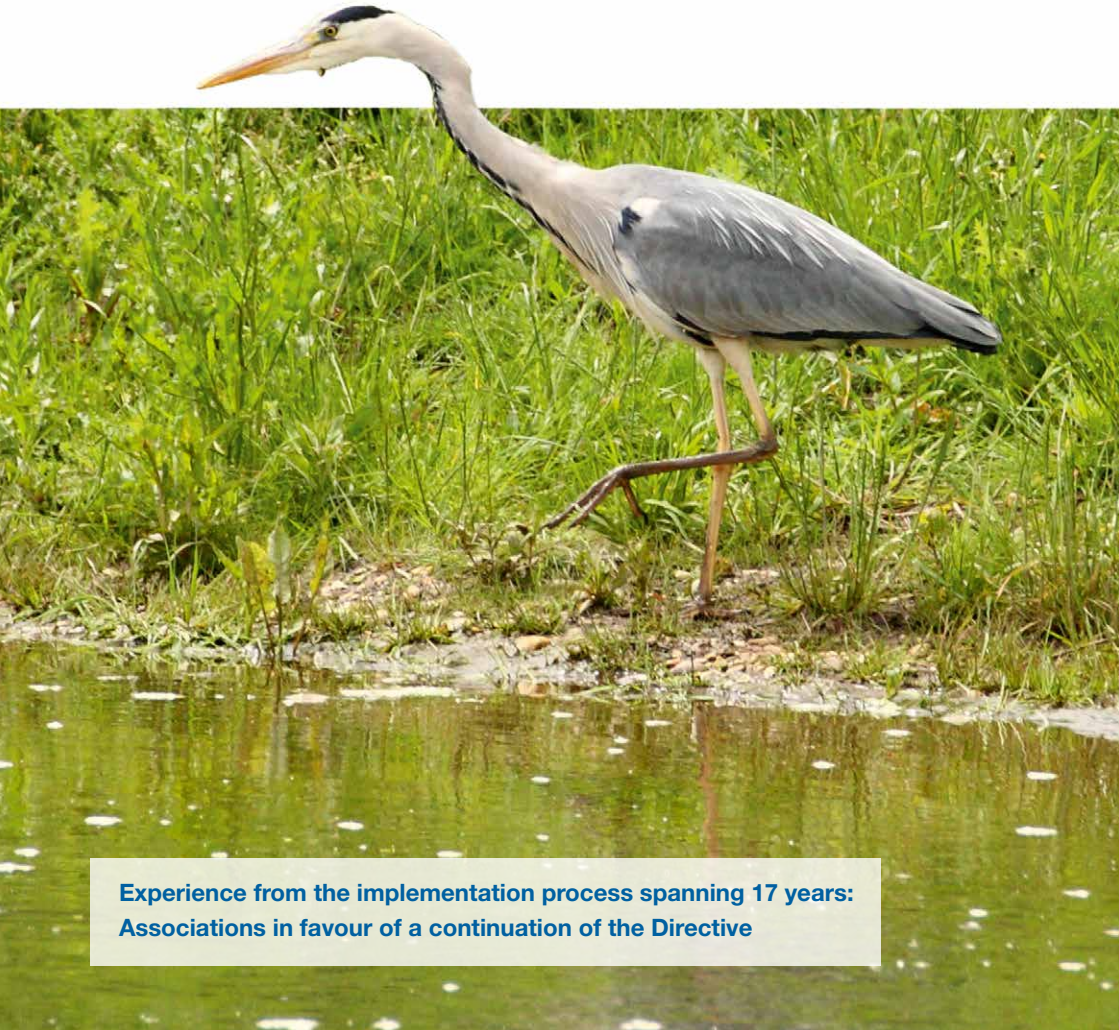
agw Position Paper

drafted in the context of the forthcoming review and possible revision of the European Water Framework Directive (WFD)



Experience from the implementation process spanning 17 years: Associations in favour of a continuation of the Directive

The Water Management Association in North Rhine-Westphalia (Arbeitsgemeinschaft der Wasserwirtschaftsverbände NRW (agw))

is made up of Aggerverband, Bergisch-Rheinischer Wasserverband, Emschergenossenschaft, Erftverband, Linksniederrheinische Entwässerungs-Genossenschaft, Lippeverband, Niersverband, Ruhrverband, Wahnbachtalsperrenverband, Wasserverband Eifel-Rur and Wupperverband. All of these public institutions are responsible for managing water resources in the federal state of North Rhine-Westphalia (NRW), Germany. Our maxim: Water management in public responsibility. The member associations of agw are responsible for around two-thirds of the territory of the federal state (Land) of NRW. They operate 37 dams as well as 300 wastewater treatment plants, which in total treat the wastewater of approximately 19 million people. Further, they are responsible for the maintenance of around 17,700 kilometres of water courses. The water management associations in NRW engage in holistic river basin management beyond municipal boundaries, in accordance with the European Water Framework Directive (WFD).

Preliminary remarks

agw welcomes the fact that the WFD is to be reviewed and, if necessary, readjusted 19 years after it entered into force, namely in 2019. With our proposals we would like to contribute our experience with the implementation of the Directive to the forthcoming consultations. The good ecological and chemical status is part of the sustainability strategy and a service of general interest and therefore one of the key premises in EU environmental policy. Furthermore future generations are to be given the opportunity to experience the diversity and beauty of water bodies and the chance to make use of their resources.

The main goal of the WFD is to achieve the good ecological and chemical status of water bodies. In the view of **agw** it is indisputable that in a densely populated country like Germany, the good ecological status or good ecological potential can be reached primarily through measures carried out on and in water bodies. This includes first and foremost the improvement of the water structure and hydraulics, and the establishment of ecological continuity. It should be noted here that pollution caused by anthropogenic trace substances is not, as a rule, the determining factor for the status of ecological water quality in Germany. The reason for this is the high standard of municipal and commercial wastewater treatment throughout the country. This situation may differ in other EU Member States.

In view of the already visible positive developments of our water bodies since the introduction of the WFD, **agw** is of the opinion that it would be meaningful to continue the process initiated in the EU with the WFD. Based on the experience we have acquired from the implementation process in situ, we would like to contribute to the discussion at an early stage.

The agw positions in detail:

1. Review of the duration of the management cycles and the timeline for meeting the objectives

The results of the 3rd monitoring cycle have shown that changes in biological water quality do not usually emerge in the short term but require observation periods of up to ten years or longer. With the present three management cycles, the existing Directive imposes a tight timeframe on the Member States within which they have to decide whether to continue with existing measures or initiate new ones. In Germany at least, the speed of the implementation process is slowed down by the time required for administrative tasks such as planning, approvals, land acquisition as well as the limited availability of land. For that reason, an assessment should be made as to whether the six-year management cycles should be adapted in favour of longer cycles. This must not, however, lead to a situation where the necessary measures are postponed to some

point in the distant future or the actual objective of the Directive is lost from sight. The stringent implementation of the WFD should be continued.

In view of this, the associations are of the opinion that the restoration of very badly damaged and degraded aquatic ecosystems and biocenoses in Europe will take longer than the 15 years originally envisaged in Article 4 of the Directive or the estimated 27 years resulting from the twofold management cycle extension. Recolonisation with species that have become rare but are necessary for a good assessment result or for the stream functions cannot be “decreed”, if these species are no longer present in the surrounding areas. Bearing in mind the positions formulated below with regard to the definition of the requirements demanded for good status, it would seem necessary to extend the previously envisaged implementation period of 27 years by two additional management cycles of ten years each.

Given the deterioration ban, efforts must be made to pursue a continuous improvement process, like the one

already in place for chemical substances, without imposing any excessive time requirements.

2. The “one out - all out” approach – Difficult to convey progress made

The “one out - all out” approach prevents changes in water bodies – normally improvements – resulting from implementation of the WFD being perceived by policymakers and the general public. This could eventually lead to the entire process of the WFD being fundamentally challenged. In our opinion the possibility of differentiated and separate presentation of ubiquitous substances in the management plans is a first step in the right direction, and would enable the positive improvements achieved with a great deal of effort to be appropriately communicated and presented.

3. Consideration of ubiquitous substances in the WFD

With regard to ubiquitous substances it should be noted that as a general principle the desired improvements with regard to these parameters, such as mercury or polycyclic aromatic hydrocarbons (PAHs), cannot be achieved by means of water management measures alone, but require a holistic approach that takes into account all entry routes and all compartments (including soil and air). There is therefore justification in calling for these substances to be presented separately without putting any pressure for action on water management.

In this context we wish to note that a continuous improvement process should be the objective for ubiquitous substances, too, without imposing any excessive time requirements.

4. Environmental quality standards for priority substances must be derived in a realistic manner

agw is of the opinion that determining environmental quality standards (EQSs) for chemical substances for the purpose of describing the good chemical status

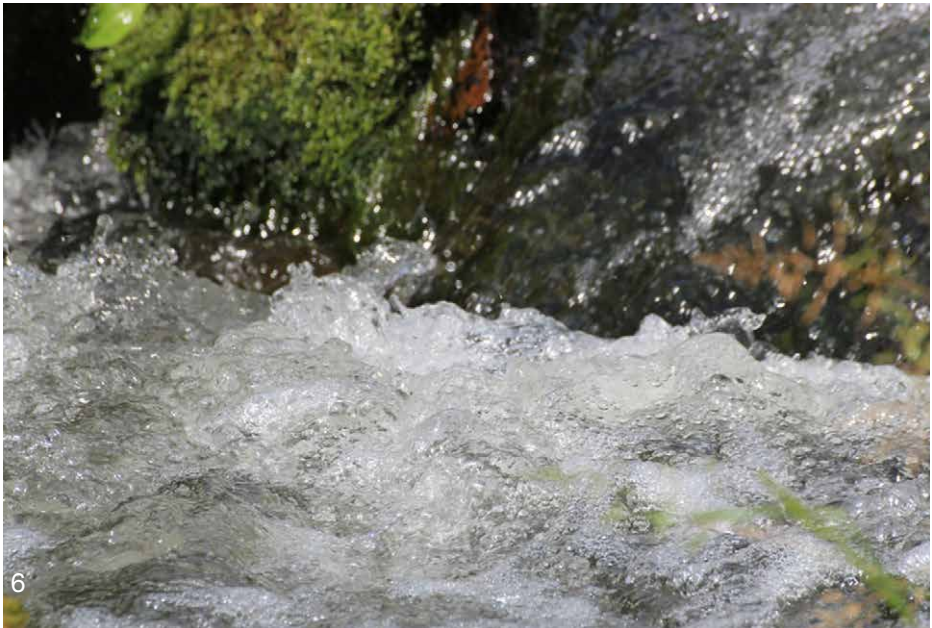
of water bodies by the EU makes a significant and necessary contribution to the sustainable protection of water bodies in the Member States which is, in principle, to be maintained. In this

context, however, environmental quality standards (EQS) based on very high safety factors have been set in the past for priority substances for which insufficient information about their behaviour in the aquatic environment was available. This led to EQSs being introduced at concentrations which are not measurable and thus cannot be enforced by the public authorities either. To avoid this in future, only scientifically substantiated values should be introduced, bearing in mind the possibilities for enforcement, analysis and measures. The introduction of a watch list is, in our opinion, a step in the right direction.

The Directive envisages the review and supplementation of the list of priority substances every six years. In the past this led to tighter requirements for existing substances and extensions to the list as new substances were added. When it comes to the representability of positive developments for individual substances and given a fixed time horizon, this approach is not helpful.

5. Agreed holistic strategic approach to pharmaceuticals needed otherwise Member States might take unilateral action

So far, Directive 2013/39/EU of the European Parliament and of the Council of 12 August 2013 has not added any pharmaceuticals with a derived EQS to the list of priority substances in the field of water policy. Instead, the European Commission has opted for the watch list. Furthermore, Article 8c of the EQS Directive contains a mandate for the European Commission to submit a strategic approach to pharmaceuticals within two years. So far this has not been the case. In our opinion this is essential because otherwise there is a danger that



water policy within the European Union could become fragmented. Particularly when it comes to the specified regular updating of the list of priority substances, we believe there is a very urgent need for this strategy. Otherwise, the question of pharmaceutical residues will rest solely on the shoulders of the institutions responsible for water bodies. In this context, strict compliance with the polluter-pays principle is of the utmost importance for achieving a sustainable reduction in the levels of pharmaceuticals entering the water cycle. For this, a holistic approach is imperative, beginning with the design of pharmaceuticals (biodegradable pharmaceuticals), putting them on the market, prescription practice, and package sizes through to the disposal of pharmaceutical left overs, and involves all the main stakeholders.

6. Greater consideration of a process-oriented approach when implementing the measures / Additions to the conceptual orientation of the measurement systems selected for the implementation of the WFD

In our opinion, expansion of existing assessment systems (in Germany: PERLODES/ASTERICS, FIBS and PHYLIB) is needed in order to assess the long-term ecological development of water bodies. The present systems merely record the number and type of species found but not the underlying processes in a habitat.

Based on the DPSIR approach, the State is measured, but the Impact of the Pressures is usually given cursory or curtailed consideration. Normally, for reasons of simplification, efforts are made to derive the Impact from the State rather than measuring it in an independent process. This leads to the wrong conclusions in which efforts are made to derive the Response – frequently as a correlation – directly from the State.

There are a number of independent measurement methods to examine the processes in water bodies and their disruption, i.e. the impact; frequently,

though, they are not in general use and have not yet been standardised. For running water bodies they include, for instance, analysis of oxygen and pH amplitudes, examination of the trophic level achieved depending on grazing and lighting, analysis of bottom sediment permeability, sediment activity and morphodynamics, water temperatures, nutrient quality (e.g. N:C ratio) and other methods. It is possible to derive specific successful improvement measures once the relevant disruptions to the processes have been identified.

In contrast, it is only possible to influence the composition of biocenoses (the “State”) indirectly and with a significant degree of uncertainty by means of concrete measures because of present major gaps in knowledge about the precise life requirements of the more than one thousand species examined. This composition is, for instance, dependent on the possible speeds of species distribution, the network of biotopes, ecosystemal involvement and other possible confounders which may also be located outside the water body. For that reason the evaluation approaches which have so far focused solely on analysing species structure should, in our opinion, be supplemented by process-oriented approaches and interconnected. This is something also specifically envisaged by the WFD (good status is the status

within which “the functioning of the type specific ecosystem” is ensured; 1.2.1. Definitions). Extensive fundamental research on understanding the process and developing standardised measurement methods is needed here in order to make scientifically substantiated decisions on the measures to be developed and the public authority tools.

7. Review of the biological assessment for water body systems

Prior experience in evaluating water bodies based on the existing German provisions has prompted doubts about the robustness or the interpretation of the results of some methods. This is explained in the following using the example of diatoms and their link with the phosphorus parameter. The nationwide use of fertiliser on agricultural land in Germany has led to an increase in the parameters of total phosphorus (TP) and ortho-phosphate (o-P) to levels far higher than under natural conditions in almost all water bodies in Germany, beginning at source. This also applies to many other European countries. Furthermore, high levels of phosphate are stored in soil and the chemical is still required for agricultural production. There is a need for discussion as to whether under these circumstances the highly oligotrophic diatoms currently selected to indicate a “low level of anthropogenic pollution”, i.e. “good status”, can serve as the target status. We believe there is a need for improvement here along the lines of broader expert discussion and more extensive scientific discourse about the impact of the nutrients on the plant quality components.

8. Review of the impact of invasive species on the assessment of water bodies

The increase in global trade and the interdependence of international trading routes has led to the increased presence of invasive species in EU water bodies. Some aquatic ecosystems have since been colonised by invasive species (for instance the Rhine), in some cases quite heavily. Based on the existing assessment system their occurrence generally leads to a poorer evaluation of biological water quality. As a rule, invasive species are deemed to bring about irreversible changes to ecosystems. They are, therefore, to be treated accordingly as a component when deriving the “good status” pursuant to the legal framework of the WFD. Water systems that are intensively shaped by invasive species have not been given appropriate consideration in the derivation of the “good status” up to now as, according to our understanding, “good status” should also be achievable with invasive species. In this context, it should be noted that the current poor evaluation even applies when the water body is already deemed to have the “good status” required by the Directive with regard to the other parameters. In the assessment systems selected by Germany to

implement the WFD (PERLODES/ASTERICS, PHYLIB, FIBS), it should also be possible to achieve “good status” in the presence of invasive species.

9. Consideration of “zooplankton” when evaluating standing water bodies better suited than “macrozoobenthos”

The EC WFD (2000) makes reference inter alia to macrozoobenthos besides other biological quality components for the evaluation of the ecological status and ecological potential of standing water bodies.

In our opinion the quality component macrozoobenthos instead of the intended quality component zooplankton ended up in the final version of the original Directive, as the result of a transcription error. The term “planktonic invertebrates” (zooplankton) was initially used in the English version and subsequently changed to “aquatic invertebrates” (= benthic invertebrate fauna, macrozoobenthos) without realising the resulting change in content. Zooplankton is a relevant quality component in standing water bodies and is the link between phytoplankton and fish in the food web.

Macrozoobenthos, that only colonises a narrow area close to the banks in standing water bodies, is not a suitable indicator for statements on the physical or hydromorphological quality of a standing water body. This is also

confirmed by the findings of an attempt to develop an assessment method for the macrozoobenthos of standing water bodies commissioned by LAWA. It is therefore suggested to replace the quality component macroinvertebrates or macrozoobenthos for standing water bodies by the relevant quality component “zooplankton”.

The following comments refer more particularly to the concrete implementation of the WFD in Germany and at federal state level (NRW).

10. Further efforts regarding nitrate

In recent years the water management associations in NRW have largely implemented the EU catalogue of requirements for point sources in the water sector (100% compliance with the EU Urban Waste Water Treatment Directive). As a result, they have made a major contribution to reducing nutrient inputs into water bodies. Nonetheless, the inputs from diffuse sources, in particular nitrate from agriculture, remain on a similarly high level throughout Germany. In our opinion, the efforts to reduce nitrate input into water bodies from diffuse sources must be significantly intensified as all other efforts to reach the objectives will otherwise be of no avail.

11. Cost effectiveness of the measures

The WFD already takes cost effectiveness into account inter alia when defining the environmental objectives for water bodies and setting limit values for priority substances. The framework conditions for evaluating the cost effectiveness of individual measures should, however, be formulated more clearly. If, because of existing framework conditions for example, specific environmental objectives cannot be achieved (for instance because pipework could not be dismantled), then no demands going beyond the generally recognised rules of technology may be made in respect of discharges, either. It should only be possible for a supervisory authority to call for more extensive measures if the objective can be achieved in an overall concept – also taking cost effectiveness into account.

12. Impact of the ECJ judgment on the deterioration ban – Create uniform framework conditions

Pursuant to the judgment of the Court of Justice of the European Communities - ECJ (C-461/13) the Member States are bound to refuse approval for a concrete project if the status of at least one quality component of the status of surface water bodies deteriorates by one class within the meaning of Annex V to the

Directive, unless an exemption has been granted. In our opinion this requires a reliable and uniform nationwide framework. So far, no forecasting methods are available for this which would make it possible to predict the impact of individual projects on individual biological quality components.

13. Shortage of specialists, lack of basic knowledge and non-aligned public authority structure impede the implementation of the Directive

It has become evident that there is a shortage of specialists at all institutions involved in the enforcement of the Directive (for instance, public authorities, municipalities, associations). This is particularly relevant inasmuch as biology is the main scientific foundation for assessing the quality of water bodies.

The persistent lack of basic knowledge about the functioning and structure of various limnic ecosystems makes the targeted orientation of measures difficult. The temporal and spatial problems linked to successful implementation do not mean that the objective of achieving a good ecological status is wrong. That simply means the time needed is more than the envisaged three management cycles.

In this context it is striking to note that in Germany, for example, the public authority structure does not correlate with the holistic management required at river basin level. Consequently, the necessary professional and scientific expertise must be amassed and maintained in parallel in various public authorities. This has proved to be a problem because of the limited number of experts available.

14. Involvement of the general public – Communicability of requirements to policy makers, media and public authorities

Apart from the lack of basic knowledge at enforcement level already noted, it is still clear after completion of the 1st evaluation cycle that, given the complexity of the subject, the general public, policy makers and media are not in a position to evaluate the outcomes of the measures in water bodies or to fully appreciate the overall objectives. Several thousand pages of basic principles concerning the forthcoming management questions and the resulting draft management plans and programmes of measures are in themselves sufficient to make a sound evaluation very difficult, even for experts, let alone for the interested public.

Accelerated requirements in the WFD as a consequence of extended or tougher requirements – e.g. the list of priority substances – also create the impression among the general public that the situation in water bodies is continuously deteriorating even though innumerable noteworthy improvements have already been made. As the successful implementation of the WFD is not possible without the support of the media and the general public, this aspect should play a role in the review of the Directive.

15. Positive impact of the WFD on other areas

The implementation of the WFD has demonstrated that the impact of the improvements is not restricted to water alone. Thanks to the improved quality and structure/hydromorphology of surface water bodies, there is also added value for nature and people, such as greater human identification with the water body or improvements in biodiversity and habitat structures in the wider water environment.

Another major component of European policy, namely the creation of new jobs, in this case not merely in the water sector (e.g. also tourism), has been achieved through implementation of the WFD.

These soft effects or cultural ecosystem services of the WFD can lead to greater acceptance of the implementation processes by society.

Overview of our positions

1. Review of the duration of the management cycles and the timeline for meeting the objectives
2. The “one out - all out” approach – Difficult to convey progress made
3. Consideration of all entry routes and environmental compartments of the ubiquitous substances of the WFD
4. Environmental quality standards for priority substances must be derived in a realistic manner
5. Agreed holistic strategic approach to pharmaceuticals needed otherwise Member States might take unilateral action
6. Greater consideration of a process-oriented approach when implementing the measures / Additions to the conceptual orientation of the measurement systems selected for the implementation of the WFD
7. Review of the biological assessment for water bodies
8. Review of the impact of invasive species on the assessment of water bodies
9. Consideration of “zooplankton” when evaluating standing water bodies better suited than “macrozoobenthos”
10. Greater efforts to reduce nitrate input from diffuse sources needed
11. Clarification of the framework conditions for assessing the cost effectiveness of measures
12. Impact of the ECJ judgment on the deterioration ban – create uniform framework conditions
13. Shortage of specialists, lack of basic knowledge and non-aligned public authority structure impede the implementation of the Directive
14. Involvement of the general public – Communicability of requirements to policy makers, media and public authorities
15. Positive impact of WFD on other areas can lead to higher acceptance of the implementation processes by society

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Am Erftverband 6, 50126 Bergheim, Germany

Tel. 0049 (0)2271 88-1278, Fax 0049 (0)2271 88-1365
info@agw-nw.de, www.agw-nw.de

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wvgw mbH
Josef-Wirmer-Str. 3, 53123 Bonn, Germany
www.wvgw.de

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