018 - http://www.mluri.sari.ac.uk/recover/recover2010.htm

- **BUFFER** - KEY NUTRIENT TRANSPORT MECHANISMS IMPORTANT FOR THE PREDICTION OF NUTRIENT AND PHYTOPLANKTON CONCENTRATIONS IN EUROPEAN STANDING WATERS - EVK1-CT-1999-00019 –

- **DANUBS** - NUTRIENT MANAGEMENT IN THE DANUBE BASIN AND ITS IMPACT ON THE BLACK SEA - EVK1-CT-2000-00051 - http://danubs.tuwien.ac.at/

- **STREAMES** - HUMAN EFFECTS ON NUTRIENT CYCLING IN FLUVIAL ECOSYSTEMS: DEVELOPMENT OF AN EXPERT SYSTEM TO ASSESS STREAM WATER QUALITY MANAGEMENT AT REACH SCALE. - EVK1-CT-2000-00081 - http://www.streames.org/

- **PAEQANN** - PREDICTING AQUATIC ECOSYSTEM QUALITY USING ARTIFICIAL NEURAL NETWORKS: IMPACT OF ENVIRONMENTAL CHARACTERISTICS ON THE STRUCTURE OF AQUATIC COMMUNITIES (ALGAE, BENTHIC AND FISH FAUNA). - EVK1-CT-1999-00026 - http://quercus.cemes.fr/~paeqann/

- T**ARGET** - INTEGRATED ASSESSMENT TOOLS TO GAUGE LOCAL FUNCTIONAL STATUS WITHIN FRESHWATER ECOSYSTEMS - EVK1-CT-1999-00005 - http://bscw.bio.ua.pt:3000/

- **MANTRA-East** - INTEGRATED STRATEGIES FOR THE MANAGEMENT OF TRANSBOUNDARY WATERS ON THE EASTERN EUROPEAN FRINGE - THE PILOT STUDY OF LAKE PEIPSI AND ITS DRAINAGE BASIN - EVK1-CT-2000-00076 - http://www.mantraeast.org/

-**PROTOWET** – PROCEDURAL OPERATIONALISATION OF TECHNIQUES FOR THE FUNCTIONAL ANALYSIS OF EUROPEAN WETLAND ECOSYSTEMS – ENV4-CT95-0060

- **EVALUWET** - EUROPEAN VALUATION AND ASSESSMENT TOOLS SUPPORTING WETLAND ECOSYSTEM LEGISLATION - EVK1-CT-2000-00070 - http://www1.rhbnc.ac.uk/rhier/evaluweb/index.shtml

- **FLOBAR-2** - FLOODPLAIN BIODIVERSITY AND RESTORATION 2: INTEGRATED NATURAL SCIENCE AND SOCIO-ECONOMIC APPROACHES TO CATCHMENT FLOW MANAGEMENT - EVK1-CT-1999-00031 - http://www.geog.cam.ac.uk/research/flood/FLOBAR2/Flobar2.html

- **BASIS** - ASSESSING THE CONSEQUENCES OF GLOBAL CHANGES FOR THE BARENTS SEA REGION: THE BARENT SEA IMPACT STUDY - ENV4-CT97-0637 - http://www.urova.fi/home/arktinen/basis.htm

WG Reference conditions inland surface waters

- **AQEM** - DEVELOPMENT AND TESTING OF AN INTEGRATED ASSESSMENT SYSTEM FOR THE ECOLOGICAL QUALITY OF STREAMS AND RIVERS THROUGHOUT EUROPE USING BENTHIC MACROINVERTEBRATES - EVK1-CT-1999-00027 - http://www.aqem.de/

- **STAR** - STANDARDISATION OF RIVER CLASSIFICATIONS : FRAMEWORK METHOD FOR CALIBRATING DIFFERENT BIOLOGICAL SURVEY RESULTS AGAINST ECOLOGICAL QUALITY CLASSIFICATIONS TO BE DEVELOPED FOR THE WATER FRAMEWORK DIRECTIVE - EVK1-CT-2001-00089 - http://www.eu-star.at/

-**FAME** - DEVELOPMENT, EVALUATION AND IMPLEMENTATION OF A STANDARDISED FISH-BASED ASSESSMENT METHOD FOR THE ECOLOGICAL STATUS OF EUROPEAN RIVERS: A CONTRIBUTION TO THE WATER FRAMEWORK DIRECTIVE – EVK1-CT-2001-00094 – http://fame.boku.ac.at/

- **PAEQANN** - PREDICTING AQUATIC ECOSYSTEM QUALITY USING ARTIFICIAL NEURAL NETWORKS: IMPACT OF ENVIRONMENTAL CHARACTERISTICS ON THE STRUCTURE OF AQUATIC COMMUNITIES (ALGAE, BENTHIC AND FISH FAUNA). - EVK1-CT-1999-00026 - http://quercus.cemes.fr/~paeqann/

- **MOLAR** – MEASURING AND MODELLING THE DYNAMIC RESONSE OF REMOTE MOUNTAIN LAKE ECOSYSTEMS TO ENVIRONMENTAL CHANGE: A PROGRAMME OF MOUNTAIN LAKE RESEARCH- ENV4-CT95-0007 – http://www.mountain-lakes.org/molar/index.html

- **EMERGE** - EUROPEAN MOUNTAIN LAKE ECOSYSTEMS: REGIONALISATION, DIAGNOSTICS & SOCIO-ECONOMIC EVALUATION - EVK1-CT-1999-00032 – http://www.mountain-lakes.org/index.html

- **ECOFRAME** - ECOLOGICAL QUALITY AND FUNCTIONING OF SHALLOW LAKE ECOSYSTEMS WITH RESPECT TO THE NEEDS OF THE EUROPEAN WATER FRAMEWORK DIRECTIVE - EVK1-CT-1999-00039 –

- **TARGET** - INTEGRATED ASSESSMENT TOOLS TO GAUGE LOCAL FUNCTIONAL STATUS WITHIN FRESHWATER ECOSYSTEMS - EVK1-CT-1999-00005 - http://bscw.bio.ua.pt:3000/

- **ERMAS** - EUROPEAN RIVER MARGINS: ROLE OF BIODIVERSITY IN THE FUNCTIONING OF RIPARIAN SYSTEMS - ENV4-CT95-0061

- **FLOBAR-1 –** FLOODPLAIN BIODIVERSITY AND RESTORATION PART 1: HYDROLOGICALAND GEOMORPHOLOGICAL MECHANISMSINFLUENCING FLOODPLAIN BIODIVERSITY AND THEIR APPLICATION TO THE RESTORATION OF FLOODPLAINS – ENV4-CT96-0317

- **AASER** - ARCTIC AND ALPINE STREAM ECOSYSTEM RESEARCH - ENV4-CT95-0164

- **BIOMASS** - BIODIVERSITY OF MICROORGANISMS IN AQUATIC SYSTEMS - ENV4-CT95-0026

- **SWALE** - SHALLOW WETLAND LAKE FUNCTIONING AND RESTORATION IN A CHANGING EUROPEAN ENVIRONMENT - ENV4-CT97-0420 - http://swale.sbs.liv.ac.uk/index.html

WG Heavily modified water bodies

- **CITYFISH** - MODELLING ECOLOGICAL QUALITY OF URBAN RIVERS: ECOTOXICOLOGICAL FACTORS LIMITING RESTORATION OF FISH POPULATIONS. - EVK1-CT-1999-00009 - http://www.biosciences.bham.ac.uk/labs/taylor/CITYFISH.htm

WG Typology, classification of transitional and coastal waters

- **BASIC** - BALTIC SEA CYANOBACTERIA - ENV4-CT97-0571

- **EUROSAM** -EUROPEAN SALT MARSHES MODELLING - ENV4-CT97-0436

- **SUB-GATE** - SUB-MARINE GROUNDWATER FLUXES AND TRANSPORT PROCESSES FROM METHANE-RICH COASTAL SEDIMENTARY ENVIRONMENTS - ENV4-CT97-0631

- **EROS-21** - BIOGEOCHEMICAL INTERACTIONS BETWEEN THE DANUBE RIVER AND THE NW-BLACK SEA -

- **BIOMAR-2** - BIOLOGICAL MARKERS OF ENVIRONMENTAL CONTAMINATION IN MARINE ECOSYSTEMS (PHASE2) – EV4V-CT94-0550 (the final results of this project have been published in 2001 as a book, entitled “Biomarkers in Marine Organisms: A practical Approach”, edited by Ph.Garrigues, H. Barth, C.H. Walker and J.F. Narbonne, Elsevier Science B.V., Amsterdam, 550 pp.)

- **ROBUST** - THE ROLE OF BUFFERING CAPACITIES IN STABILISING COASTAL LAGOON ECOSYSTEMS - ENV4-CT96-0218

- **MED BLACK** – JOINT LOICZ AND ELOISE WORKSHOP ON ESTUARINE SYSTEMS OF THE MEDITERRANEAN AND BLACK SEA REGIONS - EVK1-CT2000-60012

- **CHABADA** - CHANGES IN BACTERIAL DIVERSITY AND ACTIVITY IN MEDITERRANEAN COASTAL WATERS AS AFFECTED BY EUTROPHICATION - MAS3-CT96-0047

- **NICE** - NITROGEN CYCLING IN ESTUARIES - MAS3-CT96-0048 - http://www.dmu.dk/lakeandestuarineecology/NICE/

- **METRO-MED** - DYNAMICS OF MATTER TRANSFER AND BIOGEOCHEMICAL CYCLES: THEIR MODELLING IN COASTAL SYSTEMS OF THE MEDITERRANEAN SEA - MAS3-CT96-0049

- **COMWEB** - COMPARATIVE ANALYSIS OF FLOOD WEBS BASED ON FLOW NETWORKS: EFFECTS OF NUTRIENT SUPPLY ON STRUCTURE AND FUNCTION OF COASTAL PLANKTON COMMUNITIES - MAS3-CT96-0052

- **PHASE** - PHYSICAL FORCING AND BIOGEOCHEMICAL FLUXES IN SHALLOW COASTAL ECOSYSTEMS - MAS3-CT96-0053

- **MMS 2000+** - MARINE MONITORING SYSTEM 2000+ FOR THE NORTH SEA REGION-FEASIBILITY AND DEFINITION PHASE - MAS3-CT96-0057

- **F-ECTS** - FEEDBACKS OF ESTUARINE CIRCULATION AND TRANSPORT OF SEDIMENTS ON PHYTOBENTHOS - MAS 3-CT97-0145

- **KEYCOP** - KEY COASTAL PROCESSES IN THE MESOTROPHIC SKAGERRAK AND THE OLIGOTROPHIC NORTHERN AEGEAN: A COMPARATIVE STUDY - MAS3-CT97-0148

- **DOMTOX** - IMPORTANCE OF DISSOLVED ORGANIC MATTER FROM TERRESTRIAL SOURCES FOR THE PRODUCTION, COMMUNITY STRUCTURE AND TOXICITY OF PHYTOPLANKTON OF THE EUROPEAN ATLANTIC AND BALTIC COASTAL WATERS: ROLE OF MICROPREDATORS FOR TRANSMISSIONS OF TOXINS TO COMMERCIAL SHELLFISH AND FISH LARVAL - MAS3-CT97-0149

- **EULIT** - EFFECTS OF EUTROPHICATED SEAWATER ON ROCKY SHORE ECOSYSTEMS STUDIED IN LARGE LITTORAL MESOCOSMS - MAS3-CT97-0153

- **BIOGEST** - BIOGAS TRANSFERS IN ESTUARIES - ENV4-CT96-0213 - http://www.ulg.ac.be/oceanbio/biogest/

- **ECOFLAT** - THE ECO-METABOLISM OF AN ESTUARINE TIDAL FLAT - ENV4-CT96-0216 - http://www.nioo.knaw.nl/cemo/ecoflat/Ecoflat.htm

- **BBC**S - THE BALTIC BASIN CASE STUDY: TOWARDS A SUSTAINABLE BALTIC - ENV4-CT96-0269

- **RANR** - REGIONAL ANALYSIS OF SUBSURFACE RETENTION OF NITROGEN AND THE IMPACT OF SUCH RETENTION ON THE EXPERT OF NITROGEN FROM LAND TO THE SEA - ENV4-CT97-0435

- **ISLED** - INFLUENCE OF RISING SEA LEVEL ON ECOSYSTEM DYNAMICS OF SALT MARSHES - ENV4-CT97-0582 - http://www.nioo.knaw.nl/cemo/isled/isled.htm

- **ANICE** - ATMOSPHERIC NITROGEN INPUTS INTO COASTAL ECOSYSTEMS - ENV4-CT97-0594

- **CLICOFI** - EFFECTS OF CLIMATE INDUCED TEMPERATURE CHANGE ON MARINE COASTAL FISHES -ENV4-CT97-0596 - http://www.awi-bremerhaven.de/ECOLOGY/CLICOFI/

- **BASIS** - ASSESSING THE CONSEQUENCES OF GLOBAL CHANGES FOR THE BARENTS SEA REGION: THE BARENTS SEA IMPACT STUDY - ENV4-CT97-0637 - http://www.urova.fi/home/arktinen/basis.htm

- **POPCYCLE-Baltic** - ENVIRONMENTAL CYCLING OF SELECTED PERSISTENT ORGANIC POLLUTANTS (POPS) IN THE BALTIC REGION - ENV4-CT96-0214 - http://www.nilu.no/projects/baltic/

- **TOROS** - BIOGEOCHEMITRY OF AN ACIDIC AND METAL-RICH RIVER-ESTUARY SYSTEM: CONSEQUENCES FOR ATLANTIC SHELF WATERS (GULF OF CADIZ, SW SPAIN) - ENV4-CT96-0217 - http://carpanta.ugr.es/toros.html

- **ESCAPE** - ENTANGLED SULFUR AND CARBON CYCLES IN PHAEOCYSTIS DOMINATED ECOSYSTEMS - MAS3-CT96-0050

WG and EAF Groundwater

- **PORE-TO-CORE** - PORE-TO-CORE SCALE-UP STUDIES OF THE TRANSPORT PROPERTIES OF ORGANIC POLLUTANTS WITH NATURAL ATTENUATION - ENV4-97-0457

- **SCALFRAC** - SCALE DEPENDENCE OF GROUNDWATER FLOW AND CONTAMINANT TRANSPORT ION FRACTURED ROCK - ENV4-97-0456 - http://www.nrsc.no/SCALFRAC/index.html

- F**RACFLOW** - CONTAMINANT TRANSPORT, MONITORING TECHNIQUE AND REMEDIATION STRATEGIES IN CROSS EUROPEAN FRACTURED CHALK - ENV4-97-0441 - http://www.fracflow.dk/index.htm

- **FAMEST** - FUNDAMENTAL ASPECTS OF METAL SPECIATION AND TRANSPORT IN METAL-CONTAMINATED SOILS AND AQUIFERS - ENV4-97-0554 - http://www.bgs.ac.uk/hydro/famest.htm

- **TRACe-Fracture** - TOWARDS AN IMPROVED RISK ASSESSMENT OF THE CONTAMINANT SPREADING IN FACTURED UNDERGROUND RESERVOIRS - EVK1-CT-1999-00013 - http://www.iceht.forth.gr/projects/trace_fracture/index.html

- **GRACOS** - GROUNDWATER RISK ASSESSMENT AT CONTAMINED SITES - EVK1-CT-1999-00029 - http://www.uni-tuebingen.de/gracos/

- **INCORE** - INTEGRATED CONCEPT FOR GROUNDWATER REMEDIATION - EVK1-CT-1999-00017 - http://www.umweltwirtschaft-uw.de/incore/

- **PURE** - PROTECTION OF GROUNDWATER RESOURCES AT INDUSTRIALLY CONTAMINATED SITES - EVK1-CT-1999-00030 –

- **PEREBAR** - LONG-TERM PERFORMANCE OF PERMEABLE REACTIVE BARRIERS USED FOR THE REMEDIATION OF CONTAMINATED GROUNDWATER - EVK1-CT-1999-00035 - http://www.perebar.bam.de/

- **CRYSTECHSALIN** - CRYSTALLISATION TECHNOLOGIES FOR PREVENTION OF SALT WATER INTRUSION - EVK1-CT-2000-00055 –

- **SALTRANS** - METHODS FOR ASSESSING SALT INTRUSION AND TRANSPORT IN HETEROGENEOUS AND FRACTURED AQUIFERS - EVK1-CT-2000-00062 –

- **ALIANCE** - ADVANCE LOGGING INVESTIGATIONS OF AQUIFERS IN COASTAL ENVIRONMENTS - EVK1-CT-2001-00091 - http://www.isteem.univ-montp2.fr/LGHF/water/ALIANCE/

- B**OREMED** - BORON CONTAMINATION OF WATER RESOURCES IN THE MEDITERRANEAN REGION: DISTRIBUTION, SOURCES, SOCIAL IMPACT AND REMEDIATION - EVK1-CT-2000-00046 - http://boremed.brgm.fr/

- **BASELINE** - NATURAL BASELINE QUALITY IN EUROPEAN AQUIFERS: A BASIS FOR AQUIFER MANAGEMENT - EVK1-CT-1999-00006 - http://www.bgs.ac.uk/hydrogeology/baseline/europe/home.html

- **W-SAHARA** - STOCHASTIC ANALYSIS OF WELL HEAD PROTECTION AND RISK ASSESSMENT - EVK1-CT-1999-00041 - http://www.diiar.polimi.it/franz/EU-W-SAHaRA/

- **PEGASE** - PESTICIDES IN EUROPEAN GROUNDWATERS : DETAILED STUDY OF REPRESENTATIVE AQUIFERS AND SIMULATION OF POSSIBLE EVOLUTION SCENARIOS - EVK1-CT-1999-00028 - http://www.brgm.fr/pegase/

- **GOUVERNE** - GUIDELINES FOR THE ORGANISATION, USE AND VALIDATION OF INFORMATION SYSTEMS FOR EVALUATING AQUIFER RESOURCES AND NEEDS - EVK1-CT-1999-00043 –

WG Economic analysis

- **EMERGE** - EUROPEAN MOUNTAIN LAKE ECOSYSTEMS: REGIONALISATION, DIAGNOSTICS & SOCIO-ECONOMIC EVALUATION - EVK1-CT-1999-00032 - http://195.113.58.10/index.html

- **EVALUWET** - EUROPEAN VALUATION AND ASSESSMENT TOOLS SUPPORTING WETLAND ECOSYSTEM LEGISLATION - EVK1-CT-2000-00070 - http://www1.rhbnc.ac.uk/rhier/evaluweb/index.shtml

- **EUROCAT** - EUROPEAN CATCHMENTS: CATCHMENTS CHANGES AND THEIR IMPACT ON THE COAST - EVK1-CT-2000-00044 - http://www.iia-cnr.unical.it/EUROCAT/project.htm

- **FLOBAR-2** - FLOODPLAIN BIODIVERSITY AND RESTORATION 2: INTEGRATED NATURAL SCIENCE AND SOCIO-ECONOMIC APPROACHES TO CATCHMENT FLOW MANAGEMENT - EVK1-CT-1999-00031 - http://www.geog.cam.ac.uk/research/flood/FLOBAR2/Flobar2.html

- **DANUBS** - NUTRIENT MANAGEMENT IN THE DANUBE BASIN AND ITS IMPACT ON THE BLACK SEA - EVK1-CT-2000-00051 - http://danubs.tuwien.ac.at/

- **SLIM** - SOCIAL LEARNING FOR THE INTEGRATED MANAGEMENT AND SUSTAINABLE USE OF WATER AT CATCHMENT SCALE - EVK1-CT-2000-00064 - http://www.dialoguedesigns.co.uk/slim/page.cfm

- **ERMITE** - ENVIRONMENTAL REGULATION OF MINE WATERS IN THE EUROPEAN UNION - EVK1-CT-2000-00078 –

- **WADI** - THE SUSTAINABILITY OF EUROPEAN IRRIGATED AGRICULTURE UNDER WATER DIRECTIVE AND AGENDA 2000 - EVK1-CT-2000-00057 –

- **ADVISOR** - INTEGRATED EVALUATION FOR SUSTAINABLE RIVER BASIN GOVERNANCE - EVK1-CT-2000-00074 - http://gasa3.dcea.fct.unl.pt/ecoman/advisor/

- **COOPERATIVE AGREEMENTS**: AGRICULTURE AND WATER POLICY – ENV4-CT98-0782

WG Best practice in river basin planning

- **MANTRA-East** - INTEGRATED STRATEGIES FOR THE MANAGEMENT OF TRANSBOUNDARY WATERS ON THE EASTERN EUROPEAN FRINGE - THE PILOT STUDY OF LAKE PEIPSI AND ITS DRAINAGE BASIN - EVK1-CT-2000-00076 - http://www.mantraeast.org/

- **TISZA RIVER PROJECT** - THE TISZA RIVER PROJECT - REAL-LIFE SCALE INTEGRATED CATCHMENT MODELS FOR SUPPORTING WATER- AND ENVIRONMENTAL MANAGEMENT DECISIONS - EVK1-CT-2001-00099 –

- E**UROHARP** - TOWARDS HARMONISED PROCEDURES FOR QUANTIFICATION OF CATCHMENT SCALE NUTRIENT LOSSES FROM EUROPEAN CATCHMENTS - EVK1-CT-2001-00096 –

- **BMW** - BENCHMARK MODELS FOR THE WATER FRAMEFORK DIRECTIVE - EVK1-CT-2001-00093 –

- **HarmoniQuA** - HARMONISING QUALITY ASSURANCE IN MODEL BASED CATCHMENT AND RIVER BASIN MANAGEMENT - EVK1-CT-2001-00097 - http://www.info.wau.nl/harmoniqua/

- **HarmonIT** - IT FRAMEWORKS - EVK1-CT-2001-00090 –

- **RECOVER:2010** - PREDICTING RECOVERY IN ACIDIFIED FRESHWATERS BY THE YEAR 2010 AND BEYOND. - EVK1-CT-1999-00018 - http://www.mluri.sari.ac.uk/recover/recover2010.htm

- **INCA** - INTEGRATED NITROGEN MODEL FOR EUROPEAN CATCHMENTS - EVK1-CT-1999-00011 - http://www.rdg.ac.uk/~sgs98ajw/inca_publish/

- T**ARGET** - INTEGRATED ASSESSMENT TOOLS TO GAUGE LOCAL FUNCTIONAL STATUS WITHIN FRESHWATER ECOSYSTEMS - EVK1-CT-1999-00005 - http://bscw.bio.ua.pt:3000/

- **EUROLAKES** - INTEGRATED WATER RESOURCE MANAGEMENT FOR IMPORTANT DEEP EUROPEAN LAKES AND THEIR CATCHMENT AREAS - EVK1-CT-1999-00004 - http://pcs0.hydromod.de/Eurolakes/index.html

- **BUFFER** - KEY NUTRIENT TRANSPORT MECHANISMS IMPORTANT FOR THE PREDICTION OF NUTRIENT AND PHYTOPLANKTON CONCENTRATIONS IN EUROPEAN STANDING WATERS - EVK1-CT-1999-00019 –

- **AFFOREST** - AFFORESTATION MANAGEMENT IN NORTH-WESTERN EUROPE - INFLUENCE ON NITROGEN LEACHING, GROUNDWATER RECHARGE, AND CARBON SEQUESTRATION - EVK1-CT-1999-00020 - http://www.fsl.dk/afforest/

- **PAEQANN** - PREDICTING AQUATIC ECOSYSTEM QUALITY USING ARTIFICIAL NEURAL NETWORKS: IMPACT OF ENVIRONMENTAL CHARACTERISTICS ON THE STRUCTURE OF AQUATIC COMMUNITIES (ALGAE, BENTHIC AND FISH FAUNA). - EVK1-CT-1999-00026 - http://quercus.cemes.fr/~paeqann/

- **FLOBAR-2** - FLOODPLAIN BIODIVERSITY AND RESTORATION 2: INTEGRATED NATURAL SCIENCE AND SOCIO-ECONOMIC APPROACHES TO CATCHMENT FLOW MANAGEMENT - EVK1-CT-1999-00031 - http://www.geog.cam.ac.uk/research/flood/FLOBAR2/Flobar2.html

- **DANUBS** - NUTRIENT MANAGEMENT IN THE DANUBE BASIN AND ITS IMPACT ON THE BLACK SEA - EVK1-CT-2000-00051 - http://danubs.tuwien.ac.at/

- **STREAMES** - HUMAN EFFECTS ON NUTRIENT CYCLING IN FLUVIAL ECOSYSTEMS: DEVELOPMENT OF AN EXPERT SYSTEM TO ASSESS STREAM WATER QUALITY MANAGEMENT AT REACH SCALE. - EVK1-CT-2000-00081 - http://www.streames.org/

EAF Priority Substances

- **BIOSPEC** - SENSOR DEVELOPMENT FOR ROUTINE PREDICTION OF METAL BIOUPTAKE IN FRESHWATERS AND SOIL SOLUTIONS - EVK1-CT-2001-00086 - http://www.qub.ac.uk/biospec/biospec.html

- **BEAM** - BRIDGING EFFECT ASSESSMENT OF MIXTURES TO ECOSYSTEM SITUATIONS AND REGULATION - EVK1-CT-1999-00012 - http://www.aquatox.uni-bremen.de/beam/

- **MOE** - MERCURY SPECIES OVER EUROPE. RELATIVE IMPORTANCE OF DEPOSITIONAL METHYLMERCURY FLUXES TO VARIOUS ECOSYSTEMS -ENV4-CT97-0595

- **MAMCS** – MEDITERRANEAN ATMOSPHERIC MERCURY CYCLE SYSTEM - ENV4-CT97-0593 - http://www.iia-cnr.unical.it/mamcs.htm

- **GLOBAL-SOC** - GLOBAL MASS BALANCE OF PERSISTENT SEMI - VOLATILE ORGANIC COMPOUNDS: AN APPROACH WITH PCB AS AN INDICATOR - ENV4-CT97-0638 - http://www.itm.su.se/Ecotox/Axelman/Projects/Global-Soc/

- **MOLAR** (PARTLY) - MEASURING AND MODELLING THE DYNAMIC RESPONSE OF REMOTE MOUNTAIN LAKE ECOSYSTEMS TO ENVIRONMENTAL CHANGE. A PROGRAMME OF MOUNTAIN LAKE RESEARCH - ENV4-CT95-0007- http://www.mountain-lakes.org/molar/index.html

- **FAME** - FATE AND ACTIVITY MODELLING OF ENVIRONMENTAL POLLUTANTS USING STRUCTURE-ACTIVITY RELATIONSHIPS - ENV4-CT96-0221

- **DIAGNOSTIC ECOTOXICOLOGY**: CELL-BASED METHODOLOGY TO DEVELOP MARKERS FOR EARLY, SUBLETHAL EFFECTS ASSESSMENT - ENV4-CT96-0223

- ENVIRONMENTAL HALOGENATED AROMATIC HYDROCARBONS AND ESTROGENS: MECHANISMS OF ACTION, INTERACTIONS AND TEST-SYSTEM DEVELOPMENT - ENV4-CT96-0240

- MICROBENTHIC COMMUNITIES IN EUROPEAN RIVERS USED TO ASSESS EFFECTS OF LAND-DERIVED TOXICANTS - ENV4-CT96-0298

- **BIOMAR-II** - BIOLOGICAL MARKERS OF ENVIRONMENTAL CONTAMINATION IN MARINE ECOSYSTEMS (PHASE 2) - ENV4-CT96-0300

- **CYANOTOX** – STRATEGIES FOR EARLY WARNING: DETECTION AND MONITORING OF CYANOBACTERIA AND THEIR TOXINS IN FRESHWATER SYSTEMS FOR HUMAN USE – ENV4-CT-98-0802

- **PREDICT** – PREDICTION AND ASSESSMENT ODF THE AQUATIC TOXICITY OF MIXTURES OF CHEMICALS - ENV4-CT96-0319

- **COMET** - COMPOSITION OF DISSOLVED ORGANIC MATTER AND ITS INTERACTION WITH METALS AND ULTRAVIOLET RADIATION IN RIVER-OCEAN SYSTEMS: IMPACT ON THE MICROBIOLOGICAL FOODWEB. - EVK1-CT-1999-00034 –

- **COMPREHEND** – COMMUNITY PROGRAMME OF RESEARCH ON ENVIRONMENTAL HORMONES AND ENDOCRINE DISRUPTERS – ENV4-CT98-0798

- **ACE** - ANALYSING COMBINATION EFFECTS OF MIXTURES OF ESTROGENIC CHEMICALS IN MARINE AND FRESHWATER ORGANISMS - EVK1-CT-2001-00100 –

- **POPCYCLE-BALTIC** – ENVIRONMENTAL CYCLING OF SELECTED PERSISTENT ORGANIC POLLUTANTS (POPs) IN THE BALTIC REGION- ENV4-CT96-0214 - http://www.nilu.no/projects/baltic/

- **IDEA** - IDENTIFICATION OF ENDOCRINE DISRUPTING EFFECTS IN AQUATIC ORGANISMS - ENV4-CT97-0509

EEs-FISH REPRODUCTION – ENVIRONMENTAL ESTROGENS (EEs) AND THE NEURO-ENDOCRINE REGULATION OF REPRODUCTION OF FISH - ENV4-CT97-0567

- **EDAEP** - ENDOCRINE DISRUPTING ABILITY OF ENVIRONMENTAL POLLUTANTS - ENV4-CT97-0581 - http://endocrine.ei.jrc.it/edaep.html

- ENVIRONMENTAL HALOGENATED AROMATIC HYDROCARBONS AND ESTROGENS - ENV4-CT96-0240

- ASSESSMENT OF HUMAN RISK FOR ADVERSE EFFECTS OF ENDOCRINE ACTIVE ENVIRONMENTAL ORGANOHALOGEN CONTAMINANTS - ENV4-CT96-0170

- EFFECTS OF LIPOPHILIC PERSISTENT ORGANIC POLLUTANTS (POPS) ON THE REPRODUCTION OF EGG LAYING ORGANISMS - ENV4-CT97-0468

- COMPUTERISED MOLECULAR EVALUATION OF TOXICITY - ENV4-CT97-0508

- **P-THREE** - REMOVAL OF PERSISTENT POLAR POLUTANTS THROUGH IMPROVED TREATMENT OF WASTEWATER EFFLUENTS – EVK1-CT-2002-00116 (in negotiation)

- **CADOX** - A COUPLED ADVANCED OXIDATION-BIOLOGICAL PROCESS FOR RECYCLING OF INDUSTRIAL WASTE WATERS CONTAINING PERSISTENT ORGANIC CONTAMINANTS – EVK1-CT-2002-00122 (in negotiation)

The PHARMA Cluster:

- **ERAVMIS** - ENVIRONMENTAL RISK ASSESSMENT OF VETERINARY MEDICINES IN SLUDGE - EVK1-CT-1999-00003 –

- **REMPHARMAWATER** - ECOTOXICOLOGICAL ASSESSMENTS AND REMOVAL TECHNOLOGIES FOR PHARMACEUTICALS IN WASTEWATERS - EVK1-CT-2000-00048 - http://cds.unina.it/~rmarotta/

- **POSEIDON** - ASSESSMENT OF TECHNOLOGIES FOR THE REMOVAL OF PHARMACEUTICALS AND PERSONAL CARE PRODUCTS IN SEWAGE AND DRINKING WATER FACILITIES TO IMPROVE THE INDIRECT POTABLE WATER REUSE - EVK1-CT-2000-00047 - http://www.eu-poseidon.com

PART 3 – TABLE LISTING POTENTIAL CONTACT POINTS FOR WGs and EAFs

Working Group	RTD Project/Cluster	Contact person	e-mail
Pressures and Impacts	EUROCAT	Wim Salomons	wim.salomons@home.nl
Reference Conditions	WFD Ecological Quality Assessment Cluster/STAR	Michael Furse	mtf@ceh.ac.uk
Typology for classification of trans.+coastal w.	WFD Ecological Quality Assessment Cluster/STAR	Michael Furse	mtf@ceh.ac.uk
Heavily modified water bodies	CITYFISH	Edwin Taylor	E.W.Taylor@bham.ac.uk
GIS	CATCHMOD/HarmoniCA	Wim de Lange	W.dLange@riza.rws.minvenw.nl
Intercalibration	WFD Ecological Quality Assessment Cluster/STAR	Michael Furse	mtf@ceh.ac.uk
Monitoring	WFD Ecological Quality Assessment Cluster/STAR	Michael Furse	mtf@ceh.ac.uk
Economic analysis			
Assessment and classification of groundwater	BASELINE	Michael Edmunds	wme@bgs.ac.uk
Best practices in river basin planning	CATCHMOD/HarmoniCA	Wim de Lange	W.dLange@riza.rws.minvenw.nl
Integrated testing in pilot river basins	HarmoniRiB	Jens Christian Refsgaard	jcr@geus.dk
EAF Groundwater	BASELINE W-SAHARA PEGASE	Michael Edmunds Alberto Guadagnini Christophe Mouvet	wme@bgs.ac.uk alberto.guadagnini@polimi.it c.mouvet@brgm.fr
EAF Priority Substances	BEAM BIOSPEC ENDO Cluster PHARMA Cluster	Horst Grimme Raewyn Town Andreas Kortenkamp Thomas Ternes	Grimme@biology.uni-bremen.de r.town@qub.ac.uk andreas.kortenkamp@ams1.ulsop.ac.uk thomas.ternes@stadtwerke-wiesbaden.de

Other Clusters relevant for the implementation of the WFD are the following:

1. TRANSBOUNDARY

This small inofficial cluster puts together two projects, dealing with the management of transboundary waters, namely the MANTRA-EAST and the TRANSCAT projects.

The contact person is the co-ordinator of MANTRA-EAST, Dr. Per Stalnacke at Jordforsk (NO).

2. **ARID** (Management of water in ARID areas)

This cluster provides co-ordination among three projects which deal with the management of water under arid conditions, namely the projects AQUADAPT, WaterStrategyMan and MEDIS.

The contact person is Dr. Phoebe Koundouri at London University (UK).

A cluster agreement has been made, and we are informed of an accompanying measure being submitted to the Commission.

3. **CITY-NET** (Integrated Urban Water Management)

The cluster is being constituted among a group of projects dealing with urban water management, particularly dealing with the management of complex water and sewage grids, the management of stormwater, the integrated management of water, in order to reduce the impact of combined sewer overflows and other subjects related to urban water management.

The projects are: APUSS, CARE-W, CARE-S, AISUWRS, CD4WC and DAYWATER.

A cluster agreement has been established among the above projects. Moreover, an accompanying measure on this cluster is in preparation.

The contact person is Prof. W. Schilling at Trondheim University (NO).

4. **ENDO** (ENDOcrine disrupters)

Constituted after the conclusion of the joint call between the Environment and the Quality of Life programmes, it is constituted by the projects EDEN, FIRE, COMPRENDO and EURISKED, but is planned to be extended to other on-going projects, like ACE.

Its objective is to become the centre of co-ordination and synthesis of European research on endocrine disrupters.

The cluster co-ordinator is the co-ordinator of EDEN, Andreas Kortenkamp at the University of London (UK).

5. **FLOOD** (FLOOD forecasting)

This cluster will group together eight projects on flood forecasting which belong to the Water Key Action (MUSIC, MANTISSA and FLOODRELIEF) and to the generic activities on flood control. The cluster will for the time being work under the co-ordination of the concerted action MITCH, but an accompanying measure is under preparation.

6. **SEDNET** (European Sediment Research Network)

This thematic network is providing a platform where organisations responsible for the sustainable management of river basin/fresh water body related sediments and dredged material can meet and communicate with organisations, which help to provide solutions. It is providing a clustering activity towards all EU and national projects dealing with the subject.

It is co-ordinated by Dr. Jos Brils of TNO (NL).

7. **ELOISE** (European Land-Ocean Interaction Studies)

This very large cluster is putting together the activities of more than 30 EU-funded projects dealing with the processes at the land-ocean boundary and the impacts of material loads from river basins on the coastal zones around Europe. Since four years, ELOISE organises an annual science conference and other co-ordination activities. Managed through an agreement with the JRC/Ispra which expired in the year 2000, it has been recently subject to an open market competition for setting-up a new

secretariat for one year, renewable for a second year. The procedure is on-going in order to start the new secretariat from this summer.