



COMMISSION OF THE EUROPEAN COMMUNITIES

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Proposal for a

**DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

**concerning the quality of bathing water**

(presented by the Commission)

## EXPLANATORY MEMORANDUM

### 1. INTRODUCTION

Protection of bathing waters has been one of the first, and one of the most successful, elements of European Water Policy. The 1976 Bathing Water Directive<sup>1</sup> has not only set binding standards for bathing waters throughout the European Union, but also resulted in an unprecedented public awareness, as bathing water quality is perceived by the citizens as directly touching upon their daily life. The annual Bathing Water Report published by the Commission each year before the start of the bathing season, clearly underlines substantial progress in the quality of our bathing waters.

The most recent report - concerning the 2001 bathing season - shows a high degree of compliance as well as significant improvements in water quality during the past 10 years. Improvements are particularly impressive in coastal bathing areas; but also inland bathing waters (rivers, lakes) have now achieved a good compliance rate.

Year	EU coastal waters		EU fresh waters	
	Compliant <sup>2</sup>	Other <sup>3</sup>	Compliant	Other
1992	84,9 %	15,1 %	47,5 %	52,5 %
2001	95,8 %	4,2 %	91,1 %	8,9 %

However, changes in science and technology as well as in managerial experience oblige the Commission to revise EU environmental legislation where appropriate. The 1976 Bathing Water Directive clearly reflects the state of knowledge and experience of the early 1970s, as regards the technical-scientific basis, the managerial approach and the involvement of the public.

Initiatives to revise the Bathing Water Directive actually started in 1994, with the Commission presenting a Proposal for a revision. This Proposal saw first reading in the European Parliament, but was never further negotiated by the Council. It was preferred that a new Directive was developed, based on new scientific evidence and on a broad consultation. However, this Proposal gave the incentive for further studies and developments on bathing water quality, as regards parameters as well as the managerial approach.

Further, the European Union has recently completely restructured EU Water Policy by adopting the Water Framework Directive<sup>4</sup>, providing a coherent managerial framework for all water-related EU legislation. The provisions of the Bathing Water Directive must be fully compatible with this new framework.

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<sup>1</sup> Council Directive 76/160/EEC of 8 December 1975 concerning the quality of bathing water, OJ L 31 of 5.2.1976

<sup>2</sup> Compliant with mandatory standards of Directive 76/160/EEC

<sup>3</sup> Bathing areas not compliant with mandatory standards of Directive 76/160/EEC, or insufficiently sampled or with ban on bathing

<sup>4</sup> Directive 2000/60/EC of the European Parliament and the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ L 327 of 22.12.2000

A survey<sup>5</sup> conducted by the Commission showed in 1999 that 71% of Europeans are concerned about water, air and soil pollution. Pollution of the sea, coasts, rivers and lakes are primary concerns. When it comes to judging their immediate living environment, Europeans value good bathing water quality even higher than all other water topics.

This high interest is also shown at the level of the Europa Bathing Water Website<sup>6</sup>. In 2001, more than 2 million requests were registered, whereof more than 60% in the period people plan their holiday (May to July), and a further 9% in August.

The Commission bases its Proposal for a revised Bathing Water Directive on the following considerations, reasons and principles:

- Coherence with the Sustainable Development Strategy, the 6<sup>th</sup> EAP and with the objectives singled out by the European Council for future development in priority areas such as “public health” and “natural resources”<sup>7</sup>.
- Coherence with other EU water-related legislation adopted since 1976, in particular with the Water Framework Directive, must be ensured.
- The parameters used for setting the standards shall be reviewed and streamlined, focusing on robust microbiological indicators and taking into account the monitoring system established under the Water Framework Directive; parameters and values are to be based on the latest scientific evidence and a high level of protection, also with a view to sensitive groups of citizens such as children.
- Care for our bathing waters needs to progress from simply sampling and monitoring to integrated quality management.
- To ensure better and earlier information to the public, making use both of locally and regionally available facilities and technology approaches such as the Internet and geographical information systems.
- The participatory processes shall be enhanced and expanded. Such implementation efforts have to involve not only Member States and the Commission, but in particular, local and regional bodies, stakeholders and NGOs and the scientific community.
- Revision efforts shall also provide a further example of Good European Governance as outlined in the Commission White Paper of October 2001.

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<sup>5</sup> Eurobarometer 51.1 [http://europa.eu.int/comm/public\\_opinion/archives/eb/ebs\\_131\\_fr.pdf](http://europa.eu.int/comm/public_opinion/archives/eb/ebs_131_fr.pdf)

<sup>6</sup> [http://www.europa.eu.int/water/water-bathing/index\\_en.html](http://www.europa.eu.int/water/water-bathing/index_en.html)

<sup>7</sup> Agreement achieved during trilogue March 2002; formal adoption by EP Plenary and Council foreseen May 2002

## **2. THE CONTEXT FOR A NEW DIRECTIVE**

### **2.1. European Water Legislation**

#### *2.1.1. The Water Framework Directive*

On 23 October 2000 the European Parliament and the Council adopted the Water Framework Directive<sup>8</sup> establishing a framework for Community action in the field of water policy.

Whilst the Bathing Water Directive has a distinct contribution to the integration of policies on the environment and tourism and a clear, separate identity, it will need to be closely coordinated with the Water Framework Directive. This approach is made operational through provisions established under the Water Framework Directive, with a general objective of achieving 'good ecological status' for all waters and specific objectives for so-called 'protected areas' such as bathing waters<sup>9</sup>.

#### *2.1.2. The Urban Wastewater Treatment Directive*

The Urban Waste Water Treatment Directive<sup>10</sup> addresses key point sources of pollution from urban and industrial discharges. Urban waste waters impact on waters both in terms of biodegradable material and the addition of nutrients, which contribute to eutrophication. Many lakes as well as parts of our regional seas (North Sea, Baltic Sea, parts of the Mediterranean) show significant eutrophication with large accumulations of microscopic and macroscopic algae, leading to marked changes in the ecosystem. These conditions are unpleasant for bathers, and have a significant negative impact upon the bathing water's reputation and on the tourist Industry.

The Directive sets out a high level of protection, as a rule secondary (biological) treatment, and even more advanced treatment in 'sensitive areas' (nutrient removal). Implementation deadlines are phased from 1998 to 2005, depending on the size of the discharge and the characteristics of the affected water.

The Urban Wastewater Treatment Directive contains a provision calculating the load taking into account possible increase during the touristic season. Non respect of these provisions is a frequent cause of bacteriological pollution of bathing water.

#### *2.1.3. The Directive on Nitrates Pollution from Agricultural Sources*

The Nitrates Directive<sup>11</sup> aims at reducing nitrogen pollution from agricultural sources, and at preventing further such pollution. Pollution by nitrates impacts on eutrophication of both inland and coastal waters (causing effects as described above).

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<sup>8</sup> Directive 2000/60/EC of the European Parliament and the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ L 327 of 22.12.2000

<sup>9</sup> Annex IV of the Water Framework Directive lists the areas: areas designated for the abstraction of drinking water, for the protection of economically significant aquatic species, recreational waters including bathing waters, nutrient-sensitive areas (including areas designated under the Nitrates Directive and under the Urban Waste Water Treatment Directive), as well as areas designated for the protection of habitats or species.

<sup>10</sup> Council Directive 91/271/EEC of 21 May 1991, OJ L 135, 30.5.1991

<sup>11</sup> Council Directive 91/676/EEC of 12 December 1991, OJ L 275 , 31.12.1991

In areas subject to eutrophication or potential eutrophication, legally binding measures have to be taken (manure storage capacities, restrictions in application of manure etc.).

Recent experience gained by Member States has shown that run-off, leakage and direct access of cattle to rivers may cause significant diffuse microbiological pollution of bathing waters<sup>12 13</sup>. As such, bathing water quality control will contribute to the creation of good agricultural practices as foreseen under the Nitrates Directive.

## **2.2. Related European Union Policies**

### *2.2.1. Access to Environmental Information*

Since 1976 policy and legislation on environmental information and public participation has evolved considerably. The 1990 Directive on the freedom of access to information on the environment<sup>14</sup>, constitutes a cornerstone in EU legislation on public awareness and involvement, as it catalysed the way public authorities approach the process of openness and transparency.

With the signing, in 1998, and ongoing ratification of the UN-ECE Convention on Access to Information, Public Participation in Decision Making ('Aarhus Convention'), the European Union and its Member States are committed to increased information and participation. The Commission has adopted a Proposal for a Directive on public access to environmental information, in order to adapt the 1990 Directive to the electronic media and to deliver on the EU's commitments under the Aarhus Convention.<sup>15</sup> The new Bathing Water Directive must be coherent with this proposal. In practice, better information would mean presenting real-time information on beach conditions, management practices and bathing water quality. This would have to be done at a local level, and beyond the local level on the Internet.

### *2.2.2. Integrated Coastal Zone Management<sup>16</sup>*

Integrated Coastal Zone Management (ICZM) is a multi-disciplinary approach to promote sustainable management of coastal zones. It covers the full cycle of information collection, planning (in its broadest sense), decision making, management and monitoring. ICZM uses the informed participation and co-operation of all stakeholders to assess the societal goals in a given coastal area. The revised Bathing Water Directive will take into account ICZM principles.

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<sup>12</sup> Faecal Indicator Organism Sources and Budgets for the Irvine and Girvan catchments, Ayrshire – a report to West of Scotland Water, Sepa and South Ayrshire Council by the Centre of Environment and Health, 1999

<sup>13</sup> Economic Evaluation of the Bathing water Directive (76/160), Fylde Coast case study, European Commission, 2001-2002.

<sup>14</sup> Council Directive 90/313/EEC of 7 June 1990, OJ L158, 23.6.1990, p. 56.

<sup>15</sup> Commission Proposal for a Directive of the European Parliament and of the Council on public access to environmental information of 29 June 2000, COM(2000) 402

<sup>16</sup> COM(2000)547

### **3. THE RESPONSE TO THE CONSULTATION ON A NEW BATHING WATER DIRECTIVE**

#### **3.1. Council**

In December 2000 the Commission published a Communication “Developing a new Bathing Water Policy”<sup>17</sup>. The Council responded to the Commission’s Communication by Council Conclusions of 8 March 2001,

- welcoming the foreseen review and requesting that the forthcoming legislative proposal adhere to certain principles;
- supporting the emphasis on water quality management and long-term trends;
- requesting clear and unambiguous definitions, further clarification on the relationship with other water directives as well as cost-benefit considerations;
- supporting early and better information of the public.

#### **3.2. European Parliament**

The European Parliament did not adopt a report on the Commission Communication “Developing a new Bathing Water Policy”<sup>18</sup>, but stressed on earlier occasions the importance of bathing water protection and the need for coherence with the Water Framework Directive. Further, the European Parliament demanded an expansion of the scope of the Directive to include recreational waters.<sup>19</sup> The agreement between Council and Parliament on the 6<sup>th</sup> Environmental Action Programme confirmed the support for a revision of the Bathing Water Directive.<sup>20</sup>

#### **3.3. Committee of the Regions**

The Committee of the Regions attached particular interest to monitoring and assessing eutrophication, caused both by natural source or impact of human activities. It emphasised the need to take into account regional differences when defining elements such as the length of the bathing season or sampling regimes<sup>21</sup>.

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<sup>17</sup> COM(2000) 860

<sup>18</sup> COM(2000) 860

<sup>19</sup> European Parliament, December 1996 plenary session, 1<sup>st</sup> reading of Commission Proposal for adaptation of Directive 76/160/EEC, document A4-0395/96

<sup>20</sup> Agreement achieved during trilogue March 2002; formal adoption by EP Plenary and Council foreseen May 2002.

<sup>21</sup> COM-4/048 of 14 June 2001

### **3.4. Consultation of the Scientific Committee on Toxicity, Ecotoxicity and the Environment (SCTEE)**

The Commission has consulted the Scientific Committee on the choice of parameters and the values attached to them. On the question „Does the Scientific Committee consider that the two chosen indicators<sup>22</sup> (by the Communication COM(2000)860) and the suggested limit values are appropriate for the protection of humans“, the CSTEED delivered the following opinion<sup>23</sup>:

- Even though the two studies taken into consideration by the Commission are recognised as scientifically sound, the CSTEED recommends to make use of all the available information.
- The two parameters are representative of the most reported episodes of contamination and they are correlated with health problems. Assessment of both indicators in coastal and fresh waters will provide more information and could help determining the sources of contamination. Nevertheless, research on viral indicators remains necessary. Under the current state of knowledge it is difficult to determine a threshold limit for *Escherichia coli* and Intestinal Enterococci (below which no adverse effect are observed) and that any chosen limit will not at all times be universally true. However, the Committee confirms that under the current state of knowledge, the Communication’s suggestions are in the right range, but relying on data obtained from different assay methods to fix values is questionable.
- Indicator organisms should be assayed using intercalibrated, standardised procedures such as ISO CEN methods.
- The need to consider the variability of bathing conditions within Europe must be taken into account in the proposal.

### **3.5. Further consultations with Member States, stakeholders, experts, non-governmental organisations and the wider public**

Following the Communication<sup>24</sup> the Commission facilitated a large-scale consultation of all interested and involved parties. Comments and suggestions were received in writing, by email and on the Internet, but also during specific consultation meetings. One of the key elements of the consultations was a 3-day Bathing Water Conference during Green Week in April 2000.

Main findings of this consultation process:

- general support for developing a new Bathing Water Directive;
- parameters and values to be based on latest scientific evidence;
- coherence with the new Water Framework Directive as regards monitoring, management approach and obligations, as well as public participation;
- more, better and earlier information to the public;

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<sup>22</sup> *Escherichia coli* and Intestinal enterococci

<sup>23</sup> Opinion expressed at the 23<sup>rd</sup> CSTEED plenary meeting on 24 April 2001

<sup>24</sup> COM(2000) 860

- differences of opinion on the scope of a new Bathing Water Directive, i.e. certain types of recreational waters (for windsurfing etc.) to be included in the scope or not.

Between July 2001 and February 2002 the Commission organised further expert meetings with Member States and regions, stakeholders, non-governmental organisations and the scientific community. The complementary findings can be summarised as follows:

- **The Scope of the Directive:** Reservations by many Member States to expand the scope of the Directive to recreational waters (used for windsurfing, canoeing etc.); reservations were largely related to costs implications.
- **Parameters:** General agreement on restricting the choice to a limited number of microbiological parameters; agreement on the epidemiological correlation between numerical values for these parameters and the ensuing health risk, as put forward in section 4. The available epidemiological correlation provide a coherent basis. Agreement that defining the permissible risk is a political, not a scientific decision; the Commission stressed in this context the need for a high level of protection (article 174 of the Treaty).
- **Management approaches:** Agreement that the Directive should set out principles whilst leaving further details to implementation efforts. On implementation, a broad participation base of national authorities, regional and local bodies, stakeholders, non-governmental organisations and of the Commission was generally supported.

#### **4. THE MAIN LINES OF A PROPOSAL FOR A NEW BATHING WATER DIRECTIVE**

##### **4.1. The Continued importance of EU Bathing Water Policy; coherence with the 6th Environmental Action Programme**

It remains important to protect citizens from risks of bathing in waters of insufficient quality. Waters do not respect administrative and political borders, neither do the impacts of pollution on those waters. Appropriate measures should be based on common quality standards ensuring a high level of protection (article 174 of the Treaty). Whilst the framework and its standards should in a coherent way be provided at EU level, the approach should also provide for sufficient flexibility at the local and regional level. It is at this level that that appropriate and cost effective management approaches can be taken.

##### **4.2. Coherence with EU water policy, in particular the Water Framework Directive**

The EU has recently thoroughly restructured its water protection policy. A new Bathing Water Directive needs to ensure coherence with the Water Framework Directive and form an integral part of this water protection policy. This approach is made operational on the one hand through provisions established under the Water Framework Directive (meaning general objective of 'good ecological status' for all waters plus complementary objectives for so-called 'protected areas' such as bathing waters, with river basin management plans and programmes of measures as the managerial instrument), and on the other hand by choosing parameters, measures, managerial approaches and deadlines for the revised Bathing Water Directive which are compatible with those under the Water Framework Directive efforts.



### **4.3. Scope**

The 1976 Directive's main aim was improving water quality and thereby protecting the health of citizens who use natural water bodies for bathing. At that time, bathing meant mainly 'swimming'. During the past 25 years, a lot of social and technical changes have occurred. New water activities like surfing, wind-surfing, kayaking, etc. have developed. In all these activities, falling into the water, submerging and swallowing of water is commonplace. This also applies for canoeing and kayaking on fresh waters, especially when the sport is practised in a family context, i.e. by non experienced users, as water contact and immersion are rather likely.

These new patterns of recreational water use present significant challenges. First of all, at any given site, windsurfing, kayaking, sailboarding are often practised at significant distances (1 km or more) from the shore. In contrast bathing/swimming typically takes place within a distance of 50 to 100 metres. Secondly, practitioners of these more physically demanding water sports are often prepared to go to sites, which are not suitable for bathing/swimming. Thirdly, with the development of new materials, recreational water sports can now be undertaken over an extended period: far longer than the traditional bathing season. Finally, some of the new recreational uses of water are not always compatible with swimming and bathing, necessitating the division of a bathing area into different zones.

In the light of the above considerations it is legitimate to ask whether the level of protection (in terms of water quality and management practices) which is currently afforded to bathers should be extended to those pursuing other recreational water uses irrespective of location, or time of the year.

The Commission has taken the view that it would not be appropriate to include the new recreational uses of water in the definition of bathing waters as to do so would oblige Member States to significantly increase the extent, both physically and temporally, of water quality protection, monitoring and management obligations.

However, the Commission does consider it appropriate that Member States should improve the level of protection afforded to persons engaging in these newer water sports. To this end, Member States should ensure that relevant information is provided to the public, identifying clearly whether water quality monitoring and other management practices ensure an equal level of protection for practitioners of these sports. This will have an impact on the classification (quality label) which the bathing waters will receive.

### **4.4. Parameters**

The 1976 Directive established 19 parameters, against the then prevailing background of knowledge and experience, existing problems in water quality and the fact that the Directive was amongst the very first pieces of EU water legislation. The Commission now proposes a drastic reduction in the number of parameters, from 19 parameters to 2 key microbiological parameters in the new Directive, complemented by visual inspection (algae bloom, oil) and pH measurement in fresh waters.

The reasons for this proposed drastic reduction are twofold. Firstly, an assessment of monitoring results and trends leads to the conclusion that microbiological pollution is, in the vast majority of cases, the limiting factor for achieving good bathing water quality. Secondly, the Water Framework Directive has established a comprehensive chemical and biological monitoring system for all waters including coastal waters, to be operational by the end of 2006.

In the 1976 Directive three microbiological parameters were monitored (Total Coliforms, Faecal Coliforms and Faecal Streptococci), but the first two parameters are in the same family of bacteria, and the third (Faecal Streptococci) was only taken into account as a guide to better water quality.

The two faecal indicator parameters retained in the revised Directive are Intestinal Enterococci (IE) and *Escherichia coli* (EC), providing the best available match between faecal pollution and health impacts in recreational waters. The choice of the microbiological parameters and values was based on available scientific evidence provided by epidemiological studies<sup>25</sup>.

It is thus evident that the drastic reduction of parameters in a new Bathing Water Directive will provide for considerable reduction of costs, avoid parallel efforts, but at the same time not entail any reduction in the level of protection for the citizens.

#### **4.5. Parametric values**

A WHO epidemiological study<sup>26</sup> examined the relationship between the level of microbiological contamination (based on Intestinal Enterococci / IE as parameter) and the level of illness with people bathing in contaminated water. WHO defined a 1% risk for illness occurrence due to bathing as “an excess illness of one incidence in every 100 exposures”, compared to non-bathers.

The dose-response relation between contamination risk and the 95<sup>th</sup> percentile value of the IE indicator for contracting gastro-enteritis and AFRI<sup>27</sup> by bathing in microbiologically contaminated water is shown in the following graph.

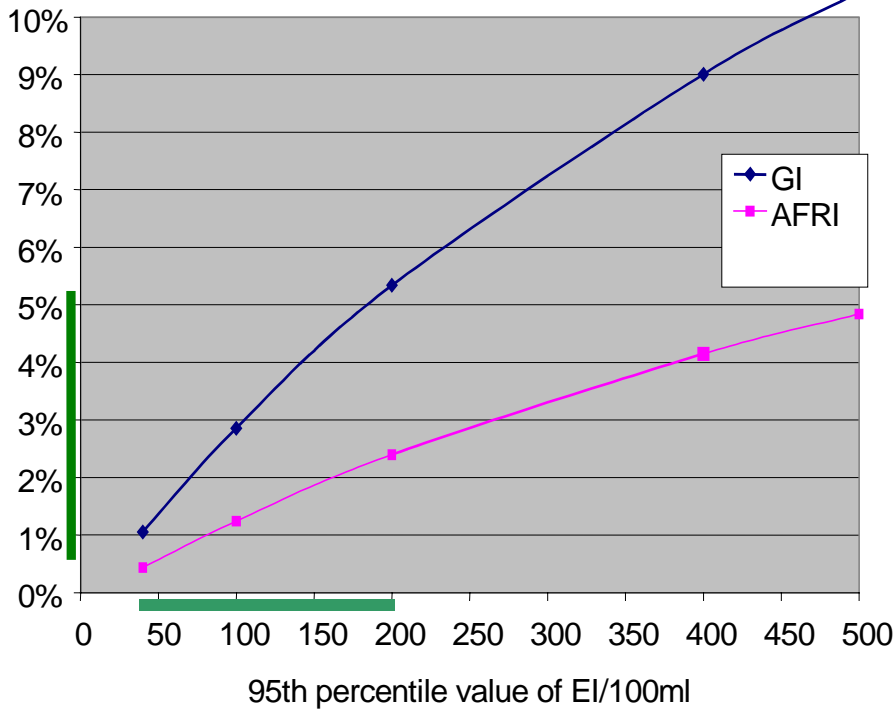
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<sup>25</sup> Institute of General and Environmental Hygiene University of Tübingen (DE) (2000,2001), World Health Organisation (Farnham Report) (2001), Institut de Veille Sanitaire (F) (2001), National Institute of Public Health and the Environment (NL) (1997)

<sup>26</sup> Carried out in the UK from 1989 to 1992 (Kay et al., 1994)

<sup>27</sup> Acute febrile respiratory illness (Fleisher, 1996)

**WHO - Risks for GI and AFRI due to EI exposure**  
 Risk on contracting Gastro-Enteritis (GI) and Respiratory Illnesses (AFRI)



A randomised epidemiological study on health risks from bathing in German fresh water bathing sites<sup>28</sup>, using the same protocol, confirmed WHO research on IE and indicated that an EC to IE ratio ranging from 2 to 3 would be appropriate to reflect equal risk.

Based on these latest studies and taking into account the Treaty requirement to ensure a high level of protection, the Commission therefore proposes a legally binding ‘*Good Quality*’ value and an ‘*Excellent Quality*’ guide value for Intestinal Enterococci and Escherichia coli concentration in bathing water as set out in the following table:

<i>Microbiological Parameters</i>	<i>Excellent Quality (guide)</i>	<i>Good Quality (obligatory)</i>
Intestinal Enterococci (I.E.) in cfu/100 ml	100	200
Escherischia coli (E.C.) in cfu/100 ml	250	500

<sup>28</sup> Carried out by Wiedenmann et al. (2000,2001)

#### **4.6. Considerations on health risk**

The standards proposed are equivalent to a risk of 5% (“Good” Standard) and 3% for contracting gastro-enteritis, and to a risk of 2.5% (“Good” Standard) and 1% for contracting AFRI.

These figures are in line with WHO research<sup>29</sup>. Further, the expertise of the independent Scientific Committee on Toxicity, Ecotoxicity and the Environment (SCTEE) has been sought, the Committee agreeing on both parameters. The Committee considered that the values proposed by the *Communication on Bathing Water Quality*<sup>30</sup> seemed to be in an acceptable range, although on the basis of available data, setting scientifically sound limit values was not possible. Nevertheless the risk level may look alarming. No parent would be comfortable to let their children bathe if there was a 1 in 20 chance of infection. However, the risk values indicated above are based on repetitive exposure to concentrations of contaminants, as high as the proposed ‘Good’ standards. In reality, many bathing waters will have water quality equal to or better than “Excellent”, and reaching the “Excellent” standard will be a marked positive point for the concerned bathing water. Furthermore, risk levels will be further reduced by adequate information of the citizen at or close to the beach and managerial action taken, both based on the profile for the particular bathing water and the results of monitoring.

A comparative assessment of old and new standards leads to the following conclusions: Bathing waters complying with the Guide standards of the 1976 Directive carry a bathing risk of 5% on gastro-enteritis, those complying only with the Imperative standards a risk of about 12% to 15%. The majority of bathing waters comply with the Guide standards of the 1976 Directive (>85% of coastal sites, >70% of freshwater sites).

#### **4.7. Monitoring of bathing waters**

Under the 1976 Bathing Water Directive, Member States have been able to build up a long experience monitoring bathing waters, yet complemented by the implementation of the Urban Wastewater, Nitrates- Water Framework Directives. Monitoring points will be set up when establishing the bathing water profile in places, which reflect the water quality to which bathers are exposed.

There will be flexibility on monitoring frequencies, allowing for a reduction of sampling in bathing waters without major problems, and continued monitoring at routine frequencies in the case of ‘problem’ waters, in particular to ensure early and adequate information to the citizen. Further, quality assurance measures shall address the challenge of reliably providing a sound basis both for information to the public and for managerial action where appropriate.

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<sup>29</sup> Carried out in the UK from 1989 to 1992 (Kay et al., 1994)

<sup>30</sup> Communication COM(2000)860 brought forward 50 IE and 400 EC

#### **4.8. Standards for Handling of Samples**

Relying on data from different assay methods to fix limit values is questionable. Standards on parameter values must be accompanied by harmonised methods used for handling the samples. The way the sample is taken and the way storage and transport is organised may influence the results of the microbiological analysis. To ensure maximum comparability between the analyses carried out in the different Member States, it is therefore considered appropriate to establish guidelines for the handling of samples. The Directive foresees adaptation to new (ISO-CEN)<sup>31</sup> standards which are currently in preparation.

#### **4.9. From sampling and monitoring to adequate management of our bathing waters**

The management of bathing water quality needs to be more than just sampling and monitoring. In the proposed revision, authorities are given an important role in developing bathing water profiles, in identifying potential sources of contamination (with appropriate mitigation measures), in collecting, analysing and interpreting information on water quality and providing information to the public. Also, authorities should react on emergency events and particularly inform the public when bathing is not advisable.

#### **4.10. From numerical ‘compliance’ to management driven conformity**

At the end of each bathing season, monitored data collected during the last three years are assessed, as explained in Annex I. Based on the outcome of the calculation, the bathing waters are classified (see Annex II) as “Poor”, “Good” or “Excellent”. “Excellent“ classification can only be obtained if the quality complies with the standard set down in the directive **and** if management measures have taken into account the range of recreational water uses practised at the bathing area.

A minimum classification “Good” and full monitoring of all parameters are needed to assure Bathing water in conformity to the directive. However, if “Good” classification was not reached, a bathing water will still be regarded as conforming with the directive on condition that appropriate measures are taken to bring the water quality into compliance within a 3 year period. Measures must also be taken to inform the public and to prevent human exposure to pollution.

#### **4.11. Importance of research and technical development**

Research and technical development has in the past contributed to improved knowledge and understanding, in particular on epidemiological correlations. At the same time efforts need to be continued in this field to further develop parameters and methods of analysis delivering even higher reliability and quicker and less costly results, as well as addressing new challenges in water quality. In particular, research on virus detection methods is underway. Continued activity with the EU research programmes<sup>32</sup> will contribute to that aim, allowing adaptation of the Directive to scientific and technical progress.

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<sup>31</sup> (ISO 19458), not yet announced, likely 2004

<sup>32</sup> Commission Proposal for a Decision of the European Parliament and of the Council concerning the multiannual framework programme for research, technological development and demonstration activities aimed at contributing towards the creation of the European research area of 21 February 2001, COM(2001) 94 final

#### **4.12. Regulatory Committee**

A Regulatory Committee shall assist the Commission in addressing, where appropriate, adaptations to scientific and technical progress. This concerns issues such as newly developed parameters ensuring the same level of protection, even more reliable and less costly than the present ones, methods of analysis or the development of guidelines on selected issues of implementation.

#### **4.13. Participatory approaches in developing and implementing the Directive – an example of Good European Governance; subsidiarity**

The Commission has developed the Proposal for a revised Bathing Water Directive in a broad consultation with all interested and involved parties. Such an approach needs to be adopted not only in developing EU environmental legislation, but also in implementing it. Implementation has to involve not only Member States and the Commission, but in particular local and regional bodies, enforcement agencies, stakeholders and NGOs and the scientific community. Such initiatives should provide a further example of Good European Governance as outlined in the Commission White Paper of July 2001<sup>33</sup>.

The new Bathing Water Directive will provide for shared and coherent responsibilities between the EU and Member States and their regions. There is need for defining coherent environmental and health objectives at an EU level, as well as comparable methods of sampling, analysis and evaluation, at the same time ensuring flexibility in issues such as monitoring frequencies or managerial action to address problems in bathing water quality, taking into account local and regional circumstances and making best use of knowledge and experience available in the particular region.

### **5. LEGAL BASIS**

The Commission bases its Proposal on article 175(1) of the Treaty.

### **6. ECONOMIC AND BUSINESS IMPACT ASSESSMENT**

EU Bathing Water Policy has in the past, based on the 1976 Directive, delivered considerable achievements, both in promoting tourism and in improving water quality. In many regions good bathing water quality has been a considerable factor in promoting the tourism industry; the enormous interest by the public and the media in the Commission's annual Bathing Water Report underlines these facts. Efforts for increased protection of waters have at the same time entailed costs for upgrading infrastructure on waste water treatment.

Specific studies that have carried out comprehensive economic assessments of changes in the quality of bathing water are rare in Europe, while several studies have investigated economic issues related partially to water quality improvements. Studies demonstrate the economic importance of bathing water quality improvements, for specific regions and bathing sites as well as for specific economic sectors and businesses. Overall, improving bathing water quality leads to a reduction in human health hazard and treatment costs, an increase in the turn-over of economic sectors (mainly tourism, but also fisheries), an increase in property

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<sup>33</sup> Commission White Paper "Good European Governance" of 25 July 2001, COM(2001)428final

values and the economic value of land, as well as increases in non-monetised effects such as aesthetic and cultural values. As illustrations:

- A GESAMP<sup>34</sup>/WHO study<sup>35</sup> - based on global estimates of the number of tourists who bathe worldwide, and on WHO estimates of the relative risks at various levels of contamination -estimates that bathing in polluted seas causes some 250 million cases of gastro-enteritis and upper respiratory disease every year. Some of these people will be disabled over the longer term. The global impact can be measured by adding up the total years of healthy life that are lost through disease, disability and death using a new measurement - the Disability Adjusted Life Year (DALY) – developed by WHO and the World Bank. When this is done, the world-wide burden of disease incurred by bathing in the sea, adds up to some 400,000 DALYs, comparable to the global impacts of diphtheria and leprosy. It is estimated to cost society, worldwide, about US \$1.6 billion a year.
- Studies undertaken for the *Opal Coast* in the Artois-Picardie river basin<sup>36</sup> in France estimated at between €300 million to €500 million the yearly economic loss that the tourism sector would suffer if the quality of bathing water would deteriorate. These economic losses can be compared with the overall €150 million investments in sewerage and wastewater treatment that have been spent over the last 10 years for obtaining the current bathing water quality;
- A study undertaken for Rhodos Island<sup>37</sup> in Greece assessed the overall benefits of avoiding degradation to the coastal environment from an increasing pressure from tourism. Overall, avoiding degradation would lead to benefits (avoided damage) of €15 millions per year or 3% of the GDP of the island;
- Studies in the United Kingdom<sup>38</sup> estimated for several sites the willingness of people to pay for reducing the risk of illness as a result of revising the existing Bathing Water Quality Directive. On average, people's willingness to pay was estimated at between €25-45 per year.

In preparing the Proposal for a revised Bathing Water Directive, the Commission has, in 2001, commissioned an economic study<sup>39</sup>. The study selected case studies in various regions representing diverse conditions

- coastal waters and freshwaters,
- Northern and Southern waters,
- waters with high and with low tourist presence.

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<sup>34</sup> GESAMP is a advisory body consisting of specialised experts nominated by the Sponsoring Agencies (IMO, FAO, UNESCO-IOC, WMO, WHO, IAEA, UN, UNEP).

<sup>35</sup> A Sea of Troubles ISBN 82-7701-010-9

<sup>36</sup> Agence de l'Eau Artois-Picardie: Qualité de l'eau, tourisme et activités récréatives: la recherche d'un développement durable (1997).

<sup>37</sup> Constantinides, G. 1993: Costs and benefits of measures for the reduction of degradation of the environment from land based sources of pollution in coastal areas. Case study of the Island of Rhodes.

<sup>38</sup> Georgiou, S. et al. 2000: Coastal bathing water health risks: developing a means of assessing the adequacy of proposals to amend the 1976 EC Directive. Risk Decision and Policy, vol.5, pp 49-68.

<sup>39</sup> European Commission. Economic evaluation of the Bathing Water Quality Directive 76/160/EEC and of its revision. A study undertaken for DG Environment, European Commission by WRc in 2001 and 2002 This study is available on <http://forum.europa.eu.int> and <http://forum.europa.eu.int/Public/irc/env/Home/main> (registration is needed).

The study, done in co-operation with Member States, regional and local bodies, focused on the following case studies:

- Fylde coast in England (United Kingdom),
- Barcelona area in the Catalonia region (Spain),
- Célé river in the Aquitaine region (France), and
- Ayrshire coast in Scotland (United Kingdom).

The findings of the case studies lead to the conclusion that for most sites it will be feasible to achieve water quality standards stricter than existing ones. As far as compliance to the current Bathing water Directive is assured, costs remain below foreseen benefits. Given the importance of tourism as regards benefits assessment, benefits will be higher where tourism is important, even for very strict standards.

In areas with a high density of population and/or with CSOs<sup>40</sup> immediately adjacent to bathing waters, increased storage facilities and extensive treatment of urban waste waters are needed as a major measure. In catchments with considerable impact of diffuse pollution, application of codes of good practices for agriculture (in compliance with existing legislation) will already help improving bathing water quality.

Some problems may remain in a limited number of cases requiring more drastic interventions and solutions and where visitors to bathing sites (thus benefits) are very low. Examples to illustrate these general conclusions:

- For the Barcelona area (Spain), where tourism is a significant part of the economy, benefits outweigh costs for all scenarii tested. For example, benefits are estimated at 12 € per visitor per season when the associated costs are only at 4 € per visitor per season, for standards fixed at 200 FS<sup>41</sup> with 95% of the samples complying.
- For the Fylde coast (England) benefits estimated per season visit are higher than costs for a 500 FS standard (at 95% of the samples) but lower than the benefits per person for the 200 FS (at 95% of the samples) standard. But in reality, actions will be necessary to reduce the influence of agricultural diffuse pollution in relation with the Water Framework Directive, the Urban Wastewater Treatment Directive, Nitrate and Shellfish Directive<sup>42</sup>. Reduction of parameter values for these directives will have a beneficial effect on faecal contamination. These measures could reduce the total diffuse pollution abatement costs for the revision of the Bathing Water Directive.
- In Ayrshire, which has less bathers, costs per season visit are above benefits. The key problem is that substantial efforts are needed to meet the existing Bather Water Quality Directive.
- River Célé has no costs for complying with the 200 FS (at 95% of the samples) standard and moderate costs for reaching the highest standard of 40 FS (at 95% of the samples)

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<sup>40</sup> Combined sewer overflows. This is an overflow into a river or sea (or other receiving water body), due to weather conditions like heavy rainfall, of a sewage system designed to receive combined rain water and sewage water.

<sup>41</sup> The study was performed on FS (Faecal Streptococci), which are equivalent to IE (Intestinal Enterococci)

<sup>42</sup> “Costing of the Revision to the Bathing Water Directive”, Report made by DEFRA, UK, May 2002



- The comparison between case studies showed the wide range of measures that would need to be considered in the different bathing sites for reaching stricter bathing water quality standards and dealing with key pollution sources. From more traditional measures, such as increasing CSO storage in the case of Barcelona (Spain) or adding sewerage pipes to connect 100% of the population in the Célé river (France), to removing animals from saltmarshes in the Fylde coast (England) or developing network storage on drainage for grazed fields in the Ayrshire basin (Scotland).

The study illustrates as well the impact of the proposal on monitoring costs. Current monitoring costs linked to the 1976 Bathing Water Directive have been estimated at € 15 million per year. Monitoring and management costs are likely to increase in the short term, as a result of the need to increase the frequency of sampling. However, in the longer term, revision of the Directive will lead to a small reduction in the monitoring costs as polluted bathing sites are cleaned and monitoring frequency reduced.

The results of the cost-benefit analysis suggests that in the case of some existing bathing beaches, waters just cannot meet the proposed standards because of natural bacteriological pollution intrinsic to the site (like birds). If so, it is clear that the proposed legislation could result in these beaches being classified as “poor” or being removed from the list of bathing waters by the Member States.

Bathing water profiles will lead to new initial and maintenance costs, estimated at €13 M per year. However, it is expected that Member States will ensure best integration and synergies between the development of beach profiles and the analysis of impacts and pressures as required for the Water Framework Directive for 2004, and the river basin management plans by 2008-2009. Thus, extra costs resulting from the development of beach profiles will be kept to a minimum. Overall, aggregated monitoring and beach profile costs remain very small as compared to costs of measures required for improving bathing water quality.

It has not proved possible to carry out a full cost-benefit analysis of the implications of the proposed legislation for the EU as a whole. The UK government has however recently published two studies presenting more comprehensive benefits and costs estimates for 470 UK beaches. The benefits study, based on a survey of public willingness to pay, found amenity benefits of some £60 million and health benefits of £62 million, amounting to a total of £122 million. The study found a cost of implementing the proposed 200 FS (95%) standard of some £250 million per year<sup>43</sup>. However, a significant proportion of these estimated costs is attributed to measures to reduce agricultural diffuse pollution. In the report it is indicated that confidence in estimated costs related to agricultural pollution is low. Furthermore, the report characterises these cost projections as ‘conservative over-estimates’.

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<sup>43</sup> Derived using the UK Treasury’s discount rate of 6% : the respective net present costs of the standards are £9.7 million and £3500 million respectively.

Proposal for a

**DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

**concerning the quality of bathing water**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission<sup>44</sup>,

Having regard to the opinion of the Economic and Social Committee<sup>45</sup>,

Having regard to the opinion of the Committee of the Regions<sup>46</sup>,

Acting in accordance with the procedure laid down in Article 251 of the Treaty<sup>47</sup>,

Whereas:

- (1) Building on the Commission's Communication on sustainable development<sup>48</sup>, the European Council has singled out objectives as general guidance for future development in priority areas such as natural resources and public health.
- (2) Water is a scarce natural resource which must be protected, defended and treated as such. Surface waters in particular are renewable resources with a limited capacity to recover from adverse impacts from human activities.
- (3) EU policy on the environment shall aim at a high level of protection, and contribute to pursuing the objectives of preserving, protecting and improving the quality of the environment and of protecting human health.
- (4) European bathing water policy's continued importance is evident each bathing season as it protects the public from accidental and chronic pollution discharged in or near European bathing areas and the overall quality of bathing waters has improved considerably since Council Directive 76/160/EEC of 8 December 1975 concerning the quality of bathing water<sup>49</sup> came into force. That Directive reflects, however, the state of knowledge and experience of the early seventies. Patterns of recreational water use have changed as has the state of scientific and technical knowledge.

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<sup>44</sup> OJ C ..., ..., p. ...

<sup>45</sup> OJ C ..., ..., p. ...

<sup>46</sup> OJ C ..., ..., p. ...

<sup>47</sup> OJ C ..., ..., p. ...

<sup>48</sup> COM(2001) 264

<sup>49</sup> OJ L 31, 5.2.1976, p. 1. Directive as last amended by Directive 91/692/EEC (OJ L 377, 31.12.1991, p. 48).

- (5) In December 2000 the Commission adopted a Communication to the European Parliament and the Council on Developing a new bathing water policy<sup>50</sup> and initiated a large-scale consultation of all interested and involved parties. The main outcomes of this consultation were a general support for developing a new Directive based on the latest scientific evidence and giving particular attention to wider public participation.
- (6) Decision [3618/1/02] of the European Parliament and of the Council of 3 May 2002 laying down the Sixth Community Environment Action Programme contains a commitment to bring forward a proposal for a revision of Directive 76/160/EEC.
- (7) This Directive should use scientific evidence in implementing the most reliable indicator parameters for predicting bacteriological health risk and achieve a high level of protection.
- (8) In order to increase efficiency and wise use of resources this Directive needs to be closely co-ordinated with other Community legislation concerning water such as Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy<sup>51</sup>, Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment<sup>52</sup> and Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources<sup>53</sup>.
- (9) Appropriate information on planned measures and progress on implementation should be disseminated to the community of stakeholders. New technology that allows the public to be informed in an efficient and comparable way on bathing waters across the Community should be applied.
- (10) This Directive should take into account new types of water recreation, which have gained in popularity due to social changes and to new types of sporting materials and equipment.
- (11) For the purpose of monitoring, harmonised methods and practises of analysis need to be applied. Observation and quality assessment over an extended period is necessary in order to get a realistic bathing water classification. Monitoring actions and frequency should, in their turn be related to the bathing water's history and classification, putting emphasis on bathing waters where risks may occur. Conformity should be a matter of appropriate management measures and quality assurance, not merely of measuring and calculation. In parallel, particular attention shall be attached to adherence to quality standards and coherent transition from Directive 76/160/EEC.
- (12) To protect and inform the public timely on exceptional events like floods or infrastructure breakdowns, appropriate emergency plans should be developed, including early warning systems.

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<sup>50</sup> COM(2000)860 final

<sup>51</sup> OJ L 327 of 22.12.2000, p. 1. Directive as amended by Decision No 2455/2001/EC (OJ L 331, 15.12.2001, p.1).

<sup>52</sup> OJ L 135 of 30.5.1991, p. 40. Directive as last amended by Commission Directive 98/15/EC (OJ L 67, 7.3.1998, p. 29).

<sup>53</sup> OJ L 375 of 31.12.1991, p. 1.

- (13) The UN/ECE Convention on Access to Information, Public Participation in Decision Making (the Aarhus Convention<sup>54</sup>), relates “environmental information” to human health and safety and “social economical factors” to environmental decision making. This Directive should be in accordance with the Directive<sup>55</sup> [.../.../...] of the European Parliament and of the Council of [...] on public access to environmental information<sup>56</sup>.
- (14) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission<sup>57</sup>.
- (15) Since the objectives of the proposed action, which aims at reaching throughout the Community good bathing water quality and a high level of protection, cannot be sufficiently achieved by the Member States, without common standards and can therefore be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives.
- (16) Directive 76/160/EEC should be repealed accordingly.

HAVE ADOPTED THIS DIRECTIVE:

#### *Article 1*

#### *Objectives*

For the purpose of preserving, protecting and improving the quality of the environment and of protecting human health this Directive lays down provisions for the monitoring and classification of bathing water quality and for providing information to the public thereof.

It shall, with particular emphasis on environment and health, complement objectives and measures set out in Directive 2000/60/EC.

#### *Article 2*

#### *Scope*

This Directive shall cover all bathing water, with the exception of:

- (1) waters used for therapeutic purposes;
- (2) waters used in swimming pools and spa pools;
- (3) confined waters subject to treatment;

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<sup>54</sup> UNITED NATIONS, ECONOMIC COMMISSION FOR EUROPE, Fourth Ministerial Conference, “Environment for Europe”, Aarhus, Denmark, 23-25 June 1998, ECE/CEP/43

<sup>55</sup> Second reading May 2002

<sup>56</sup> COM(2000) 402

<sup>57</sup> OJ C 184, 17.7.1999, p. 23.

- (4) waters in confined surface waters, artificially created and separated from natural waters like groundwater, surface waters, or coastal water.

### *Article 3*

#### *Definitions*

For the purposes of this Directive, the following definitions shall apply:

- (1) “Bathing water”: all running or still inland surface waters, transitional waters and coastal waters (or parts thereof) where:
  - (a) bathing is not prohibited and is traditionally practised by a large number of bathers, or
  - (b) public bodies or commercial interests actively promote bathing.
- (2) “Bathing season”: the period during which bathers can be expected, in the light of local customs and local rules, taking into account climate and topological conditions.
- (3) “Management measures”: the following measures that are undertaken on bathing water:
  - (a) establishing and maintaining a bathing water profile;
  - (b) establishing a monitoring calendar;
  - (c) monitoring the bathing water;
  - (d) assessing bathing water quality;
  - (e) classifying the bathing water;
  - (f) assessing risks related to sources of pollution;
  - (g) setting up emergency plans and surveillance systems;
  - (h) giving information on bathing water quality to the public;
  - (i) performing actions to prevent human exposure to pollution;
  - (j) performing actions to reduce the risk of pollution and contamination.
- (4) “Other recreational activities”: those activities, where devices are used to move across the water, involving a meaningful risk of swallowing water, such as surfing, windsurfing and kayaking.
- (5) "Transitional waters" and "coastal water" have the same meaning as under Directive 2000/60/EC.

- (6) “Emergency condition”: an exceptional condition, impacting on water quality, and which is not the result of ordinary weather conditions like rainfall or changes in the river flow that happen at regular intervals of less than five years.
- (7) “Set of water quality data”: the collection of data obtained as a result of monitoring.
- (8) “Bathing water quality assessment”: the process of evaluating bathing water quality, following the calculation method defined in Annex I and II.

#### *Article 4*

##### *Quality status*

1. Member States shall ensure that all bathing waters respect a “Good Quality” status, based on values of microbiological parameters which are not less stringent than those set out for parameters 1 and 2 in column C of Annex I, and which are based on assessment and calculation by the method set out in Annex II.
2. Member States shall by measures they consider necessary, promote the achievement of quality standards which conform to those set out in column B ‘excellent quality’ of Annex I, and based on assessment and calculation by the method given in Annex II.

#### *Article 5*

##### *List of bathing waters*

1. Within two years of the entry into force of this Directive, Member States shall establish a list of waters, identified as bathing water.
2. The list shall be reviewed and updated annually to take into account:
  - (a) newly identified bathing waters;
  - (b) waters that have been removed from the list since they no longer fulfil the requirements for being identified as bathing waters
3. Member States shall notify the Commission and the public of the list mentioned in paragraph 1 each year, before the start of the bathing season. At the same time Member States shall notify the Commission and the public of any changes to the list including the reasons for removing waters from the list.

The reasons for removing waters from the list may include changes in customs, changes in the constitution and use of bathing areas, or changes in the topographical conditions of the bathing site.

## *Article 6*

### *Bathing water profile*

1. Member States shall ensure that a bathing water profile is established for each bathing water in accordance with Annex III. The first bathing water profile shall be established within three years following the date laid down in Article 22 (1).
2. The bathing water profile shall be reviewed in accordance with Annex III (f) or when significant construction works or changes in the infrastructure have been carried out at or in the vicinity of the bathing water, which are likely to have an influence on the water quality classification.

## *Article 7*

### *Monitoring*

1. Member States shall ensure that the parameters set out in column A of Annex I are monitored in accordance with Annex IV.
2. A monitoring calendar for each bathing water shall be established and be made public in accordance with Article 16 (2) (b) before the start of each bathing season and for the first time two years after the entry into force of this Directive.
3. Member States may start monitoring the parameters in Annex I during the first full bathing season following the entry into force of this Directive, and may use the results for building up the sets of water quality data, referred to in Article 8. As soon as Member States start monitoring under this Directive, they may cease monitoring of parameters in the Annex to Directive 76/160/EEC .
4. During emergency conditions, the monitoring calendar referred to in paragraph 2 may be suspended. It shall be resumed as soon as practical after the end of the emergency condition.
5. Member States shall report the suspension of the monitoring calendar to the Commission at the first available opportunity. The report shall outline the circumstances of the emergency and, if it is weather related, the calculated return interval of any rainfall or extreme flows which have led to the adverse water quality.

## *Article 8*

### *Bathing water quality assessment*

1. On the basis of the monitoring of parameters 1 and 2 in column A of Annex I Member States shall establish sets of water quality data.
2. A bathing water quality assessment shall be established on the basis of water quality data sets obtained during the preceding three bathing seasons and in accordance with the procedure set out in Annex II.

3. The first bathing water quality assessment shall be established three years following the date laid down in Article 22 (1) at the latest.
4. The assessment shall be repeated every year at the end of the bathing season, taking into account the data collected for that bathing season, as well as of the data for the bathing seasons of the two previous years.
5. When significant construction works or changes in the infrastructure have been carried out at or in the vicinity of the bathing water, which are likely to have an influence on the water quality classification, new bathing water quality data have to be gathered and an assessment is to be made without taking into account the bathing water quality data collected before completion of this infrastructure.

#### *Article 9*

##### *Classification of bathing water quality*

As a result of the yearly assessment of the sets of water quality data, Member States shall classify the water quality of bathing water as “poor”, “good” or “excellent”, in accordance with the criteria set out in Annex II. The first classification shall take place three years following the date laid down in Article 22 (1) at the latest.

#### *Article 10*

##### *Studies and analysis following classification*

1. Bathing waters classified as “poor” shall be subjected to a thorough study and analysis of all the sources and circumstances likely to cause or contribute to its pollution or contamination. These studies and analyses shall be repeated periodically, but not less frequently than once a year. The studies and analysis are aimed at updating the bathing water profile set out in Article 6 and Annex III, and at understanding the risks as a basis for targeted management measures as defined in Article 3 (3) points (f) to (j).
2. Bathing waters classified as “good” shall be subjected to a bi-annual analysis of all the sources and circumstances likely to cause or contribute to its pollution or contamination. This analysis is aimed at updating the bathing water profile set out in Article 6 and Annex III, and at understanding the risks as a base of targeted, preventive management measures.
3. Bathing waters classified as “excellent” shall be subjected to a tri-annual analysis of the bathing water profile in order to have a better understanding of all potential sources and risks of pollution and contamination and to take appropriate measures against them.



4. The studies and analysis mentioned in paragraphs 1, 2 and 3 shall make best use of the data obtained from monitoring and assessments done pursuant to Directive 2000/60/EC, and shall contain at least an assessment of:
  - (a) the conditions prevailing up-stream in the case of inland running water, and
  - (b) the ambient conditions, including conditions prevailing in the catchment area in the case of inland still water and coastal water.

#### *Article 11*

##### *Harmonised standards for treatment of samples*

Member States shall ensure that harmonised standards are used for the handling, analysis, storage and transport of samples as specified in column D of Annex I and in Annex V, in order to reduce the risks of contamination of samples.

The Commission may adopt guidelines for harmonised standards for the handling, analysis, storage and transport of samples under the procedure referred to in Article 20 (2).

#### *Article 12*

##### *Emergency plans*

1. Member States shall establish emergency plans for events such as floods, accidents or infrastructure breakdowns which may have an adverse impact on bathing water quality. Such plans shall identify potential causes and risks of impacts, establish surveillance and/or early warning systems and provide guidance on prevention or mitigation of damage.
2. Member States shall ensure that comprehensive national and/or local surveillance and early-warning systems are established, improved or maintained which will:
  - (a) identify incidents of pollution or significant risks of such incidents which may have an adverse effect on bathing water quality, including those resulting from extreme weather conditions;
  - (b) give prompt and clear notification to the relevant public authorities of such incidents or threats;
  - (c) in the event of any imminent risk to public health, disseminate to those members of the public who may be affected all the relevant information that is held by a public authority and which could help the public to prevent or mitigate harm;
  - (d) make recommendations to the relevant public authorities and, where appropriate, to the public about preventive and remedial actions.

3. Member States shall ensure that the relevant public authorities have the necessary capacity to respond to such incidents or risks in accordance with the relevant emergency plan.
4. Surveillance and early-warning systems, emergency plans and response capacities in relation to incidents and threats to bathing water quality may be combined with those in relation to other matters.

### *Article 13*

#### *Conformity*

1. Bathing water shall be considered to conform with this Directive if:
  - (a) at the end of the bathing season, the bathing water is classified at least as “good”, and
  - (b) the parameters set out in column A of Annex I have been monitored in accordance with Annex IV.
2. Bathing water classified as “poor” shall nevertheless be considered to conform temporarily with the provisions of this Directive, if the following conditions are met:
  - (a) management measures have been undertaken during the bathing season, to prevent human exposure to pollution/contamination and to reduce or eliminate the risk of pollution/contamination, and
  - (b) the causes and reasons for non-conformity are identified, and
  - (c) measures to prevent, reduce or eliminate the pollution/contamination are implemented and are expected to produce positive results within three years, and
  - (d) the public is informed of the causes of the pollution/contamination and all measures undertaken.

If bathing water has still not reached the classification “good” within three years, it shall be considered as not being in conformity with this Directive.

### *Article 14*

#### *Assessment of phytoplankton blooms and macro-algae proliferation and of physico-chemical parameters*

1. For bathing waters which have been revealed physically sensitive to specific toxic phytoplankton blooms or to macro-algae proliferation, analytical measurement shall be undertaken to establish the status of the bathing water in relation to the microbiological parameter 3 in column A of Annex I. For this parameter, positive results obtained on the tests, specified in column D of Annex I, shall be addressed in

terms of investigation and remediation where appropriate, involving public participation as set out in Article 15.

2. Visual inspection and analytical measurement, conform to the tests specified in column D of Annex I, shall be undertaken to establish the status of the bathing water in relation to the physico-chemical parameters 4 to 6 of Annex I. For these parameters, test results deviating from specifications given in column C of Annex I, shall be addressed in terms of investigation and remediation where appropriate, involving public participation as set out in article 15.

### *Article 15*

#### *Public participation*

Member States shall ensure that all interested parties are consulted and allowed to participate in establishing, reviewing and updating the list of bathing waters, bathing water profile and the management measures.

### *Article 16*

#### *Information to the public*

1. Member States shall, in the immediate vicinity of each bathing water, promptly make available and actively disseminate, the following information concerning the bathing water:
  - (a) a non-technical summary of the bathing water profile and the bathing water classification over the last 3 years;
  - (b) an assessment as to whether the monitoring data are relevant for other recreational activities;
  - (c) in the event of a bathing water being removed from the list of bathing waters a notice advising the public of such a removal and giving the reasons for it, shall be put up in the immediate vicinity of the water during the bathing season of the year that the removal takes place and the following year. Such notice shall also indicate to the public the nearest available bathing water.
2. Member States shall use appropriate media and technologies, such as the Internet, to actively and promptly disseminate the information concerning bathing water referred to in paragraph 1 and also the following information:
  - (a) the bathing water's profile and the bathing water's classification, including information in relation to other recreational activities,
  - (b) the monitoring calendar,

- (c) a history of incidents, requiring management measures, in particular of targeted, preventive management measures, undertaken in order to preserve or improve bathing water quality, to protect waters against deterioration, and measures which have been undertaken during the bathing season, to prevent human exposure to pollution/contamination and to reduce or eliminate the risk of pollution/contamination.
3. Information referred to in paragraphs 1 and 2 shall be made available for the first time three years following the date laid down in Article 22 (1).
4. Member States shall encourage the active involvement of all interested parties in the public information process, and in the involvement of the public in issues related to good bathing water quality.

### *Article 17*

#### *Reports*

1. For each bathing water, Member States shall provide the Commission annually, by 31 December at the latest and for the first time within three years following the date laid down in Article 22 (1), with the results of the monitoring data, together with an indication as to whether those data are relevant for other recreational activities in waters adjacent to the sampling points. Member States shall provide the Commission the bathing water assessment annually by 31 December at the latest, for the first time three years following the date laid down in Article 22 (1).
2. When monitoring of data has started under this Directive, annual reporting to the Commission in accordance with paragraph 1 shall continue to be done under Directive 76/160/EEC until a set of water quality data for three years has been made available and a first assessment can be made under this Directive.

During that three year period parameter 1 of the Annex to Directive 76/160/EEC shall not be taken into account in the annual report and for reporting purposes, as well as parameters 2 and 3 of the Annex to Directive 76/160/EEC shall be assumed to be equivalent to parameters 2 and 1 of column A in Annex I to this Directive.

3. The Commission shall publish an annual report on bathing water quality in the Community, including bathing water classifications, conformity with this Directive, and significant managerial measures undertaken. The Commission shall publish this report four months after receiving the reports from Member States. When establishing the report the Commission shall, wherever possible, make best use of data collection, assessment and presentation systems under related Community legislation, in particular Directive 2000/60/EC.

Guidance on the use of such systems may be developed in accordance with the procedure referred to in Article 20(2).

4. Member States and the Commission shall provide information to the public where possible based upon geo-referenced technology, and presented in a harmonised way and through harmonised formats, as set out in Article 16.

## *Article 18*

### *Co-operation on transboundary waters*

Wherever Member States share river basins, involving transboundary impacts on bathing water quality, they shall co-operate as appropriate in implementing this Directive.

## *Article 19*

### *Technical adaptations to the Directive*

1. The methods of analysis for the parameters set out in Annex I may be adapted to scientific and technical progress in accordance with the procedure referred to in Article 20(2).
2. Scientific results obtained on virus detection may also be integrated, completing the list of parameters in Annex I, in accordance with the procedure referred to in Article 20(2).
3. The Commission may in accordance with the procedure referred to in Article 20 (2), adopt technical guidelines on selected issues of implementation relating to bathing water management strategy, information and reporting strategy and approach.

## *Article 20*

### *Committee*

1. The Commission shall be assisted by a committee (hereinafter referred to as “the Committee”) composed of representatives of the Member States and chaired by the representative of the Commission.
2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

3. The Committee shall adopt its rules of procedure.

## *Article 21*

### *Repeal*

1. Directive 76/160/EEC is repealed three years following the date laid down in Article 22 (1). Subject to paragraph 2, this repeal shall be without prejudice to the obligations of the Member States concerning the time-limits for transposition and application set out in the repealed Directive.

2. As soon as a Member State has taken all necessary legal, administrative and practical measures to comply with this Directive, this Directive will be applicable, replacing Directive 76/160/EEC.
3. References to Directive 76/160/EEC shall be construed as references to this Directive.

#### *Article 22*

##### *Implementation*

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by [...] \* at the latest . They shall forthwith inform the Commission thereof.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

2. Member States shall communicate to the Commission the texts of the main provisions of national law, which they adopt in order to implement this Directive.

\* Specific date to be inserted, giving two years to the Member States for the implementation of the Directive.

#### *Article 23*

##### *Entry into force*

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Communities*.

#### *Article 24*

##### *Addressees*

This Directive is addressed to the Member States.

Done at Brussels,

*For the European Parliament*  
*The President*

*For the Council*  
*The President*

## ANNEX I

### Parameters for Bathing Water Quality

	A	B	C	D
	<b>Microbiological Parameters</b>	<b>Excellent Quality</b>	<b>Good Quality</b>	<b>Methods of Analysis</b>
1	Intestinal Enterococci (I.E.) in cfu/100 ml	100 <sup>58</sup>	200 <sup>58</sup>	ISO 7899-
2	Escherischia coli (E.C.) in cfu/100 ml	250 <sup>58</sup>	500 <sup>58</sup>	ISO 9308-1
3	Phytoplankton blooms or macro-algae proliferation <sup>59</sup>		Negative result on tests	Microscopic monitoring <sup>60</sup> , toxicity tests <sup>61</sup> , visual inspection.
	<b>Physico-chemical Parameters</b>	<b>Excellent Quality</b>	<b>Good Quality</b>	<b>Methods of Inpection</b>
4	Mineral oils	-	No film visible on the surface of the water and no odour	Visual and olfactory inspection
5	Tarry residues and floating materials such as wood, plastic, glass, rubber or any other waste substance.	-	Absence	Visual inspection
6	pH <sup>62</sup>	-	6 to 9 No unexplainable variations	Electrometry with calibration on pH 7 and pH 9

<sup>58</sup> Based upon 95 percentile evaluation

<sup>59</sup> Only for sites which have been revealed physically sensitive to specific toxic blooms (eg dinophysis, alexandrium, blue algae)

<sup>60</sup> determination and counting of cells

<sup>61</sup> mouse test, skin test or by direct toxin dosage in plankton cells or water

<sup>62</sup> Only for fresh waters

The 95 percentile value is calculated as defined as follows<sup>63</sup>.

Based upon 95 percentile evaluation of the  $\log_{10}$  normal probability density function of microbiological data acquired from one bathing water; the 95 percentile value is derived as follows:

- (i) take the  $\log_{10}$  value of all bacterial enumerations in the data sequence to be evaluated,
- (ii) calculate the arithmetic mean of the  $\log_{10}$  values ( $\mu$ ),
- (iii) calculate the standard deviation of the  $\log_{10}$  values ( $\sigma$ ).

The upper 95 percentile point of the data probability density function is derived from the following equation:

$$95 \text{ percentile} = \text{antilog} ((\mu) + (1.65 \times \sigma))$$

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<sup>63</sup> Bartram, J and Rees, G (Eds) *Monitoring Bathing Waters*. E and F N Spon, London.



## **ANNEX II**

### **Bathing Water Assessment and Classification**

Bathing waters whose 95 percentile values of microbiological enumerations, based on the bathing water quality data sets gathered during the 3 previous calendar years' period, are worse<sup>64</sup> than the "Good Quality" value of microbiological parameters 1 or 2 stated in Annex I (column C) are classified as of "Poor Quality".

Bathing waters whose 95 percentile values of microbiological enumerations, based on the bathing water quality data gathered during the 3 previous calendar years' period, are equal to or better than the "Good Quality" value of microbiological parameters 1 and 2 stated in Annex I (column C) are classified as of "Good Quality".

Member States may classify bathing waters as of "Excellent Quality" if

- their 95 percentile values on microbiological enumerations, based on the data gathered during the 3 previous calendar years' period, are equal to or better<sup>65</sup> than the "Excellent Quality" value of microbiological parameters 1 and 2 stated in Annex I (column A) and,
- the length of the bathing season and management measures reflect other recreational activities practised.

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<sup>64</sup> Meaning: 'higher concentration values expressed in cfu/100 ml'

<sup>65</sup> Meaning: 'lower concentration values expressed in cfu/100 ml'

### ANNEX III

#### **The Bathing Water Profile**

With reference to Article 6, such a bathing water profile consists of

- a) a description of the physical, geographical and hydrological characteristics of the bathing water;
- b) an identification – quantitative and qualitative - of all potential sources of pollution;
- c) an assessment of their potential to pollute bathing water, thus impairing the health of bathers. This assessment should be made, in terms of time - accidental or chronic risk potential - and in terms of the nature and volume of all polluting and potentially polluting discharges and their effects assessed in terms of distance from the bathing water.

Elements a) and b) should also be provided on a detailed map.

Other relevant information may be attached or included as deemed appropriate.

- d) a description of the monitoring points;
- e) an assessment whether this monitoring provides as well representative information for other recreational activities practised with a similar risk of swallowing water as bathing (e.g. windsurfing, kayaking).
- f) the bathing water profile will be updated following the attached schedule

<b>Bathing Water Classification</b>	<b>Excellent</b>	<b>Good</b>	<b>Poor</b>
Bathing water profile update	Every 3 years	Every 2 years	To be determined in relation to the nature and severity of the risk but not less frequently than once a year, at the start of the bathing season.
Aspects to be assessed	Update of (a) (b) and (e)	Update of (a), (b) and (c)	Update of (a) (b) and (c)

## ANNEX IV

### **Bathing Water Monitoring Frequency**

The frequency for routine monitoring is set to **2 analysed samples per month**, where a month is a four week period, with each started week considered as whole. As a function of the bathing water classification, the monitoring frequency is:

<b>Bathing Water Classification</b>	<b>Excellent</b> (samples per month)	<b>Good</b> (samples per month)	<b>Poor</b> (samples per month)
During 1 period of 3 years	0.5	1	2
During 2 consecutive periods of 3 years	0.25	0.5	2

One extra sample is to be taken one week before the start of the bathing season. Taking into account this extra sample, in no circumstance there should be less than two samples taken and analysed per bathing season.

## ANNEX V

### **Standards for Handling of Samples**

#### **1. Samples should be taken following the guidelines hereafter**

The sampling point is on the location where on a bathing water, on average throughout the bathing season, most bathers will be found.

#### **2. Sterilisation of the sample bottles**

Sterilisation in autoclave for at least 15 minutes at 121°C
Or dry sterilisation at 160°C - 170°C for minimum 1 hour
Or use irradiated sample containers directly from manufacturer

#### **3. Sampling**

The volume of the sampling bottle/container depends on the quantity of water needed for each parameter to be tested. The minimum content is generally 250 ml.
Sample containers must be of transparent and non-coloured material (glass, polyethene or polypropylene)
In order to prevent accidental contamination of the sample, the sampler should employ an aseptic technique to maintain the sterility of the sample bottles. There is no further need for sterile equipment (such as sterile 'chirurgical' gloves or by means tongs or sample pole) if this is done properly.
The sample should be clearly identified in indelible ink on the sample and on the sampling form

#### **4. Storage and transport of the samples before analysis**

The water sample should at all stages of the transport be protected from exposure to light, in particular direct sunlight.
The sample should be conserved at a temperature of around 4°C, in a cool box or refrigerator (if possible) until arrival at the laboratory. If the transport to the laboratory is likely to take more than 4 hours, then transport in a refrigerator is highly recommended.
The time between the sampling and the analysis should be kept as short as possible. It is recommended to analyse the samples on the same working day. If this is not possible for practical reasons, then the samples must be processed within maximum 24 hours, provided that the samples are stored in the dark and as close to 4°C as possible.

## **COMMENTS TO “LEGISLATIVE FINANCIAL STATEMENT”**

This Proposal aims at a revision of the existing 1976 Bathing Water Directive, in line with the Commission’s commitments under the 6<sup>th</sup> Environmental Action Programme. There will be no additional resources implications for the Commission than the present ones under the 1976 Directive. This applies to budget resources as well as to staff resources.

## **IMPACT ASSESSMENT FORM**

### **THE IMPACT OF THE PROPOSAL ON BUSINESS WITH SPECIAL REFERENCE TO SMALL AND MEDIUM-SIZED ENTERPRISES( SMEs)**

#### **TITLE OF PROPOSAL**

Proposal for a Directive of the European Parliament and of the Council concerning the Quality of Bathing Water

#### **DOCUMENT REFERENCE NUMBER**

#### **THE PROPOSAL**

Taking account of the principle of subsidiarity, why is Community legislation necessary in this area and what are its main aims?

The present Proposal foresees a revision of the 1976 Bathing Water Directive, one of the most successful elements of European Water Policy. The 1976 Directive has resulted in an unprecedented public awareness, as bathing water quality is perceived by the citizens as directly touching upon their daily life. The annual Bathing Water Report published by the Commission each year before the start of the bathing season, clearly underlines substantial progress in the quality of our bathing waters.

The new Bathing Water Directive will provide for shared and coherent responsibilities between the EU and Member States and their regions. There is need for defining coherent environmental and health objectives at an EU level, as well as comparable methods of sampling, analysis and evaluation, at the same time ensuring flexibility in issues such as monitoring frequencies or managerial action to address problems in bathing water quality, taking into account local and regional circumstances and making best use of knowledge and experience available in the particular region.

#### **THE IMPACT ON BUSINESS**

EU Bathing Water Policy has in the past, based on the 1976 Directive, delivered considerable achievements, both in promoting tourism and in improving water quality. In many regions good bathing water quality has been a considerable factor in promoting the tourism industry; the enormous interest by the public and the media in the Commission's annual Bathing Water Report underlines these facts. Efforts for increased protection of waters have at the same time entailed costs for upgrading infrastructure on waste water treatment. Specific studies that have carried out comprehensive economic assessments of changes in the quality of bathing water are rare in Europe, while several studies have investigated economic issues related to water quality improvements partially. Studies demonstrate the economic importance of bathing water quality improvements, for specific regions and bathing sites as well as for specific economic sectors and businesses. Overall, improving bathing water quality leads to a reduction in human health hazard and treatment costs, an increase in the turn-over of economic sectors (mainly tourism, but also fisheries), an increase in property values and the economic value of land, as well as increases in non-monetised effects such as aesthetic and cultural values. As illustrations:

- A GESAMP<sup>66</sup>/WHO study<sup>67</sup> - based on global estimates of the number of tourists who bathe worldwide, and on WHO estimates of the relative risks at various levels of contamination -estimates that bathing in polluted seas causes some 250 million cases of gastro-enteritis and upper respiratory disease every year. Some of these people will be disabled over the longer term. The global impact can be measured by adding up the total years of healthy life that are lost through disease, disability and death using a new measurement - the Disability Adjusted Life Year (DALY) – developed by WHO and the World Bank. When this is done, the world-wide burden of disease incurred by bathing in the sea, adds up to some 400,000 DALYs, comparable to the global impacts of diphtheria and leprosy. It is estimate to cost society, worldwide, about US \$1.6 billion a year.
- Studies undertaken for the *Opal Coast* in the Artois-Picardie river basin<sup>68</sup> in France estimated at between €300 million to €500 million the yearly economic loss that the tourism sector would suffer if the quality of bathing water would deteriorate. These economic losses can be compared with the overall €150 million investments in sewerage and wastewater treatment that have been spent over the last 10 years for obtaining the current bathing water quality;
- A study undertaken for Rhodos Island<sup>69</sup> in Greece assessed the overall benefits of avoiding degradation to the coastal environment from an increasing pressure from tourism. Overall, avoiding degradation would lead to benefits (avoided damage) of € 15 millions per year or 3% of the GDP of the island;
- Studies in the United Kingdom<sup>70</sup> estimated for study sites people’s willingness to pay for illness risk reduction that would derive from revising the existing Bathing Water Quality Directive. Average people’s willingness to pay was estimated at between €25-45 per year.

In preparing the Proposal for a new Bathing Water Directive, the Commission has in 2001 commissioned an economic study<sup>71</sup> to further develop understanding. The study selected case studies in various regions representing diverse conditions

- coastal waters and freshwaters,
- Northern and Southern waters,
- waters with high and with low tourist presence.

The findings of the case studies lead to the conclusion that for most sites it will be feasible to achieve water quality standards stricter than existing ones at costs that remain below foreseen

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<sup>66</sup> GESAMP is a advisory body consisting of specialised experts nominated by the Sponsoring Agencies (IMO, FAO, UNESCO-IOC, WMO, WHO, IAEA, UN, UNEP).

<sup>67</sup> A Sea of Troubles ISBN 82-7701-010-9

<sup>68</sup> Agence de l’Eau Artois-Picardie: Qualité de l’eau, tourisme et activités récréatives: la recherche d’un développement durable (1997).

<sup>69</sup> Constantinides, G. 1993: Costs and benefits of measures for the reduction of degradation of the environment from land based sources of pollution in coastal areas. Case study of the Island of Rhodes.

<sup>70</sup> Georgiou, S. et al. 2000: Coastal bathing water health risks: developing a means of assessing the adequacy of proposals to amend the 1976 EC Directive. Risk Decision and Policy, vol.5, pp 49-68.

<sup>71</sup> European Commission. Economic evaluation of the Bathing Water Quality Directive 76/160/EEC and of its revision. A study undertaken for DG Environment, European Commission by WRc.

benefits. Given the importance of tourism as regards benefits assessment, benefits will be higher where tourism is important, even for very strict standards. In catchments with considerable impact of diffuse pollution, application of codes of good practices for agriculture (in compliance with existing legislation) will already help improving bathing water quality. Some problems may remain in a limited number of cases requiring more drastic interventions and solutions and where visitors to bathing sites (thus benefits) are very low and/or where further investments are still needed to reach the standards of the current Bathing Water Directive..

## **CONSULTATION**

The Commission has developed the Proposal for a new Bathing Water Directive in a broad consultation with all interested and involved parties, following inter alia the line leading to the successful adoption of the Water Framework Directive. Such new participatory approaches need to be taken not only in developing EU environmental legislation, but also in implementing it – similar to the ongoing efforts on implementing the Water Framework Directive. Such implementation efforts have to involve not only Member States and the Commission, but in particular local and regional bodies, enforcement agencies, stakeholders and NGOs and the scientific community. Such implementation efforts should provide a further example of Good European Governance as outlined in the Commission White Paper of July 2001.