

## Summary of Project Indicators

In the period September 2009 - September 2010, **two water quality monitoring plans** were designed and implemented for the two regional companies involved in the project: SC ECOAQUA SA Calarasi and SC Public Utilities Company "Danube" SA Braila. During 1 year, **13 DWTP were monitored** - sampling and analysis were performed monthly to ensure an efficient control of water quality from catching, on technological treatment flow, from outflow and stock reservoirs of DWTPs and also, along distribution networks, to final consumers (schools, high schools, school residences, hospitals, train stations, local public authorities buildings – town halls, police, councils, fireman's, bakers, restaurants, camping's, carburant distribution stations, magazines, markets, particular residence). **Over 1400 samples were collected from 185 control points and about 110.000 physical – chemical and bacteriological analyses** were performed in the laboratories of INCD-ECOIND Bucharest, using accredited ISO / EN standard methods, modern equipments and applying suitable quality control measures, in conformity with ISO/CEI 17025:2005 requirements.

The monitoring plans were established taking into account the indicators imposed by the Romanian legislation (*Quality norms for surface water used for potabilisation and Drinking Water Law*) and also the EU Directive 98/83/EC – 108 physical-chemical and microbiological parameters were monitored.



Throughout the project implementation were also achieved:

- **Sampling Guideline** according to European Drinking Water Directive was elaborated for each of the selected water suppliers, which included: the control points; frequency of sampling (according with an established program); selection procedure of sampling points from distribution network and critical points at consumers; routine and periodical monitoring parameters; statistical analysis of collected data concerning water quality registered for a long period (for example 1 year);
- **Training courses** were organized by Promoter with personnel (chemists/engineers, biologists /microbiologists, technicians) from drinking water laboratories and technical personnel responsible with the treatment process, from both regional companies involved in project. Main objectives were to transmit relevant information and knowledge about the correct way of operation in analytical and microbiological control of drinking water and also about the quality control measures to be taken for ensuring the accuracy and quality of the analytical results.

The scope of the training courses was to improve /develop the knowledge, know-how and professional capacity of the participants and also, to change experience between participants and trainers for a better understanding of the problems;

- **Work visits** between project partners for changing experience, in order to develop / implement new methods for control of applied treatment efficiency and potable water quality (generally, from the biological/ bacteriological point of view).

In the Norwegian partner Laboratory were developed **10 new analysis methods** (such as: *fractioning of the natural organic matter - NOM determination; the regrowth potential as biodegradable organic matter- BDOC determination; determination of suspended solids with a fouling potential for membranes and particle size distribution; flow cytometric AOC determination; parasites Giardia and Cryptosporidium sampling and determination, etc.*) to ensure a complex evaluation of raw water and treated water samples, to control the efficiency of treatment processes and to provide additional information on the concentrations of organic matter and microbiological load of Danube water used as raw water. Based on the results obtained after monitoring program implementation, the treatment processes efficiencies were evaluated for each monitored DWTP and were identified: the characteristics of raw water sources and noncompliance on quality of water at the outlet of DWTPs and on Distribution network (final consumers). Depending on the quality of raw water sources (Danube river and Groundwater - medium and deep wells), **the possible technical causes which can negatively influence drinking water quality have estimated (2 inventories) and two different plans were developed to upgrade / optimize the water treatment processes and improve the quality of water intended for human consumption.** Also, were proposed: guidelines regarding optimization of water sampling and analysis procedures; solutions to increase of maintenance and control of distribution network; recommendations to protect human health from the adverse effects of any contamination of drinking water.

**Scientific papers and different promotional materials** were developed to disseminate important and relevant results concerning: technological treatment flow applied in DWTP located in S-E part of Romania and the performance of these systems; quality of drinking water supplied to consumers from Calarasi and Braila counties and solutions / recommendations to improve the control of water quality and to increase the efficiency of treatment processes.

**A final workshop** was organized on 12 April at Public Utilities Company "Danube" Braila and all significant project results (including: inventories of drinking water noncompliance and causes which can negatively influence drinking water quality; plans for upgrading the water technological treatment; plans for maintenance and control of distribution network and strategies for improved drinking water supply) were transferred to the beneficiaries without supplementary costs.



Also, the project contributes to the improvement of the public access to information - **the project results are published on the website ([www.incdecoind.ro](http://www.incdecoind.ro))**, as well in different promotional materials containing the guidelines to be used by the bodies involved in water treatment and distribution. On the indicated webpage are presented important indicators achieved during project implementation and also, information on scientific results dissemination within national / international conferences / symposia.