IMPLEMENTATION PLAN

for

DIRECTIVE 98/83/EC

on the quality of water intended for human consumption

October 2004

CONTENT

ABBREVIATIONS

ANRSC	National Authority for Public Services of Communal Management
EC	European Community
EEC	European Economic Community
EU	European Union
ICIM Bucharest	National Institute of Research and Development for Environment Protection
MAI	Ministry of Administration and Interior
MEWM	Ministry of Environment and Water Management
MH	Ministry of Health
NACP	National Authority for Consumers Protection
CNCAN	National Commission for the Control of Nuclear Activities
PHD	Public Health Directorate (local public health authorities)
PHI	Public Health Institute

I. Responsibilities

Responsible for the transposition:	Ministry of Health (MH)
Purpose of activities:	Promoting legislative measures for public health protection, establishing the requirements for drinking water, inspection of the drinking water supply systems, surveillance and monitoring of the drinking water quality, public advising and dissemination of information, reporting.
Co-operating Ministries:	Ministry of Environment and Water Management (MEWM), Ministry of Administration and Interior (MAI)
Responsibilities for the implementation	Ministry of Health sets up the schedule and assesses the cost for the audit monitoring; Ministry of Administration and Interior (MAI) centralises the compliance plans, monitors and controls their implementation; Ministry of Environment and Water Management (MEWM**)** draws up the plan and the schedule for compliance of the monitoring activities for the quality of surface water; Ministry of Agriculture, Forests and Rural Development draws up the plan and the schedule for compliance of the food industry producers; Water producers and suppliers ensure the water supply, compliance with the standards, check monitoring and financially support the audit monitoring; Building owners are responsible for the quality of domestic distribution networks; Producers of bottled water monitor and ensure the quality of the product.
Purpose of activities:	Initiate and apply all necessary measures in order to ensure the drinking water supply according to the provisions of the Directive
Transition period:	phased transition periods, until 31 December 2015 at the latest

II. Main objectives of the Directive

- to protect human health from the adverse effects of any contamination of water intended for human consumption
- to ensure that water intended for human consumption is wholesome and clean

III. Plan for meeting the requirements of the Directive

A. Main requirements of the Directive

1. The obligation to establish quality parameters for water intended for human consumption and to set up values for the relevant parameters (Articles 2-5);
2. The obligation to determine those points (places) of compliance (Article 6), where water quality will be required to meet the parametric values set up in accordance with Article 5;
3. The obligation to ensure regular, country-wide monitoring of the water quality intended for human consumption (Article 7) and the adequate and up-to-date information of consumers (Article 13), including regular publication of reports and their submission to the Commission;
4. The obligation to ensure that all necessary remedial actions are taken in order to restore the quality of the water which does not meet the quality parametric values, to prohibit the use of water whose quality constitutes a potential danger to human health, to provide possible (not mandatory) derogation under the Directive's provisions and to inform the consumers (Articles 8, 3, 9 and 13);
5. The obligation to ensure that substances or materials used in the preparation or distribution of water intended for human consumption will not reduce the protection of human health (Article 10);
6. Horizontal requirements:

6.1. **Responsibilities:**

Ministry of Health (MH) –supervises (sanitary authorisation and temporary authorisation during the derogation – Article 9 of Law no. 311/2004, sanitary inspection) and controls the monitoring of water quality carried out by the producer and/or supplier (Art. 7, Law no 311/2004). The MH also controls the quality of water used in the food industry by the water producers, the quality of bottled water; according to the Order of the Minister of Health no. 117/2002, approves, from a sanitary point of view, the products and materials coming on contact with water, ensures the audit monitoring, information and reporting to the European Commission;

Ministry of Environment and Water Management (MEWM) - ensures the protection of groundwater and surface water, of water resources and the monitoring of source water;

Ministry of Agriculture, Forests and Rural Development (MAFRD) – ensures the centralisation of the compliance plans for water used in the food industry;

Ministry of Administration and Interior - centralises the compliance plans, monitors and controls their implementation;

National Commission for Nuclear Activities Control and MH – lay down the radioactivity parameters, the sample points for the monitoring of radioactivity parameters;

National Authority for Public Services of Communal Management – issues the operating licence, which includes the requirement of drawing up the compliance plan.

Local Public Authorities, producers and suppliers:

- Ensure the compliance with the provisions of the Directive;
- Take the necessary measures for setting up proper monitoring of drinking water quality (Chapter 2 Article 7, Law no 458/2002, amended by Law no. 311/2004);
- Take the necessary remedial actions to restore the quality of water in case of non-compliance with the parametric values, or apply restrictive measures;
- Provide the necessary data for the elaboration of the National Report on drinking water quality (Chapter 7 Article 11 (4), Law no. 458/2002, amended by Law no.311/2004);
- Record and keep the data on drinking water quality (Chapter 7 Article 11 (5), Law no. 458/2002, amended by Law no.311/2004);
- Allow the population access to the water quality data (Chapter 7 Article 11 (6), Law no. 458/2002);
- Draw up, together with the local public health authority, "the annual county report on drinking water quality" (Chapter 7 Article 11 Law no. 458/2002, amended by Law no.311/2004).

6.2. Representation of Romania in the Scientific Committee (with representatives from all Member States (MS))- MH;

6.3 Reporting – MH;

6.4 Implementation- Drinking water suppliers, MEWM, MAI, MH.

B. Plan for the implementation of the requirements

1. Obligation to establish water quality parameters for the water intended for human consumption and to set up values for the relevant parameters (Articles 2-5)

a) Summary of objectives

Water intended for human consumption is any kind of water, either in its original state or after treatment, intended for drinking, cooking, food preparation or other domestic purposes, irrespective of its origin and the way of its distribution (distribution network, tankers or for other domestic purposes), or if it is placed on the market in bottles or in other kinds of recipients; any kind of water used as a source in food-production, undertaken in the manufacturing, processing, preservation or placing on the market of products and substances intended for human consumption, unless the competent national authority (MH) approves the use of water. The use of water cannot affect the quality and the wholesomeness of the foodstuff in its final form.

The Directive requires that the water should be free from any micro-organisms and substances which, in number or concentrations constitute a potential danger to human health. The minimum requirements in terms of water quality parameters and their limits are set out in Annex I, Parts A and B. The measures taken to implement the Directive must not, under any circumstances, allow, directly or indirectly, any deterioration of the present quality of water. Additional parameters, not included in Annex I, can be specified where the protection of human health so requires (additional parameters can be set up by MH).

b) Identification of implementation steps

- The definition of drinking water provided by Law no. 458/2002 (amended by Law no. 311/2004) on drinking water quality complies with the Directive's provisions. The Law sets forth the responsibilities of producers and suppliers of drinking water, the quality parameters and their limit values. According to the Law, MH is allowed to adopt other relevant parameters if it is necessary to protect human health. The Law contains all parameters and their limit values as specified in the Directive, in Annex I, Parts A, B and C. Following the bilateral informal discussions with the European Commission, Law no. 458/2002 contains a higher number of parameters than the Directive. The parameters have been classified in accordance with the Directive. The analysis methods must comply with the requirements of Annex III.
- The requirement of Article 2(1b) was introduced by Law no. 458/2002. It specifies that only drinking water complying with the Directive requirements shall be used in production, processing or preservation of food-products.

Responsibility: MH
Deadline: accomplished

- The radioactivity parameters for the drinking water are set up by Law no. 458/2002; in order to ensure the protection against radiation, the details for sampling points are set up by the Ministry of Health in co-operation with the National Commission for Nuclear Activity Control (CNCAN), through the norms for sanitary surveillance and monitoring of quality of drinking water.

Responsibility: MH, CNCAN;
Deadline: December 2003 - accomplished

- The requirements for quality of drinking water marketed in bottles, containers or other recipients are set by Law no. 458/2002 according to Annex 1, Part A1, B, C. The number of samples and the frequency of the monitoring are set up by Annex II. MH has elaborated the monitoring methodology for the bottling systems of drinking water.

Responsibility: MH
Deadline: December 2003 - accomplished

- The Directive sets forth certain parameters for the quality of drinking water (Clostridium perfringens, antimonium, boron, bromides, acrylamide, benz(a)pyren, vinil chloride, epyclorhidrine, tetrachlorethene and trichlorethene), which were not previously provided by the Romanian Standard 1342/1991, on drinking water quality (effective until Law no. 458/2002 entered into force). Information concerning the occurrence of these indicators in the drinking water is not currently available. Therefore, it will be necessary to make technical endowments (in terms of equipment and personnel) for the monitoring of these parameters and to subsequently gather sufficient data for determining their occurrence in drinking water. The monitoring in accordance with Annex II to the Directive will be gradually accomplished, until the end of December 2005.

Responsibility: MH, PHD, PHI
Deadline: December 2005

In comparison with the former Romanian Standard 1342/1991 on drinking water quality, the Directive sets more stringent limits for some parameters (e.i. the limits for lead, oxidability, turbidity). For large water supply systems from big cities, the average non-compliance rate with the limits is in the range of a few percent. The parameters monitored in the last few years are limited to microbiological parameters, which may cause epidemiological risks for public health. The results of monitoring the water quality in urban environment showed a frequency of non-complying parameters of 3% for total coliforms, 1% for faecal coliforms, 4% for toxic substances, 5% for turbidity, 2% for heavy metals.

2. Obligation to determine points of compliance (Article 6) at which water quality will be required to meet the parametric values set in accordance with Article 5

a) Summary of objectives

- In case of distribution of water used for human consumption, the water should comply with the parametric values at the point where it emerges from the taps and at the point where it enters into the building. In case of water supplied from tankers, this has to comply with the standardised quality parameters from those points where the water emerges from the reservoir. The bottled drinking water put on the market has to comply with the quality parameters standardised in the bottling point. The water used in food-processing industry has to comply at the point where enters the production process. In case of water supplied by a distribution network, the obligations of the producer and/or the distributor shall be considered fulfilled (in accordance with Annex I and Article 5) if non-compliance with the parametric values (in accordance with Article 5), due to the domestic distribution system or the maintenance thereof, with the exception of water distributed to premises and establishments such as schools, hospitals, socio-cultural institutions, can be established.

b) Identification of implementation steps

- The requirements of Article 6 are transposed by Law no. 458/2002 (amended by Law no. 311/2004) and implemented by the application of the Norms for sanitary surveillance, inspection and monitoring of drinking water quality, approved by GD no. 974/2004.

Responsibility: MH
Deadline: June 2004 - accomplished

- According to the existing legislation, the responsibility of the supplier to meet drinking water quality standards ends at the consumer's house connection (main stopcock). The building owner is responsible for the internal system quality.
- The provisions of the new legislation establish the most relevant locations for sampling in order to comply with the requirements of the Directive. It is intended that the monitoring be realised by both the water supply companies and public health authorities at the exit of the treatment plant, at the point where the water emerges from the storage tanker and at the point where it emerges from the consumer's tap.

Responsibility: water producers and suppliers, MH through the PHD, owners
Deadline: 2005

3. Obligation to ensure regular, countrywide monitoring of the quality of water intended for human consumption (Article 7) and adequate and updated information of consumers (Article 13), including regular publication of reports, as well as their submission to the Commission

a) Summary of objectives

- Monitoring programmes are required in order to check that water intended for human consumption meets the requirements of the Directive. The Annexes to the Directive specify the extent and minimum frequency of the sampling and analysis. The Directive establishes the audit and the monitoring programmes. Their purpose is to provide regular information on the organoleptic and microbiological quality of the produced and distributed drinking water, on the efficiency of the treatment technologies, focusing on the disinfections technology, in order to determine whether or not the drinking water quality observe all the parametric values of the Directive. The number of samples required is related to the volume of water distributed or produced or to the population number. The Directive specifies the requirements for the sampling and monitoring methods. The Member States must ensure that information on the quality of water is available to consumers, and all individual water supply systems exceeding 1 000 m^3 a day as an average, or serving more than 5 000 persons must be included into reports to be published every three years and submitted to the Commission.

b) Identification of implementation steps

- The responsibilities of checking the quality of drinking water during its production and distribution are set forth by Law no. 458/2002, on drinking water quality (amended by Law no. 311/2004). More detailed requirements for the monitoring of drinking water quality, sample numbers and annual parameters for analysis, and methods to be used for the assessment and reporting are set forth in GD no. 974/2004 on sanitary surveillance, inspection and monitoring of the quality of drinking water.

Responsibility: MH
Deadline: June 2004 - accomplished

- Drinking water monitoring covers all localities in Romania, but the number of analysed parameters is limited in many localities.
  There are some localities (e.g. Targu Mures, Bucharest, Timisoara) where most of the parameters are controlled by the drinking water plants laboratories.
  Laboratories of the health authorities carry out drinking water quality monitoring in all urban localities and for all public wells in rural areas. Within the framework of the enforced monitoring programme, data are collected from the public health authorities for the entire country. For the rural area, data are available only at county level.

  The monitoring programme was initiated in 1984 and modified in 1990. The methodology for monitoring was set up for the first time in 1987 and revised in 1996 by Order of the Minister of Health no. 1193/1996. The number and the frequency of samples are calculated based on the number of supplied population, and the monitoring scheme is in accordance with the WHO recommendations of 1994. The monitoring frequency varies from 1 sample/month for systems supplying less than 5 000 persons, to daily samples for systems supplying up to 100 000 persons. Public wells are monitored once or twice a year.

  The Annual Report on drinking water quality for 2003, elaborated by the Bucharest Public Health Institute on the basis of the data collected from all 42 county Public Health

Directorates includes information regarding: the length of the distribution networks, the chemical and bacteriological quality at the point where the water emerges from the treatment plant and/or within the distribution network in rural area (258 urban localities). The samples from consumers are taken mostly from public units.

The setting up of a monitoring system and a reference laboratory and 4 regional laboratories to analyse drinking water is ongoing, starting with September 2004, within the PHARE project (Project RO-2002/000-586.04.13) "Strengthening the institutional and administrative capacity of the MH and its subordinated structures in view of implementing provisions of the Directive".

GD no. 974/2004 entered into force in July 2004 and requires a monitoring programme, according to the Directive. The monitoring will be gradually carried out by December 2005.

Responsibility: MH, Institute of Public Health of Bucharest, local public health authorities, water producers
Deadline: December 2005

o Informing and reporting on drinking water quality

According to the Order of the Minister of Health no. 798/2003, the Public Health Institute in Bucharest elaborates an annual report on drinking water quality in urban localities, which is published within three months after the end of the previous year.

The consumer is informed according to the provisions of Law no. 458/2002, amended by the Law no.311/2004 and of GD no. 974/2004.

After the date of accession, Romania will report to the Commission, in compliance with Articles 12 and 13 of the Directive.

Within the PHARE project (Project RO-2002/000-586.04.13), a reporting exercise, including data availability and information flows, will be carried out.

Responsibility: MH, MEWM
Deadline: December 2008

4. Remedial actions taken in order to restore quality of water which does not meet the quality parametric values, prohibition of use of water which constitutes a potential danger to human health and consumers information (Articles 8 and 9)

a) Summary of objectives

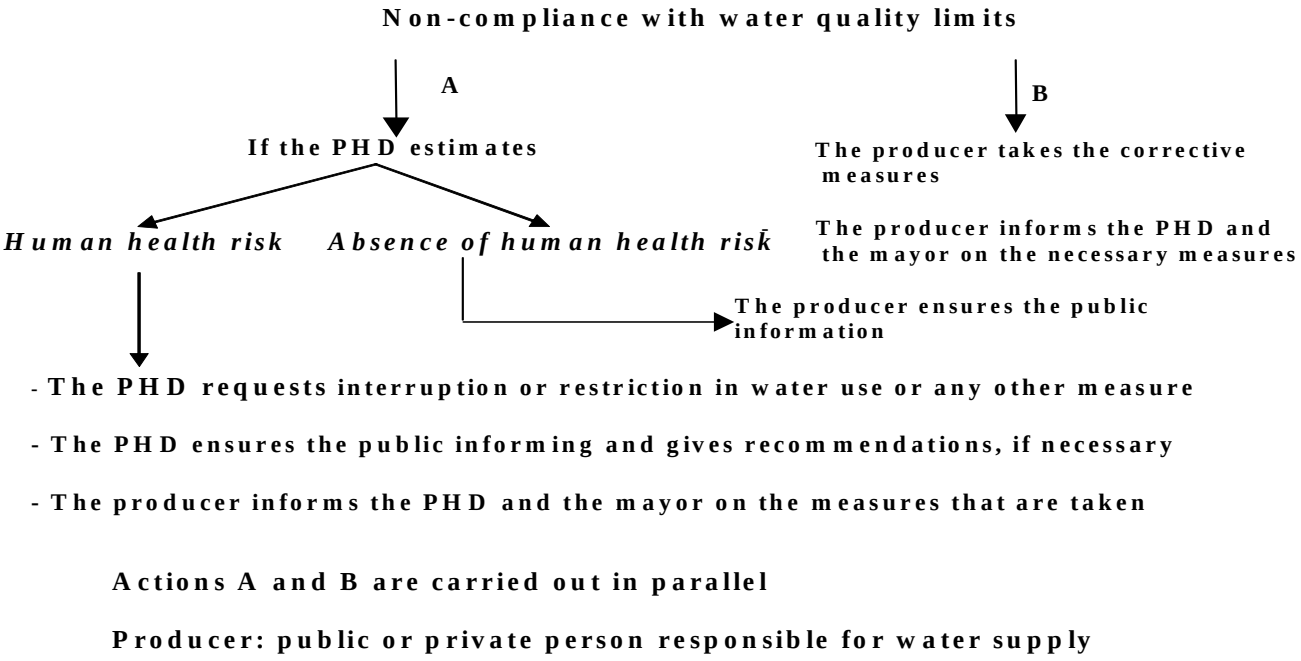
The Directive requires the Member States to ensure the necessary remedial actions to be taken for restoring the quality of water not meeting the quality parametric values, or to prohibit the use of water representing a potential danger to human health. Under the conditions specified in the Directive, the Member States may provide derogation from the parametric values (maximum 3 successive derogations, each one not exceeding three years). If the non-compliance with the parametric value is trivial and if the action taken is sufficient to remedy the problem within 30 days, the requirements concerning the derogation will be applied. In the event of non-compliance with the values set out in Annex 1, Part C, it is required to consider whether that non-compliance poses any risk to human health. Additional measures to ensure that the

population affected is informed and that relevant advice is given will be accordingly taken. For granting a second derogation, the Member State shall communicate a review to the Commission. A third derogation can be required in exceptional circumstances.

b) Identification of implementation steps

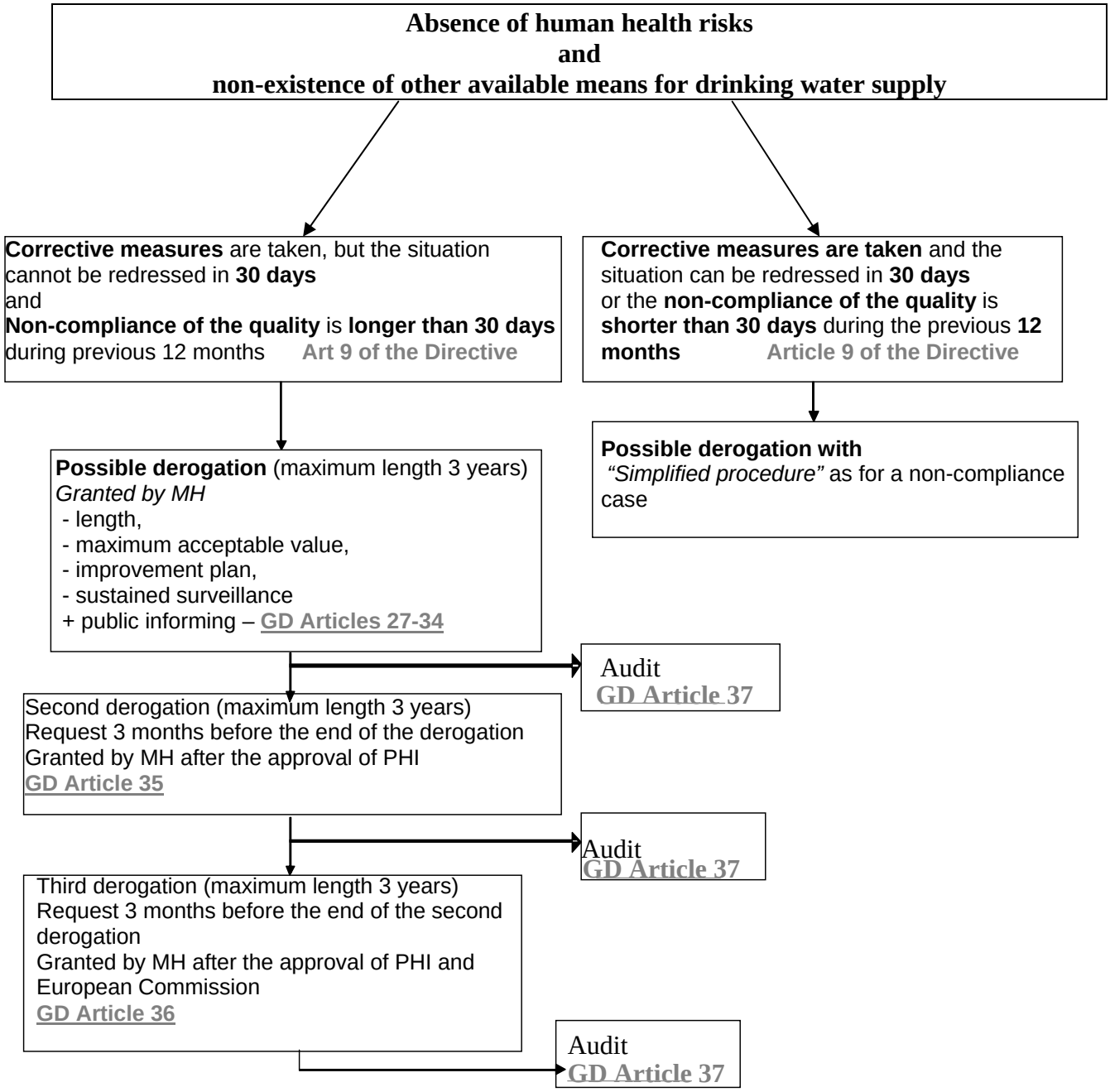
The obligations of water supply companies and public health authorities to carry out relevant monitoring of drinking water quality, including the adoption of the necessary remedial actions, and the provision concerning the information of the public, are specified in Law no. 458/2002 on drinking water quality (amended by Law no. 311/2004), which transposes art. 7, 8 and 9 of the Directive and in Articles 26 – 37 of GD no. 974/2004.
The above-mentioned requirements are provided for in the existing legislation, Law no. 458/2002 on drinking water quality (amended by Law no. 311/2004) and GD no. 974/2004, according to the scheme below:

Scheme containing the procedures in case of non-compliance



Responsibility: MH, local public health authorities
Deadline: starting with August 2004

Scheme of the possible derogation procedures



Responsibility: MH, local authorities, drinking water producers, public health institutes
Deadline: 2005

5. Obligation to ensure that substances or materials used in the preparation or distribution of water intended for human consumption will not reduce the protection of human health (Article 10)

a) Summary of objectives

Member States shall take all necessary measures to ensure that no substances or materials for new installations used in the preparation or distribution of water intended for human consumption remain in the water in concentrations higher than it is necessary for the purpose of their use and do not reduce the protection of human health.

b) Identification of implementation steps

- The requirements for products coming into contact with drinking water are specified by Law no. 458/2002 on drinking water quality (amended by Law no. 311/2004) and by Order of the Minister of Health and Family no. 117/2002 (in force since 18.04.2002) specifying that the sanitary permit for all materials and substances coming into contact with drinking water is mandatory.

Responsibility: MH
Deadline: accomplished

- According to Order of the Minister of Health and Family no. 117/2002, commissions for licensing sanitary permits were set up within the Public Health Institutes from Bucharest, Cluj, Iasi, Timisoara, dealing with first time imported products, or with domestic new products, including materials and chemical compounds coming into contact with drinking water.
  This permit is issued on the basis of a product file, which has to contain documentation concerning the testing of the materials in their country of origin, according to Community requirements. The tests to be completed must not reveal any change in the water quality. The products listed by accepted international organisations are admissible.
  For Romanian products, the tests are made by Public Health Institutes laboratories or other laboratories accredited for such tests. Public health authorities are authorised to carry out inspections to ensure that these requirements are met.

Responsibility: MH, PHI, PHD
Deadline: permanently

6. Horizontal requirements

6.1 Responsibilities of Ministries for the implementation of the Directive

- MEWM will ensure the co-ordination of the implementation of the Directive.

- MH, as the institution responsible for public health protection, undertakes the monitoring of the drinking water quality. Its responsibilities include: authorisation and inspection of drinking water suppliers, including those from the food industry, assessment of the risk on human health, and restriction of the consumption. Public health authorities are responsible

for adequate information of the public, including the measures for public health protection in case of non-compliance.

- The producers and suppliers have to take measures to comply with the Directive requirements regarding the quality of drinking water, to monitor and to inform the consumers, the local public health authorities and local administrative authorities.

- Local public authorities are responsible for ensuring the conditions so that the public services comply with the national legal provisions transposing the Directive.

- MAI centralises the plans of compliance and controls their implementation.

a) Transposition

- The requirements of the Directive involving other ministries are established by Law 458/2002 on drinking water quality (amended by Law no. 311/2004). The Law amends the drinking water quality standard and repeals the Order of the Minister of Health no. 1193/1996 on the methodological norms for surveillance and control of drinking water supply by public systems. GD no. 974/2004 and MO no. 273/2004 regarding the sanitation norms for bottled water, other than mineral water, were adopted.

  MAI elaborated the secondary legislation on the organisation and functioning of the public water supply and sewage services. This legislation sets up the responsibilities of the service operators, as well as of the users of centralised systems, regarding the system exploitation, maintenance and modernisation, the quality of water supply and the quality of the public services. Also, subsequent regulation adopted by the Agency for the National Authority for Public Services of Communal Management defines the performance indicators and the quality parameters the operators have to comply with in order to obtain their licence. The assessment of the public services operators for licensing started in 2003 and also includes the plan of compliance with the legal provisions that transpose the Directive.

Responsibility: MH, MAI, MEWM, ANRSC
Deadline: permanently

b) Identification of implementation steps

- The implementation will be carried out within the framework of competence and activities of the institutions and organisations of the relevant ministries, according to Law no. 458/2002 (amended by Law no. 311/2004).

Responsibility: local administrative authorities, producers and distributors, MH, MAI, MEWM
Deadline: permanently

6. 2 Representation of Romania in the Consultative Committee

- Articles 11 and 12 of the Directive specify the procedures for reviewing the Annexes to the Directive and the relevant actions to be taken by the Commission and the Consultative Committee. The Committee is composed of representatives of the Member States and chaired by a Commission representative. Romania must be represented in the Committee.
  The articles were adopted as such by Law no. 458/2002.

The Hygiene Commission of MH can make proposals to modify the Annexes.

Responsibility: MH, MEWM
Deadline: 2007

6.3 Information and reporting (Article 13)

- Article 13 of the Directive imposes the obligation of the Member States to ensure that information on the quality of water and on the measures taken for the implementation of the Directive is available to consumers. Information on all domestic water supply systems exceeding 1 000 m^3 per day as an average or serving more than 5 000 persons must be included in reports to be published every three years and submitted to the Commission.

  The first report shall cover the years 2005, 2006 and 2007. Romania will report to the Commission in compliance with Articles 12 and 13 of Directive and the report will be sent to the Commission.

  In order to meet these requirements, an exercise for collecting and analysing the data and for elaboration of the future report will be developed within the PHARE Project RO 2002/000-586.04.13 on strengthening the institutional capacity for the harmonisation and implementation of the water legislation.

Responsibility: MH, water producers
Deadline: every 3 years, the first report at the end of 2008

IV. Requirements by the date of accession

- Transposition of the Directive into national legislation - accomplished;

- Monitoring the quality of drinking water:
  - completed by December 2005;

- Meeting the parametric values set forth in Annex I, Parts A and B - excepting those for which transition periods were obtained;

- Implementation and compliance with the Compliance Plans;

- Elaboration of the report covering a period of three years: 2008

V. Present status

1. Monitoring

According to Law no. 458/2002 (amended by Law no. 311/2004), *the values currently in use* for drinking water quality parameters are the same as those provided by the Directive.

The list of parameters monitored by the transposition of the Directive and currently in use, are focused mainly on the significant bacteriological risks regarding public health and includes the following parameters:

1. Total Coliforms
2. Faecal Coliforms
3. Faecal Streptococci
4. Free residual chlorine
5. Taste
6. Colour
7. Odour
8. Turbidity
9. Total hardness
10. Oxidability
11. Ammonium
12. Nitrates
13. Nitrites
14. Iron
15. Sulphide Hydrogen (from the source)
16. Aluminium (were used in the treatment process);

as well as - for a restricted area and with a limited frequency:

- Lead
- Pesticides
- Trihalomethans

The monitoring program that has been applied before the coming into force of Law no. 458/2002, as well as at present, is set up as follows**:**

No. of supplied population	Frequency	Minimum no. of monthly samples
<5,000	monthly	one
>5,000-100,000	5 days	1 sample for 5,000 people
>100,000	daily	1 sample/10,000 people +10 additional samples

The monitoring results, according to Order of the Minister of Health no. 768/2000, are centralised by the Public Health Institute of Bucharest. On the basis of this MO, an annual national report on the quality of drinking water in the urban localities is elaborated. According to the last report elaborated on the basis of data collected for the year 2003, regarding 258 urban localities:

- 65% out of the total population is supplied with water by a public system, out of which 90 % in urban area and 33% in rural area;
- Out of the total samples taken and analysed for a one year period, the non-compliance percentage is as follows:
    - For microbiological parameters, total coliforms and faecal coliforms, the limit of 0/100ml was exceeded in 1% and 1.3% of the total samples respectively;
    - For chemical parameters, the non-compliance samples percentage was 2% for oxidability, 2% for ammonium, 1% for nitrates, 1% for toxic substances.

The parameters, for which non-compliance is frequently registered in some localities, are the following:

- total coliforms,
- faecal coliforms,
- colour,
- taste,
- turbidity,
- oxidability,
- ammonium
- nitrates,
- iron,
- pesticides,
- heavy metals.

Non-compliance of the bacteriological parameters is frequently registered in localities with less than 10,000 inhabitants.
Regarding the monitored parameters, the main areas where the cases of non-compliance are registered are situated in the following counties: Alba, Bacau, Botosani, Calarasi, Constanta, Dambovita, Maramures, Neamt, Olt, Prahova, Sibiu, and Suceava.

According to Law no. 458/2002, amended by Law no.311/2004, the Ministry of Administration and Interior, the Ministry of Health and the Ministry of Environment and Waters Management have estimated the necessary **costs** for the improvement of water treatment plants, distribution networks and the carrying out of the control monitoring, at **Euro 5,600 million**.

2. Drinking water treatment

According to the information provided by the National Administration "Romanian Waters", 189 surface water sample sections for the abstraction of drinking water have been analysed. According to the provisions of Directive 75/440/EEC, out of these sections, 78 are of A1 category, 96 of A2 category and 15 of A3 category. Regarding the analysed sections, it was ascertained that 19 treatment plants are not endowed with adequate technologies in order to ensure the source water quality. All the riparian treatment plants that use the Danube River as water source currently do not dispose of treatment technologies for pesticides removal and alternative options for public water supply.

According to the compliance plans provided by Law no. 311/2004, the compliance assessment of the treatment technologies in the existing plants compared to the new requirements for water quality is in the final process at the local authorities level.

For this purpose, a guide elaborated within the AMTRANS Research Programme is used.
The assessment of the current situation, the identification of risk points for drinking water quality, the identification of the technical solutions for the reduction/elimination of non-compliance risks are carried out according to the compliance plans; the schedules for carrying out the activities and investments, including their costs and the impact on the water cost will also be established.

According to the data collected by the MH with the purpose of elaborating the implementation programme and timetable, the following aspects have been identified:

- In Romania there are 1,398 treatment plants, out of which:
    - 797 plants are producing drinking water for a population between 50 and 5,000 persons,
    - 601 plants are providing water for systems supplying more than 5,000 persons.

- 25% of the public systems supplying drinking water for more than 50 persons and less than 5,000, are not in compliance with the limit values for: bacteriological parameters, turbidity, ammonia, nitrates, iron;
- 10% of the public systems supplying drinking water for more than 5,000 persons are not in compliance with the limit values for: oxidability, turbidity, ammonia, nitrates, iron, taste, smell);
- interruption of the supply of drinking water for more than 8 hours/day is registered in 21% urban localities and is affecting 12.5% out of the total urban population.

According to the MH statistics, performed on the occasion of the annual authorisation of the treatment plants:

- out of the total number of producers treating surface water and supplying drinking water for more than 5,000 persons, 38.5% perform the chemical control and 9% microbiological check;
- out of the total number of producers treating the underground water and supplying drinking water for more than 5,000 persons, 9% perform the self-monitoring for microbiological and chemical parameters;
- the monitoring of the quality of the drinking water by producers in rural areas, in localities with less than 5,000 inhabitants, is carried out only for chemical parameters in 5% of the treatment plants.

3. Distribution of drinking water

The age of the drinking water distribution networks (in some areas more than 90 years) is an important factor affecting the quality of the distributed water, characterised by frequent breakdowns, important water losses or water contamination. Additionally, in case of frequent interruptions in water distribution, the distribution network condition could generate changes in the organoleptic and physical-chemical quality of water.
The most affected parameters are colour, taste, flavour, turbidity, microbiological parameters, which frequently exceed the admissible limits.

In the process of setting up the action plans, the fact that the drinking water distribution network is older than 50 – 100 years in many localities in Romania must be taken into consideration.
The supply systems and the distribution network are mainly made of non-adequate materials (asbo-cement and lead), 30 % of the pipes are made of iron and there is no modern system for their cleaning. The distribution networks are significantly damaged, which leads to organoleptic changes in the quality of distributed water.

Drinking water is contaminated with corrosion products and impurities resulted from frequent accidents occurred in the distribution networks. The water supply is frequently intermittent in many localities, therefore influencing the quality of water.

4. Domestic distribution systems

In order to meet the requirements regarding the lead limit concentration of 10 µg/l, comparing with the current value of 50µg/l, at consumer tap (at the latest, in 15 years from the Directive's entry into force), the owners of the buildings having installations that contain compounds producing lead will have to carry out substantial renovation of the domestic distribution systems in individual houses.

VI. Identification of problem areas. Proposed measures

Quality of monitoring of drinking water

The following measures resulted from the above mentioned analysis on the coverage, intensity, quality and monitoring, carried out through the MH network:

- Implementation of GD no. 974/2004 and of the Methodology for surveillance and control (Order of the Minister of Health no. 598/2003);
- Setting up the reference laboratory and the regional laboratories;
- Improvement of the equipment endowment and training of the personnel from the monitoring labs;
- Setting up the management system of the laboratory and data inspection;
- Completion of the secondary legislation with the provisions on drinking water monitoring and on the registering of the labs that will monitor the quality of drinking water;
- Implementation of the analytical quality system.

Technological improvements of the water treatment plants and of the distribution systems

75% of the existing distribution network has to be replaced in order to minimise the risk of contamination and bring the organoleptical and physical-chemical characteristics to a reasonable level.

The investment needed for the improvement of the distribution system amount to about Euro 2,000 million. The investments are going to be financed from the state and the local budgets, external assistance projects or public-private partnerships. The necessary amount cannot be entirely supported by the local authorities or by the water operators; consequently, the most stringent needs will be covered through the EU co-financing programmes ISPA, MUDP, SAMTID, SAPARD. The rest of the investments are included in the compliance plans, elaborated by the local producers and local authorities and shall be implemented by 31 December 2015 at the latest, based on the availability of national resources as well as on the population affordability.

The analysis of the localities connected to the water supply networks led to the promotion of projects aiming at improving the treatment procedures and the distribution networks. Thus, in accordance with the ongoing approved projects (ISPA, MUDP, SAMTID, SAPARD), the quality of water supply will be improved through investments in re-endowment and rehabilitation of the networks for 1.0 million inhabitants out of the total monitored.

Once its monitoring capacity complies with the provisions of Directive (after the finalisation of PHARE RO - 2002/000-586.04.13), Ministry of Health will obtain information on the quality parameters for which no sufficient data are currently available.

Thus, during 2006, as a consequence of the completion of the monitoring, investments in this field will be updated depending on the new data resulted.

Taking into account that only 65% of the total population is presently connected to the network in urban area, a major financial effort will be carried out in investments for extending the number of persons connected to the water network, in addition to the rehabilitation of the networks and improvement of the treatment technology.

VII. Identification of stakeholders and their involvement in the implementation process

1. Producers and suppliers of drinking water

- The requirements of the Directive will have to be met by those who produce and distribute drinking water, by owners of individual installations and producers of bottled water or water used in the food industry. In order to assist them in complying with the requirements of the Directive, projects will be financed from the state and local budgets, and external assistance within: ISPA, SAPARD, PHARE, World Bank programmes or through the public-private partnership.

2. Consumers of water from public water supply systems, public wells or bottled water

- The requirements of the new legislation cannot be achieved unless they fully benefit from the population support. Therefore it is necessary to ensure the adequate and proper information of the population on its involvement in the process of monitoring the quality of drinking water, the protection of water resources, of water supply systems and especially in the replacement of non-complying domestic distribution systems.

VIII. Institutional, equipment and personnel requirements

- The implementation of the national legal acts requires the adoption of new financial mechanisms, defining funding for water quality monitoring, changes in the institutional structures, nominating a national reference laboratory as well as regional ones, improvement of professional training. The MH will benefit by PHARE assistance during 2004-2005 in the field of technical assistance and equipment procurement. The full implementation of the Directive will require significant financial means to ensure:

  1) Country wide monitoring of drinking water quality:

- MH is currently monitoring the drinking water quality in the framework of the national public health programme with a budget of Euro 450,000/year. Article 7 (1) of Law no. 311/2004 stipulates that the monitoring of drinking water quality and the costs involved will be financed from producers and suppliers.
- The implementation of the new complete monitoring scheme will be gradually achieved during 2004-2005.
  The equipment for the endowment of four regional labs and of a national reference lab, as well as the training of the lab and management personnel need an amount of Euro 4 million

and Euro 2 million, respectively (which will be provided by the PHARE assistance). Additional investments of about Euro 1 million (supported by the state budget) are also required for updating the equipment of the 42 territorial laboratories of the Public Health Directorate involved in sampling and data management.

2) Rehabilitation of the treatment technologies

- As stipulated by Article 3 (1) of Law no. 311/2004, by 31 December 2004, MAI should centralise the compliance plans for all water producers. The evaluation of the preliminary costs, according to the national strategy for the development of public utilities (water and sewage systems) reveals an amount of about Euro 110/inhabitant required for the rehabilitation of the current treatment plants, extension or building of the new capacities. That leads to a total cost of about Euro 2,000 million.

3) Rehabilitation of the existing distribution networks

- The total length of the drinking water distribution networks is about 40,267 km. Many sectors are very old and present frequent deficiencies. In some localities, the water losses in network amount to 30 – 50 %. The preliminary evaluation of the costs, within the strategy regarding the development of the water and sewerage services, reveals an amount of about Euro 200/inhabitant needed for the rehabilitation of the current treatment plants, extension or building of new treatment plants. That leads to a total amount of Euro 3,600 million.

4) Replacement of the domestic distribution network

- The costs for replacing the domestic networks must be covered by the owner, which involves an additional cost from the family budget.
  For the accomplishment of these replacements in due time, incentives to the owners must be provided.
- For the public buildings, where the water is directly supplied to the public, the costs of the replacements will be borne by state budget funds.

A) Institutional needs

REQUIREMENTS	INSTITUTIONS INVOLVED		NECESSARY IMPROVEMENTS
	-current situation-	- optimal situation-	
1. New parameters and values for checking the quality of drinking water	Ministry of Health, water producers	MS, MEWM, Water producers	- improvement of the treatment procedures - protection of the water sources - rehabilitation of the distribution network
	Building owners	Building owners	- change of domestic lead networks
2. Data collection, centralising registers		MH, MEWM, MAI	- personnel, software, processing equipment
3. Monitoring the quality of drinking water	MH, water producers	MH, water producers	- analytic equipment, training of the personnel - control of the quality of analyses

B) The need for additional staff within the public institutions

A significant increase in the personnel number is required for sanitary authorisation, surveillance, sanitary inspection and control, which are currently carried out with limited personnel resources, as follows:

- laboratory staff: 94 chemists, 85 lab assistants for chemical analysis labs, 59 specialists of microbiology, 26 biologists, 111 lab assistants for microbiology labs;
- authorisation and programme assessment: 317 staff members, out of which : 12% graduate specialists, (only 2 sanitary engineers);
- sanitary inspection: 217 persons – out of which only 6,9% are specialists with graduate studies.

The strengthening of the institutional capacity for insuring the audit monitoring, will be achieved through:

- PHARE Project RO 2002/000-586.04.13 for strengthening the institutional capacity of the Ministry of Health laboratories;
- Staff redistribution and employment/supplementation by the ongoing reorganisation of the local public health directorates (local public health authority) in order to ensure a more efficient activity and to increase the number of water specialists working within the Surveillance and Inspection departments.

At central level, a Section of Environmental Health (4 posts) was created within MH – General Directorate of Public Health, having four budgeted posts, in order to increase the institutional capacity for co-ordinating the implementation of the acquis.

At MAI level – Directorate for local Investment, the Department "Implementation, monitoring, investment in the environmental infrastructure" was set up.

IX. Transition period

The necessary measures for implementing the Directive's provisions require a huge financial effort and the co-ordination of all different stakeholders, as well as actions taken in order to reduce all factors influencing the quality of drinking water. Many of these issues cannot be solved by the date of accession.

A screening for all parameters listed in the Directive was carried out in 2003 by the Ministry of Environment and Water Management and the Ministry of Administration and Interior, through ICIM Bucharest, in the public water supply system from 261 urban localities (including recently established urban localities) with 10,520,937 inhabitants and 1647 rural localities (1,800,000 inhabitants) out of which:

- 1774 localities have less than 10,000 inhabitants;
- 111 localities have a population between 10,000 and 100,000 inhabitants;
- 14 localities have a population between 100,001 and 200,000 inhabitants;
- 9 localities have a population of more than 200,000 inhabitants.

This data corroborated with that resulted from the sanitary control carried out by the Ministry of Health in all urban localities during 2000 – 2003 showed that a transition period is required for some parameters/indicators.

The situation of the parameters for which the transition period is requested is as follows:

1. Oxidasibility

Until 2002, the Romanian standard established a value of 2.5 mg O_2/l (10 mg $KMnO_4$/l) or an exceptionally admissible value of 3 mg O_2/l (12 mg $KMnO_4$/l). These values were frequently exceeded in certain areas where the raw water has a high content level of oxidable organic substances. The high content of organic substance in surface waters is generated by the absence of the treatment of waste waters.
At present, the maximum admissible value, in accordance with Law no. 311/2004 for the amendment of Law no. 458/2002, is 5 mg O_2 (the same as that provided by the Directive).
In 1778 localities (93.2%), the value of oxidasibility complies with the limit established by the law. Out of 548,738 analyses, 7% were non-complying and important differences between the localities were revealed.
In the remaining 130 localities, the value of oxidasibility exceeds the established limit.
The compliance plan lays down that:

- By 31.12.2006, 67 localities will comply; out of these, 31 localities have less than 10,000 inhabitants; 32 localities have between 10,000 and 100,000 inhabitants and 4 localities have between 100,001 and 200,000 inhabitants;
- By 31.12.2010, 63 localities will comply; out of these, 29 localities have less than 10,000 inhabitants, 30 localities have between 10,000 and 100,000 inhabitants, 2 localities have between 100,001 and 200,000 inhabitants and 2 localities have more than 200,000 inhabitants.

2. Ammonium

The maximum admissible limit for this parameter is 0.5 mg NH_4/l.
In 2003, in 1803 localities (94.5%), the public systems for drinking water supply complied with the value established for this parameter.
The NH_4 concentration in water source and at the consumer's tap frequently exceeds the maximum admissible value in Rasnov, Zarnesti, Suceava, Slatina, Bals, Tarnaveni, Strehaia, Adjud, Targul Carbunesti, Sighisoara, Botosani.
The schedule below shows the compliance of the public systems in 105 localities:

- by 31.12.2006 – 42 localities, out of which: 22 have less than 10,000 inhabitants, 15 have between 10,000 and 100,000 inhabitants and 5 localities have between 100,001 and 200,000 inhabitants;
- by 31.12.2010 - 31 localities, out of which: 7 localities of less than 10,000 inhabitants, 23 localities have between 10,000 and 100,000 inhabitants, and 1 locality has between 100,001 and 200,000 inhabitants;
- by 31.12.2015 - 32 localities, out of which: 10 localities of less than 10,000 inhabitants and 22 localities between 10,000 and 100,000 inhabitants.

3. Nitrates

The maximum admissible limit for this parameter is 50 mg NO_3/l.
In 2003, the public systems for drinking water supply complied with the value established for this parameter in 1766 out of all analysed localities (92.6%).
The NO_3 concentration in water source and at the consumer's tap frequently exceeds the maximum admissible value in Calarasi, Oltenita, Lehliu-Gara, Targu Carbunesti, Rasnov, Tandarei, Slatina, Bals, Alexandria, Calarasi, Dumbraveni.

The schedule below shows the compliance of the public systems in 142 localities:

- by 31.12.2006 - 51 localities, out of which: 37 localities have less than 10,000 inhabitants, 11 have between 10,000 and 100,000 inhabitants and 3 localities have between 100,001 and 200,000 inhabitants;
- By 31.12. 2010 - 48 localities, out of which: 44 localities have less than 10,000 inhabitants, 4 localities have between 10,000 and 100,000 inhabitants;
- By 31.12. 2015 - 43 localities, out of which: 40 localities of less than 10,000 inhabitants and 3 localities between 10,000 and 100,000 inhabitants.

The rural localities with water supplied by public system and polluted by nitrates are situated in the following counties: Tulcea - 3 localities of 18,709 inhabitants, Mehedinti -25 localities of 19,084 inhabitants, Ialomita -13 localities of 25,742 inhabitants, Gorj – 4 localities of 4,346 inhabitants, Constanta – 48 localities of 109,640 inhabitants, Braila -2 localities of 4,312 inhabitants, Galati – 9 localities of 9,216 inhabitants.

The nitrate pollution, except the large surface sources, such as Danube River at Calarasi, is produced on the groundwater sources and is caused by: the lack of waste water treatment plants, sewage systems and the existence of the latrines in the rural area with a depth that generally does not exceed 4- 6 m and that are not waterproof.

The public systems for water supply built in the last years comply with the values established by Law no. 458/2002 and Directive no. 98/83/EC. The individual installations and the public

systems for less than 5,000 inhabitants in the rural areas situated in the southern and north-eastern Romania have increased nitrate concentrations in water.

4. **Turbidity**

The turbidity value is ≤ 5 NTU, considering that in case of surface waters, turbidity of 1 NTU must not be exceeded before disinfection.
Exceeding of the turbidity values is caused by the inefficiency of the treatment methods in case of modifications of turbidity of raw water and by the quality of the distribution networks.

In 2003, the public systems for drinking water supply complied with the value established for this parameter in 1818 out of all analysed localities (95.3%).
The schedule below shows the compliance of the public systems in 90 localities:

- By 31.12.2006 - 64 localities, out of which: 22 localities have less than 10,000 inhabitants, 33 have between 10,000 and 100,000 inhabitants, 6 localities have between 100,001 and 200,000 inhabitants and 3 localities have more than 200,000 inhabitants;
- By 31.12. 2010 - 21 localities, out of which: 7 localities have less than 10,000 inhabitants, 14 have between 10,000 and 100,000 inhabitants;
- By 31.12. 2015 - 5 localities of less than 10,000 inhabitants.

5. Aluminium

The maximum admissible value for Aluminium is 200 mg/l. The exceeding of this value is generally caused by the presence of Aluminium in source and more frequently by the inefficiency of the treatment methods.
In 2003, the drinking water supply public systems complied with the value established for this parameter in 1874 out of all analysed localities (98.2%).
The drinking water supply public systems complied with the value established for this parameter in 34 localities:

- By 31.12.2006 - 8 localities, out of which: 7 localities have between 10,000 and 100000 inhabitants and 1 locality has between 100,001 and 200,000 inhabitants;
- By 31.12. 2010 - 14 localities, out of which: 12 localities have between 10,000 and 100,000 inhabitants, 1 locality has between 100,001 and 200,000 inhabitants and 1 locality has more than 200,000 inhabitants;
- By 31.12. 2015 - 12 localities, out of which 6 localities have less than 10,000 inhabitants, 6 localities have between 10,000 and 100,000 inhabitants.

6. Iron

The maximum admissible value for Iron is 200 µg/l.
In 2003, the public systems for drinking water supply complied with the value established for this parameter in 1626 out of all analysed localities (85.2%).
Non-compliance of this parameter is caused by the sources'quality and increased concentrations can be found in the systems supplying the localities of less than 10,000 inhabitants.

The schedule below shows the compliance of the public systems in 282 localities:

- by 31.12.2006 - 242 localities, out of which: 239 localities have less than 10,000 inhabitants, 2 localities have between 10,000 and 100,000 inhabitants and 1 locality has between 100,001 and 200,000 inhabitants;

- by 31.12.2010 in 16 localities, out of which: 2 localities have less than 10,000 inhabitants, 13 localities have between 10,000 and 100,000 inhabitants and 1 locality has more than 200,000 inhabitants;
- by 31.12. 2015 in 24 localities, out of which 13 localities have less than 10,000 inhabitants and 11 localities have between 10,000 and 100,000 inhabitants.

7. **Manganese**

The admissible value for this parameter is 50 µg/l.
In 2003, the public systems for drinking water supply complied with the value established for this parameter in 1901 out of all analysed localities (99.6%).

The schedule below shows the compliance of the public systems in 7 localities:
- by 31.12.2006- 1 locality which has between 100,001 and 200,000 inhabitants;
- by 31.12.2010 - 2 localities, out of which 1 locality has between 100,001 and 200,000 inhabitants and 1 has more than 200,000 inhabitants;
- by 31.12.2015 - 4 localities with a population between 10,000 inhabitants and 100,000 inhabitants.

8. Heavy Metals (Cadmium, Lead in source)

The admissible value for cadmium is 5 µg/l and for lead is 10 µg/l.
In 2003, the public systems for drinking water supply complied with the value for these parameters in 99.8 % of localities.
Cadmium and lead sporadically occur in the source and tap water of 4 localities. These localities are situated in areas having hystorical industrial pollution with heavy metals.
These 4 localities that have a total population of 124,497 inhabitants, out of which 2 localities have a population less than 10.000 inhabitants and 2 localities have a population between 10,000 and 100,000 inhabitants, will comply by 31.12.2010.

9. Pesticides

The admissible value for pesticides is 0,5µg /l for total pesticides and 0,1 µg /l per category. As showed by studies, concentrations exceeding MCV per pesticide category occur in spring and autumn in the cities riparian to Danube.
In 2003, in 99,32% of localities, the level of pesticides concentration in water supplied by public systems was in compliance with norms.
1 locality with population more than 200,000 inhabitants will comply by 31.12.2006.

12 localities will comply, following the schedule below:
- by 31.12.2010 - 7 localities, out of which: 3 with a population between 10,000 and 100,000 inhabitants, 3 localities with a population between 100,001 and 200,000 inhabitants and1 locality with a population more than 200.000 inhabitants;
- by 31.12.2015 - 5 localities, out of which: 1 locality with a population less than 10.000 inhabitants and 4 localities with a population between 10,000 and 100,000 inhabitants.

For all the parameters not covered by the transitional period request, Romania will comply with the provisions of the Directive by the date of accession.

The quality of drinking bottled water has been complying with the requirements of Directives 98/83/EC and 80/778. Article 13.6 of Law no. 458/2002 requires that the quality of water currently used in the food industry to be in compliance with the EU requirements since August 2003. Currently, the water quality used in food industry complies with the Directive' requirements.

The compliance of the analysed localities having centralised water supply systems will be achieved by the end of 2015, as shown below:

Localities complying by 2007

Population connected	Total of localities	Oxidasibility %	Ammonium %	Nitrates %	Turbidity %	Alluminium %	Iron %	Heavy Metals %	Pesticides %	Manganese %
<10 000	1774	98.4	99	95.3	99.3	99.7	99.2	99.9	99.9	100
10000 - 100000	111	73	59.5	93. 7	87	83.8	78.4	98.2	93.4	96.4
100001- 200000	14	85.7	92.9	100	100	92.9	100	100	78.6	92.9
>200 000	9	77.8	100	100	100	88.9	88.9	100	88.9	88.9
TOTAL	**1908**	**96.7**	**96.7**	**95.2**	**98.64**	**98.64**	**97.9**	**99.8**	**99.4**	**99.7**

Localities complying by the end of 2010

Population connected	Total of localities	Oxidability %	Ammonium %	Nitrates %	Turbidity %	Alluminium %	Iron %	Heavy metals %	Pesticides %	Manganese %
<10 000	1774	100	99.5	97.7	99.7	99.7	99.3	99.9	99.9	100
10000 - 100000	111	100	80.2	97.3	100	94.6	90	98.2	96.4	96.4
100001- 200000	14	100	100	100	100	100	100	100	100	100
>200 000	9	100	100	100	100	100	100	100	100	100
TOTAL	**1908**	**100**	**98.32**	**97.7**	**99,7**	**99.4**	**98,7**	**99.8**	**99.7**	**99.7**

Localities complying by the end of 2015

Population connected	Total of localities	Oxidability %	Ammonium %	Nitrates %	Turbidity %	Alluminium %	Iron %	Heavy metals %	Pesticides %	Manganese %
<10 000	1774	100	100	100	100	100	100	100	100	100
10000 -100000	111	100	100	100	100	100	100	100	100	100
100001-200000	14	100	100	100	100	100	100	100	100	100
>200 000	9	100	100	100	100	100	100	100	100	100
TOTAL	**1908**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

As a conclusion, **Romania requests transition periods**, as follows:

by 31 December 2010

- for Oxidasibility, Ammonium, Aluminium, Iron, Pesticides, Manganese for the localities of more than 100,000 inhabitants;
- for Oxidasibility and Turbidity for the localities with a population between 10,000 and 100,000 inhabitants;
- for Oxidability, for the localities of less than 10,000 inhabitants.

by 31 December 2015

- for Ammonium, Nitrates, Aluminium, Iron, Lead, Cadmium, Pesticides and Manganese for the localities with a population between 10,000 and 100,000 inhabitants;
- for Ammonium, Nitrates, Turbidity, Aluminium, Iron, Lead, Cadmium and Pesticides, for the localities of less than 10,000 inhabitants.

The organoleptical changes: taste, colour and smell frequently occur in the consumers' complaints; taste and smell are related to the presence of free residual chlorine, whose concentration exceeds the perception limit. The colour is influenced by the quality of the distribution networks, especially of the domestic ones.

For the centralised system where the concentration of some parameters (including pesticides and nitrates) exceeds the admissible limits on limited period of time, the drinking water supply system operator has to use a supplementary source in order to mix with the water coming from the main source (and thus to decrease the pollutants concentration) or to use active carbon installations.

The population with private or public (non-centralised system) drinking water installations

In the rural area there are 2,686 communes with 15,700 villages, out of which 9,886,386 inhabitants[1] use water from public or private wells for domestic purposes.
Most of the individual wells have between 6-24 meters depth. The water wells are equipped with wind buckets.

The repartition of these localities depending on the number of inhabitants is the following:

- less than 1000 inhabitants – 2.1%;
- 1000 –1999 inhabitants- 14.9%;
- 2000-4999 inhabitants - 60.6%;
- 5000-9999 inhabitants- 21.2%;
- more than 10.000 inhabitants - 1.2%.

Taking into account all these aspects, Art. 2, para 1), let.c) of Law no.311/2004 amending Law no. 458/2002 on the quality of water intended for human consumption regulates the quality of drinking water for the public and private wells and Art.14^1 and 14^2 stipulate the monitoring and sanitary surveillance responsibilities. These responsibilities are detailed in GD no. 974/2004.

[1] In accordance with the results of July 2002 census

A screening carried out by Public Health Institute from Bucharest in 2000, shows a number of 956,129 public wells in 14,303 villages (from 2,406 communes) supplying 8,780,816 inhabitants. According to this screening and the annually centralized data regarding the infantile methemoglobinemie incidence, nitrates and pesticides pollution of those water sources was revealed in Botosani, Iasi, Vaslui, Galati, Constanta, Calarasi, Ialomita, Dolj, Olt, Mehedinti counties.

Thereby, for nitrates, 66.21% of localities (67% of population) will comply by 31.12.2006.
The schedule below shows the compliance of the remaining localities:

- 2,512 localities (villages) with a population less than 10,000 inhabitants will comply by 31.12 2010;
- 2321 localities (villages) with a population less than 10,000 inhabitants will comply by 22.12 2015.

For pesticides per class:

- 785 localities (villages) with a population less than 10,000 inhabitants will comply by 31.12 2010;
- 902 localities (villages) with a population less than 10,000 inhabitants will comply by 22.12 2015.

The public wells, where pesticides and nitrates' exceeding is recorded, will be actively monitored within the public health programme in order to avoid the effects of repeated peak level exposure for pesticides and chronic exposure for nitrates.

The local authorities are responsible for identifying alternative solutions and for ensuring the connection to a centralised existing supplying system or investments for development of a new one until 22 December 2015.

MEASURES FOR AVOIDING THE ADVERSE IMPACT ON PUBLIC HEALTH DURING THE TRANSITION PERIOD

In order to avoid the adverse impact on public health, administrative measures are taken in accordance with the provisions of Articles 8 and 9.

Article 13 (1) of Law 458/2002 lays dawn the drawing up of **compliance plans by the producer/supplier.**

The county Public Health Directorates and Public Health Directorate of Bucharest ensure the surveillance and control of drinking water monitoring in order to prevent diseases according to Article 7 (1^2) of Law no. 311/2004. Within the sanitary inspection, the compliance with a certain number of requirements is focused on:

- Elaboration of quality compliance plan at drinking water production/supply installations level by the producer/supplier. This plan will contain, in particular, a risk analysis identifying the critical issues and the actions for their prevention.
  The compliance plan must contain the analysis of the current situation on the basis of the historical data held by the producer and/or supplier and the responsible for the sanitary surveillance, the sanitary protection of the sources, adaptation of the treatment

methods to source quality, the quality of the distribution network, the operating administrative capacity, the quality of produced/distributed water, identifying the parameter/s that cannot comply to or present non-compliance risk and the number of the affected population. The plan will contain the necessary deadlines for the compliance with the legal provisions;
- the level of operators' training and informing;
- a monitoring programme established by a laboratory agreed/certified by a certification body and registered at the Ministry of Health;
- licence for operating.

These provisions will enter into force for the compliance plan within 90 days after the publication of Law no. 311/2004 (30 June 2004) and on 22 December 2005 for the complete monitoring, according to Article 7 of Law no. 458/2002.

The compliance plans, containing the time schedule and the cost of the compliance activities, are centralised by the Ministry of Administration and Interior, which will monitor and control their implementation, in accordance with Article III para. 1 and 2 of Law no. 311/2004 for the amendment of Law no. 458/2002 on the quality of drinking water.

According to Article 7 para. 1^2 of Law no. 311/2004, the county Public Health Directorates and Public Health Directorate in Bucharest ensure the **sanitary surveillance** and the control of drinking water monitoring.

In order to ensure the sanitary protection of water sources intended for human consumption, an activity of surveillance and control is developing. This surveillance includes authorisation, inspection and laboratory control. Within the sanitary authorisation process, the water source protection is taking into consideration. Requirements for the obligation to set up sanitary protection areas, with severe and restricted regime and also hydro-geological protection perimeters are set up by the Water Law no. 107/1996, amended by Law no. 310/2004 and GD no.101/1997 regarding the establishment of the protected areas.

The management of the situations when the water quality does not comply with the quality limits or represents a danger for public health is regulated by Law no. 458/2002, Articles 8 and 9 and by GD no. 974/2004 on the approval of the " Norms for surveillance, sanitary inspection and monitoring" – Article 26. GD no.974/2004 introduces the elements for the assessment and management of the sanitary and public health risks.

The producer and/or supplier, with the approval of the Public Health Directorates must provide **immediate and permanent information** of the consumers, together with **recommendations**. The recommendations target especially the sensitive groups. For risk of exposure to nitrates, the mayoralty must ensure free water for babies, in accordance with Article 50 of GD no. 974/2004 on the approval of the Norms for surveillance, sanitary inspection and drinking water quality monitoring and of the Procedure for sanitary authorisation of drinking water production and supply.

The data regarding the monitoring and the sanitary inspection of drinking water is considered public information (Article 7 of Law no. 458/2002).

Specific provisions regarding the dissemination of information were adopted into the national legislation, namely GD no. 1115/2002 on the free access to the environmental information regarding the public information on water quality.

In order to avoid the adverse impact on human health, taking into account the relevant WHO standards, the following measures are taken:

- Sanitary authorization of water treatment plants for drinking purposes, which is annually reviewed;
- Sanitary surveillance and control of the quality of drinking water by the local public health authorities;
- Surveillance and control of sanitary protection of water sources intended for human consumption.
  This surveillance includes authorisation, inspection and laboratory control. Within the sanitary authorisation process, the water source protection is taken into consideration. Requirements for the obligation to set up sanitary protection areas, with severe and restricted regime and also hydro-geological protection perimetres, are set up by Law no. 107/1996, amended by Law no. 310/2004;
- Rigorous periodical sanitary inspection of the treatment station and the distribution network; implementation of the remedial measures;
- Monitoring of drinking water by the producer and at the exit of the water treatment plant, of the stockade reservoirs;
- Periodical sanitary inspection of the water treatment plants and the distribution networks; applying the remedial measures;
- Co-operation between the responsible local authorities (public health, public administration, environment, water services) for rectifying the deficits and achievement of gradual compliance;
- Public information on non-complying samples of a relevant parameter which may have a public health risk and the measures to be taken;
- Waterborne and water related disease notification according to Order of the Minister of Health and Family no. 8/2000;
- Elaboration of the annual report on drinking water quality monitoring in urban area, according to the methodology for sanitary surveillance (in the methodology for sanitary surveillance is included the assessment of the incidence and the mortality by certain diseases in relation with the quality of drinking water; for example the record of the cases of acute nitrite intoxication in infants, malformation, miscarriages, etc.);
- The local authority is obliged to display the results of the monitoring programme and of the sanitary inspection and/or the report sent by the public health authority;
- For the centralized system where the concentration of some parameters exceeds the admissible limits during a limited period of time (including pesticides and nitrates), in order to provide safe water for drinking, the drinking water supply system operator will have to use an additional source of water in order to mix it with the water coming from the main source (and thus to decrease the pollutants concentration) or to use active carbon installations.
  The public will be informed on the measures and will be advised on how to use the water for drinking purposes, in case of nitrates pollution;
- In communes, for the non-complying non-centralised systems (wells intended for public consumption), the local authority is responsible for informing the population on the results of the water quality monitoring by posters located on the wells. In the same

time, for the non-complying water wells with nitrates, the local authority is responsible for providing safe water for infants.

The transition period is requested for the following reasons:

- The self-monitoring capacities of water quality are low; about 45% of the producers are complying with this requirement;
- Significant investments are required- about Euro 5,600 million. This must be achieved simultaneously with the programme for the implementation of the Urban Wastewater Treatment Directive and the Waste Management Directive. This requires an important mobilisation of the financing funds;
- At present, small sized localities lack the capacity to design, finance and carry out large investment projects. The transition period will contribute to the strengthening of the institutional capacity and the capacity of the local authorities to elaborate and implement integrated re-endowment projects, having as a final goal the insurance of a good quality for drinking water;
- The utilities that require re-endowment are multi-functional and complex and some simultaneous investment will be needed, both in water supply as well as in waste water facilities. At local level, this will strain their technical and financial capacity;
- An increase of the tariffs for water services and public utilities will generate unacceptable social costs for the poor communities, rending these services inaccessible due to the impossibility of paying;
- Rapid implementation of the rehabilitation and modernisation programme could lead to an artificial growth of the construction costs;
- Costs involved by the treatment and distribution of drinking water will be supported from consumers which will also have to support directly the costs related to the implementation of other environmental Directives (collection and treatment of waste water, quality, waste management, and others). These costs include the financing of the public works, of private works for connection and part of the costs related to the operation and maintenance of the systems;
- A study carried out in 2001 within PHARE-RO 00/IB/EN-01 PROJECT, comparing the costs of public and private works imposed by the implementation of directives from water quality field (drinking water quality and waste water treatment), with the incomes of population and taking into account the optmistic and pessimistic scenario related to economic growth shows a period of compliance between 12 and 30 years;
- Taking into account the experience of EU countries, the water services must not request more than 5% of a family budget. A fast implementation of the provisions of Water Directives would lead to a great increase in the costs on short term, which could generate the refuse of the population to use the service and the infrastructure, implicitly;
- For a family not connected to water utilities (drinking water, waste water and sewage system), infrastructure and endowment costs could reach an amount between EUR 500 and 1,500.

The transition periods are not requested for water used for food industry and drinking bottled water.

According to the Law no. 458/ 2002, amended by the Law no. 311/2004, the food industry and drinking bottled water have to use water from sources complying with the requirements of Directive 98/83/EC.

X. Costs and financial resources

a) Assessment of the supplementary expenditures from the state budget (personnel expenditures for institutional capacity strengthening)

Total **investment expenditures** from the State budget, local budgets, external financial assistance, public-private partnerships in the period 2004-2015 (expenditures for the personnel reinforcement of the relevant institution are not included) are presented in the Table below:

Purpose	Amount	Time period
County-wide monitoring of drinking water quality – new analytical equipment for 5 regional and 42 territorial laboratories of the MH	EUR 2.5 million	2004 - 2005
Investment in equipment for control monitoring performed by the producers	EUR 5.6 million	2004 - until the rehabilitation of the water treatment plants
Improvement of technologies and extension of the water treatment	EUR 2,000 million	2004 – 2015
Rehabilitation and extension of the water supply networks	EUR 3, 600 million	2004 - 2015
Replacement of the domestic distribution systems	Not estimated yet	2004 - 2015
TOTAL	**EUR 5,608.1 million**	**2004-31.12.2015**

DISTRIBUTION OF THE ESTIMATED COSTS DURING THE REQUESTED TRANSITION PERIOD

EUR

YEAR	FINANCING RESOURCES			
	STATE BUDGET AND LOCAL BUDGET	EU FUNDS	OTHER SOURCES	TOTAL PER YEAR
2004	27,000,000	19,000,000	5,000,000	51,000,000
2005	26,000,000	74,000,000	10,000,000	110,000,000
2006	25,000,000	77,000,000	10,000,000	112,000,000
2007	25,000,000	80,000,000	10,000,000	115,000,000
2008	86,000,000	260,000,000	74,000,000	420,000,000
2009	942,000,000	270,000,000	78,000,000	440,000,000
2010	120,000,000	410,000,000	110,000,000	640,000,000
2011	127,000,000	495,000,000	106,000,000	728,000,000
2012	137,000,000	505,000,000	106,000,000	748,000,000
2013	142,000,000	505,000,000	106,000,000	753,000,000
2014	139,000,000	500,000,000	106,000,000	745,000,000
2015	137,000,000	495,000,000	106,000,000	728,000,000
TOTAL	**1,083,000,000**	**3,690,000,000**	**827,000,000**	**5,600,000,000**

XI. Economic impact

Increase in the level of charges for water supply services

The necessary investments will be reflected in an increase in the level of charges for water supply services. However, it is necessary to take into account that drinking water cannot be regarded as a commodity, but as a component of the basic human needs. An increase in the level of charges for water supply and sewerage services may lead to the decrease in the consumption, water stagnation and to the modification of its quality. The decrease in the producer's income, as a result of the decrease in water consumption, will lead to the increase in the unemployment rate.

XII. Ongoing Projects

- The PHARE Project RO 2002/000-586.04.13 with the amount of EUR 6 million, on the strengthening of the institutional capacities of the MH commenced at 1 September 2004.
- The status of the production, transport and distribution systems was improved in some localities with international (bilateral and multilateral) financial support. For 10 cities the water supply systems were modernised within the MUDP I and MUDP II programmes. Several works have been carried out with the financial support of some Member States. New public water supply systems were built in several rural localities by means of commercial loans and state support, through a programme of access to drinking water.

- SAPARD programme, measure 2.1. is also focused on the development of drinking water supply systems in the rural area.
- ISPA and SAMTID focus on urban infrastructure. While ISPA mainly finances the sewage works, SAMTID will focus on drinking water systems in small and medium size localities. The total amount of this programme is EUR 380 million.

ANNEX

Transitional measures under Directive 98/83/EC on quality of water intended for human consumption

Localities complying by accession

Population connected	Total of localities	Oxidisability %	Ammonium %	Nitrates %	Turbidity %	Aluminium %	Iron %	Cadmium, Lead %	Pesticides %	Manganese %
<10 000	1774	98.4	99	95.3	99.3	99.7	99.2	99.9	99.9	100
10000 - 100000	111	73	59.5	93. 7	87	83.8	78.4	98.2	93.4	96.4
100001- 200000	14	85.7	92.9	100	100	92.9	100	100	78.6	92.9
>200 000	9	77.8	100	100	100	88.9	88.9	100	88.9	88.9
TOTAL	**1908**	**96.7**	**96.7**	**95.2**	**98.64**	**98.64**	**97.9**	**99.8**	**99.4**	**99.7**

Localities complying by the end of 2010

Population connected	Total of localities	Oxidisability %	Ammonium %	Nitrates %	Turbidity %	Aluminium %	Iron %	Cadmium, Lead %	Pesticides %	Manganese %
<10 000	1774	100	99.5	97.7	99.7	99.7	99.3	99.9	99.9	100
10000 - 100000	111	100	80.2	97.3	100	94.6	90	98.2	96.4	96.4
100001- 200000	14	100	100	100	100	100	100	100	100	100
>200 000	9	100	100	100	100	100	100	100	100	100
TOTAL	**1908**	**100**	**98.32**	**97.7**	**99.7**	**99.4**	**98.7**	**99.8**	**99.7**	**99.7**