

# Appendix to the Background Document for stakeholder meeting on the evaluation of the DWD: Evaluation grid Tuesday, 26 May 2015, Brussels

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## Evaluation grid on relevance

Criteria	Relevance
Evaluation questions	<p>Are the overall objectives of the Directive (still) relevant for the protection of human health?</p> <p>Which parameters and related parametric values are relevant for the protection of drinking water quality?</p> <p>What is the relevance of the Directive's articles related to i) standard setting; ii) monitoring, iii) proactive and remedial measures and iv) communication?</p> <p>What is the scope of the Directive and to what extent does it cover the needs of all EU citizens?</p>
Understanding of the questions	<p>The premise of the DWD is that drinking water quality is of direct relevance to human health and also reflects the levels of contaminants in the raw water (surface water and groundwater), and the effectiveness of water treatment and water distribution systems. Assessing the relevance of the DWD thus seeks answers at various levels. At the highest level, the evaluation looks if there is a causal link between drinking water quality and health. At a lower level, we look at the instrument itself and ask: are the components of the DWD (still) relevant to reach their stated objective?</p> <p>To verify the relevance (and indeed effectiveness) of the DWD at the level of protecting human health will go beyond the remit of this evaluation. We will therefore work on the generally accepted assumption that clean drinking water is vital for public health.</p> <p>This evaluation will therefore accept the premise of the DWD's relevance for human health and concentrate on an evaluation of the underlying idea that the DWD's mandatory parametric values are relevant and thus require mandatory monitoring obligations and an obligation for information to the population. An assessment of possible health effects derived indirectly through information on the exceedance of parametric values will be the subject of a separate study under this project, conducted in parallel with this evaluation. The percentage exceedance will not be included in this assessment of relevance. Where a parameter does not seem very relevant and is never (or hardly ever) exceeded, it would be a candidate for removal from monitoring (in view of REFIT: simplify approach). The evaluation will formulate advice based on both aspects<sup>1</sup>. It should be noted that an evaluation of each of the four main interventions of the DWD, i.e. i) standard setting; ii) monitoring, iii) proactive and remedial actions and iv) communication, as described in the Directive's articles, against the five evaluation criteria (see above), is not what is aimed for in this study. This is based on the argument that as soon as it is relevant that a particular parameter with a related parametric value is included in Annex I of the DWD, because an exceedance may cause health effects, it is automatically relevant to include monitoring of this parameter, include remedial actions in case of exceedance of its parametric value, and communicate about the water quality.</p> <p>Apart from questions on parameters, the DWD also <b>contains provisions for proactive and remedial actions and for informing the public</b>. For both provisions our questions will attempt to answer the question: what if the provision would not be there.</p> <p>The scope of the DWD is not wide enough to protect all European citizens because small water supplies are not covered. Furthermore, the DWD does not cover the household installation. These aspects will be reviewed in this study.</p>

<sup>1</sup> Note that According to Article 4.1.a. we have to still to assess parameters at MS level if relevant and not in DWD

Sub-questions	Judgement Criteria	Evaluation method	Indicators	Sources
Which parameters (distinguishing microbiological, chemical) and related values are relevant for the protection of drinking water quality and have relevance at EU level?	A health effect is expected when the standard is exceeded	Assess for each of the distinguished parameters listed in Annexes of the DWD whether standard setting is relevant for the protection of drinking water. If not, it is irrelevant and of course also not effective nor efficient. Analysis on the basis of expert judgement: i) Knowledge about health effects at exceedance and ii) Regulation of the parameter in countries such as US.	As it may not be feasible to obtain quantitative information, we will use relative scores to indicate the measure of relevance: highly relevant (++), relevant (+) or irrelevant (-)	Experts within the team (KWR/ Alterra), based on other sources, e.g. drinking water parameters regulated by EPA <a href="http://water.epa.gov/lawsregs/rulesregs/sdwa/currentregulations.cfm#one">http://water.epa.gov/lawsregs/rulesregs/sdwa/currentregulations.cfm#one</a>
Which other parameters should be monitored (now missing in Annex I of the DWD) that are important for human health <sup>2</sup>	Parameter is judged to have negative health effect if level exceed a certain threshold in drinking water.	Expert judgement based on i) Knowledge about health effects of unmeasured parameters; and ii) Regulation of the parameter in other countries such as US; iii) ask feedback through interviews with experts (telephone and other means).	The parameter considered	Team expertise; Drinking water parameters regulated by EPA <a href="http://water.epa.gov/lawsregs/rulesregs/sdwa/currentregulations.cfm#one">http://water.epa.gov/lawsregs/rulesregs/sdwa/currentregulations.cfm#one</a>
Are there other approaches (e.g. risk based) than drinking water monitoring at the tap in view of exceeding standards that are more relevant to protect human health?	Can the same objective be achieved (with comparable or lower risk)?	Investigate countries who are opting for alternative approaches within legal frameworks (both within and outside EU)	Costs and risk factors	Expertise within the consultant team. Interviews with regulators /administrators
What would be the impact of repealing the DWD?	The overall judgement on the DWD is "not relevant".	The question what would happen if the DWD would be repealed will be considered in part II of the study where the impact of the various options will be assessed.	n.a.	Based on the results of in part II of the study.

<sup>2</sup> Please note that this question is not included in the scope of the present study

## Evaluation grid on effectiveness

Criteria	Effectiveness
Evaluation questions	<p>To what extent has the Directive achieved its objectives?</p> <p>What have been the (unintended) effects of the DWD beyond protecting human health?</p> <p>Is the scope of the current DWD sufficient to protect all citizens in the EU</p>
Understanding of the questions	<p>Similar to the approach under relevance, the effectiveness of the DWD in terms of protecting human health will be the topic of a separate study under this project.</p> <p>The focus of the present evaluation will be on the degree in which the Directive has reduced contamination of water intended for human consumption and has improved consumer satisfaction.</p> <p>Changes in water quality over time will be presented in terms of (i) non-compliance (exceedance of parametric values) of relevant parameters and (ii) maximum and median concentrations of non-compliance values. The latter will be based on excel sheets that are available since 2005-2007 up to 2011-2013 (the latter still being under assessment). For the non-compliance, we will include the decade before in our analysis, where we have country reports (starting from 1993) with data on non-compliances, although not on concentrations.</p> <p>Furthermore, the contribution of the different provisions (setting standards, monitoring, remediation and communication) to the objective will be assessed. Finally, the implementation of the DWD may have resulted in other effect than protecting human health , e.g. the environment viz. through nitrate and pesticides standards. These unintended effects may be both positive and negative.</p>

Sub-questions	Judgement Criteria	Evaluation method	Indicators	Sources
Has the DWD reduced the contamination of water intended for human consumption?	Reductions in non-compliances and in concentrations of distinguished in relevant microbial and chemical or indicator parameters	<ul style="list-style-type: none"> <li>Data collection by evaluation of country reports (up to 1998)</li> <li>Data analysis in MS excel sheets on measured parameter concentrations in drinking water (only up to 2005)</li> </ul>	% changes in compliance rates or concentrations, distinguished for relevant microbial, chemical or indicator parameters between 1998-2000 vs 2008-2013 the parameter considered	MS country reports
Are consumer satisfied with the quality of drinking water?	The public consultations shows that consumers in the EU are satisfied with the quality of drinking water. An effect on consumer satisfaction related to taste or colour/visibility is expected when the standard is exceeded	Analyse the result of the public consultation. Consumer satisfaction can be analysed from reports (such as the report on the recent Public Consultation). Consumer satisfaction with the water and the water company can also be “predicted” using a “lime scaling” (or calcium carbonate scaling) method. <sup>3</sup> and the percentage of people that use drinking water from the tap.	% consumer satisfaction related to (i) taste (“Hard” water or Chlorinated water), (ii) colour/visibility (“Brown” water) and (iii) contamination (nitrates; pesticides, metals) Levels of or calcium carbonate	Public consultation report Literature studies on “lime scaling”  Study on drinking water quality in several cities
Has DWD provided Member States and the water supply industry with a stable base for their planning and investment?	MS and supply industry have been able to plan their investments in a timely fashion	Interviews	Size of investments and planning horizons	Experts at MS level
Have there been instances that the DWD or MS have failed to protect drinking water leading to impacts on human health and what have been the reasons?	Inadequate parameters or a failure to implement current requirements etc. cf. Art. 10	Interviews and desk study	Allocation (in %) of circumstances in case of exceedance (health effects)?	Experts (drinking water associations) and literature

<sup>3</sup> [http://www.kwrwater.nl/Limescale\\_determines\\_consumer\\_satisfaction/](http://www.kwrwater.nl/Limescale_determines_consumer_satisfaction/)

Sub-questions	Judgement Criteria	Evaluation method	Indicators	Sources
To what extent is monitoring of drinking water quality at the tap the most optimal method to ensure the quality of drinking water	Alternative methods, such as the water safety plan approach (i.e., intelligent monitoring at relevant places within the water supply chain), that give the same or better results,	Interviews and desk study	Critical values for microbial parameters	Expertise within the team Stakeholder meeting
To what extent is monitoring of the quality of water the most optimal method to determine the quality of drinking water	Alternative methods, such as the water safety plan approach, that give the same results,	Literature research and consultation with experts/stakeholders	Existence of alternative measures in MS or countries outside EU	Expertise within the team Stakeholder meeting
Have consumers been informed immediately of any deviations from the standards of the Directive and of any danger to human health which might ensue from this?	(Timing of) communications in deviations	Review of two or three cases where remedial actions took place	Actions and time	Expertise within the team, stakeholders to provide relevant case studies
To what extent does making available up-to-date information to consumers and report to the Commission contribute to the achievement of the Directive's objective?	Functioning of the information procedure/structure	Review in two or three countries, the type of information made available and assess of the effectiveness of the communication messages. Assess the reason for sending out messages. Availability of websites and info available on water quality and other means of communication e.g. water supply companies, water bill, city hall etc.	Reasons, numbers, types, and frequencies of communications	Internet search, interviews with stakeholders, databases of regulators (accessible through internet) EC 2013, <i>Development of a Concept for the Future of Reporting under the Drinking Water Directive</i>

Sub-questions	Judgement Criteria	Evaluation method	Indicators	Sources
<p>What results, if any, did the DWD achieve beyond protecting human health (Intended, non-intended, positive and negative)?</p> <p>Creating awareness?</p>	<p>Possible environmental effects.</p> <p>This is true if (i) the parameter involved has adverse environmental impacts above a threshold, (ii) there is no other legislation/ directives with parametric values for those parameters that are comparable or lower (link with coherence)</p>	<p>Interviews and desk study</p>	<p>Economic pressure</p> <p>Scientific progress and different use with regard to anthropogenic substances, intensified use of new and emerging substances fertilization</p>	<p>Expertise within the team</p> <p>Stakeholder meeting</p>

## Evaluation grid on efficiency

Criteria	Efficiency
Evaluation questions	<p>To what extent are the costs involved with implementing the DWD justified given the changes which have been achieved?</p> <p>What have been the factors influencing the efficiency of the DWD?</p>
Understanding of the questions	<p>The aspect of efficiency is to show whether the DWD has attained its objectives at reasonable costs. What is reasonable is subject to a high margin of discretion and there is no systematic information available as to what degree the DWD is efficient. .</p> <p>Directly related to this issue of cost we will assess to which extend the DWD can be simplified and it's administrative burden reduced.</p> <p>Efficiency can be derived by comparing costs with the effects (changes achieved). The costs associated with the implementation of the DWD are the administrative costs (standard setting and implementation and communication) and operational costs (treatment, remedial actions and monitoring, analytical and chemicals cost). Different approaches for monitoring are in place. Besides looking at only the costs and effects of treatment and monitoring, good practices of treatment and monitoring approaches will be analysed.</p>



Sub-questions	Judgement Criteria	Evaluation method	Indicators	Sources
<p>Are costs for (a) treatment, (b) standard setting, implementation and communication and (c) for monitoring and remedial actions justified in view of the changes of compliance rates or concentration</p>	<p>Costs versus % changes in compliance rates or concentrations, distinguished in relevant microbial, chemical or indicator parameters between 1998-2000 (and when possible also before 1998) vs 2008-2013.</p>	<p>Compare costs estimations with the outcome of the effectiveness analysis</p>	<p>a) investments in treatments  b) costs for standard setting and implementation, communication  c) costs of sampling and monitoring (analytical cost, chemicals and apparatus)and remedial actions  d) % changes in compliance rates or concentrations, distinguished in relevant microbial, chemical or indicator parameters between 1998-2000 vs 2008-2013 the parameter considered</p>	<p>- Existing documentation  - Interviews with drinking water suppliers  - MS country reports for changes in compliance rates or concentrations</p>
<p>Which approaches to monitoring are considered most cost-effective?</p>	<p>The MS indicate a preference for the most cost-effective method.</p>	<p>Interviews and desk research on good practices of monitoring approaches  We will focus on the preference of respondents for either the precautionary of the risk based approach? (possible questions: do you consider a risk based approach more cost-effective?)</p>		<p>Interviews with drinking water suppliers</p>

## Evaluation grid on coherence and value added

Criteria	Coherence and value added
Evaluation questions	<p>To what extent is the Directive coherent with other legislation in the same policy area?</p> <p>To what extent is the Directive internally coherent?</p> <p>What has been the EU added value of the Directive?</p>
Understanding of the questions	<p><b>Coherence with other legislation</b></p> <p>There is a number of Directives (e.g. the Groundwater Directive (2006/118/EC), the Water Framework Directive (2000/60/EC), the Pesticides Use Regulation (2009/1107/EC), Construction Products Regulation (89/106/EEC), Nitrates Directive, Food Directive (2002/72/EC ), and the Environmental Quality Standards Directive (2008/105/EC) which have a direct or indirect bearing on the DWD. The issue of coherence is especially relevant when considering the requirements of the DWD in relation to the effectuation of the Water Framework Directive (WFD) and the Groundwater Directive (GWD). There are issues of coordination and alignment between the DWD, WFD and GWD which include a.o. standards for substances, monitoring, risk assessment and safety planning methodologies, safeguard zones for both groundwater and surface water, and measures to improve water quality around drinking water abstractions. However, alignment is not limited to the WFD and GWD. For instance, horizontal chemicals legislation (REACH) and the Classification, Labelling and Packaging, Regulations, as well as legislation on biocidal products and plant protection products, provide baseline protection for human health and the environment. The overlap and contradictions between the different directives will be analysed and their impact on the implementation of DWD assessed.</p> <p><b>Internal coherence</b></p> <p>Internal coherence checks to what extent working towards the objective of one provisions of the DWD stands in the way of successfully achieving the objective of other provisions.</p> <p>There are already a number of known inconsistencies in the DWD:</p> <ul style="list-style-type: none"> <li>• Sampling method for lead, copper and nickel and the responsibility of the water supplier/MS that ends at the legal point to delivery. Who checks where non-compliance comes from if water does not comply at the tap.</li> <li>• Is there a check by the MS on the quality and impact on drinking water of the in-house/plumbing installation?</li> <li>• Article 10 needs to be made active and linked to an assessment/certification system.</li> <li>• The standards for surface water (WFD) are not based on drinking water quality requirements. E.g. if for some pesticides the standards for surface water are higher than 0.1 ug/l (based on ecotox data) than water suppliers need to introduce more treatment to comply with the DWD. Inconsistency with the implementation of the WFD.</li> <li>• Not clear how is Article 4a implemented in the MS.</li> </ul> <p><b>The added value</b> of the DWD can be related to both its objectives and its capacity to integrate with the existing (other) regulatory framework. Whereas the first looks at the (added) value of setting EU standards and related obligations, compared to regulating this at MS level, the second looks foremost at how the EU regulatory framework in the water domain supports the DWD. In addition (for illustrative purposes only), we will look at legislation of drinking water in other regions in the world.</p>

Sub-questions	Judgement Criteria	Evaluation method	Indicators	Sources
To what extent are there overlaps or contradictions of similar issues between the DWD provisions and other relevant EU directives?	Overlap or contradictions of DWD articles with other EU legal acts which aim to reduce loadings or concentrations of the distinguished parameters	Comparison of the various pieces of EU regulation <sup>4</sup>	Legal provisions in DWD and other EU directives	EUR-Lex. Experts KWR Alterra
What is the impact of above discussed overlaps or contradictions on implementation of DWD	Do the overlaps facilitate or complicate achievement of the DWD objectives?	Analysis of the effects of overlaps or contradictions for the implementation of the DWD.	Legal provisions in other EU directives	EUR-Lex Expert judgement
How does EU legislation compares with what is in place elsewhere ( i.,e. in North America?)	Similar objective, but different methods and values Water Safety Plan risk assessment risk management approach Australia and WHO	Desk study: Compare EU legislation and its effectiveness (based on effectiveness evaluation) with what is in place else in comparable regions, i.,e. in North America Comparing standards and compliance with standards.	n.a.	Literature REGNET, that has produced an overview of how drinking water quality is regulated elsewhere

<sup>4</sup> E.g. the Pesticides Framework Directive (2009/128/EC), Environmental Quality Standards Directive (2008/105/EC), and the Groundwater Directive (2006/118/EC). The latter two (and the DWD) are daughter directives of the Water Framework Directive (WFD) (2000/60/EC).

