

ONEMA Meetings

Monitoring programmes: WFD requirements, their implementation and use of the results

A workshop co-organised by Onema and IOWater in Plovdiv, Bulgaria, on 13 November 2013, just ahead of the Europe-INBO annual conference on 14 and 15 November 2013.

The purpose of the workshop organised in Bulgaria in November 2013 was to facilitate discussions between European river basins on monitoring of water and aquatic environments, with the European commission and the European environment agency on hand, and to enhance the common implementation strategy for the WFD. The point was to discuss monitoring results and the impact of monitoring on implementation of management plans and programmes of measures. The debates and discussions were divided into three main sections, namely the purposes of the monitoring programmes, stakeholder organisation and roles, and monitoring strategies. The conclusions drawn and recommendations made may be integrated in the future WFD cycles.

The monitoring programme required by the Water Framework Directive (WFD) is an indispensable step toward better knowledge of aquatic environments. It is also a prerequisite in defining management plans and programmes of measures, as well as a key factor in the continuous-improvement approach recommended by the WFD throughout the management cycles. Data acquisition is thus much more than a simple reporting requirement, it is an important component in reaching and preserving the good status of water bodies.

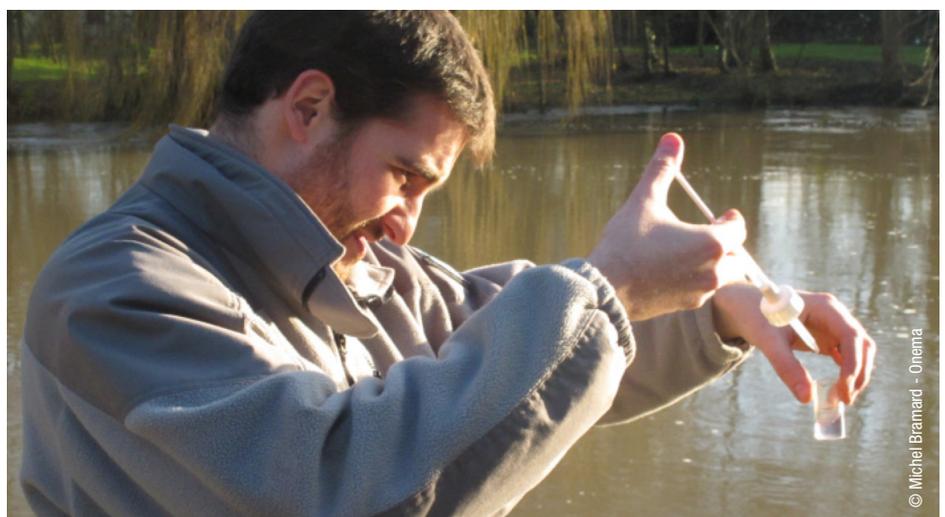
Purposes of the monitoring programmes

Assist decision-making for various policies

The primary objective of monitoring is to assist decision-making concerning the work required to enhance the effectiveness of water policies. Decisions should result in optimum use of the available funds and personnel.

To that end, it is necessary to rationalise the organisation of the monitoring programmes and the dissemination of results in order to better integrate the various objectives (set by EU directives, national or transboundary agreements, etc.). Monitoring of aquatic environments already existed in most EU countries, however the WFD produced clear improvements in monitoring objectives, conditions and organisation.

But monitoring objectives must still be expanded to take into account the many requirements concerning information on water bodies. Better consistency and enhanced synergy are required between the WFD and the other EU directives, e.g. the Marine strategy framework directive and the Nitrates directive, given the similar objectives and issues.



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In addition, efforts to develop new tools, e.g. models and biotope monitoring, are required to meet the challenges of new problems such as emerging pollutants. Finally, the links between local and WFD monitoring programmes must be strengthened to ensure true synergy between programmes often having similar if not the same objectives.

Better inform the public and decision-makers

A further goal of the monitoring programme is to provide access to knowledge on water and aquatic environments. Access to monitoring results must be facilitated for a much wider public. That is an essential factor in enhancing the participation of the public and reinforcing its understanding of future challenges and the efforts that will be required.

During the first WFD cycle, the Member States attempted primarily to meet WFD requirements (notably concerning efforts to characterise water bodies, see Figure 1), but today, greater importance must be placed on the rational processing and use of the data, as well as on their wider dissemination.

Current practices often consist of governmental services or organisations on the river-basin level providing local stakeholders and the public with results produced by the monitoring networks. The provision of the data may take place through public meetings, informational documents and/or internet sites. The results for each monitoring point are generally supplied yearly or every two years. The results of assessments on the status of water bodies are generally published every three years.

Going beyond simple provision, work must be put into developing the tools required to better understand and communicate the data to decision-makers and the general public. The monitoring programme could be a communication tool in and of itself if it is based on standardised techniques making it easier to understand, compare and use the information. There are already requests for dashboards on the sub-basin scale, combining a number of indicators on states, pressures and responses. These data could be downloaded from dedicated internet sites following selection by the user of the desired geographic area.

Stakeholder organisation and roles

Ensuring oversight

The organisation of the monitoring process is complex and includes defining the programmes, funding, sampling, analysis, collection and processing of the results, as well as overall coordination and supervision. That is why the appointment of a single supervisor is highly recommended. The supervisor should be a member of a governmental organisation or of the basin agency or authority in charge of planning (i.e. the main user of the monitoring data) in order to improve management and selection of the most suitable action in light of the local issues at hand.

Local stakeholders may be involved via any additional programmes, however their limited size and great diversity in each river basin make them difficult to coordinate. In addition, local programmes often target specific, local issues and cover time periods that, in some cases, do not correspond to national programming cycles.

In a vast majority of EU Member States, WFD monitoring programmes are funded and coordinated by governmental services or organisations, even if they are run in part by private subcontractors.

Beate Werner,
European environment agency

EEA's mandate is to collect data to demonstrate state and trends of improvement of the aquatic environment. For the past decade dataflow has existed on nutrients and hazardous substances concentrations in rivers and lakes (EIONET). To assess policy relative to WFD effectiveness, the reporting of monitoring data should be linked to the **DPSIR (Driving forces - Pressures - State - Impacts - Responses)** framework. Source apportionment linked to sectors will help handling this, so that we can assess in which sectors there is improvement, and also address what it costs to reduce further emissions. National methodologies should be transparent in order to know how they can be used for assessment.

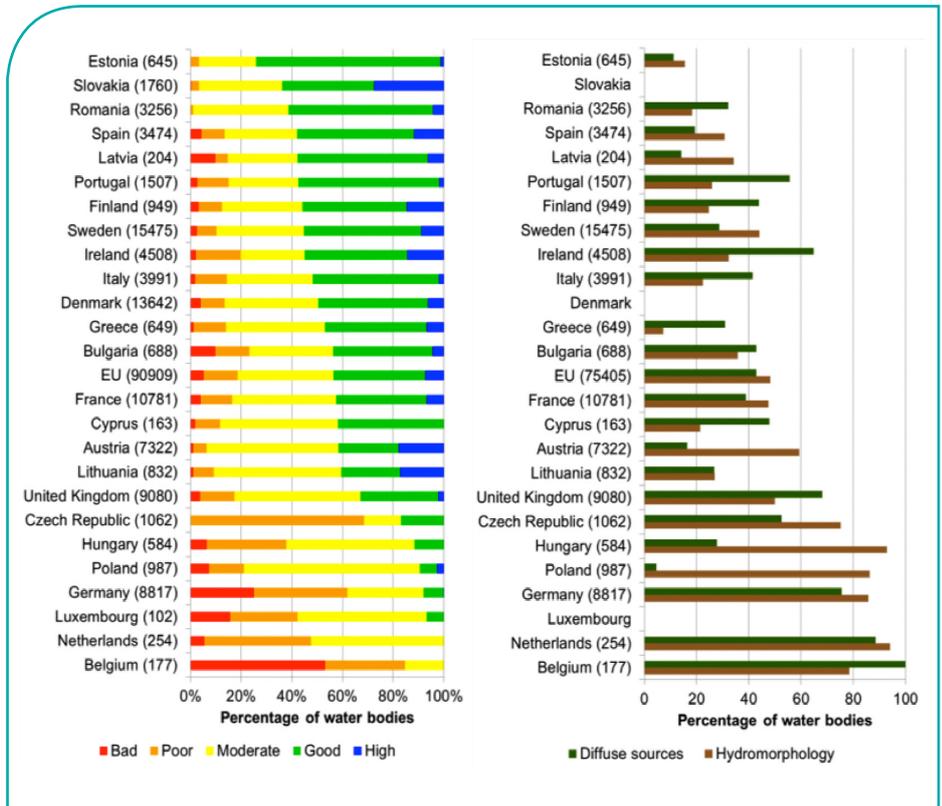


Figure 1. Ecological status of rivers and sources of pressures in the EU countries.

This is of the utmost importance to ensure data collection over the long term, the sustainability of the programme and its reliability, as well as the consistency and quality of the data.

In a context of multiple monitoring stakeholders, the issues of data ownership and quality policy require further study in order to reinforce the systems bringing several participants into play.

Finally, cross-border monitoring strategies and programmes are important aspects that must be developed to enhance confidence between countries. They contribute to ensuring the consistency and effectiveness of policies addressing water and aquatic environments on both sides of borders.

Ensuring funding

A majority of funding sources for monitoring programmes are public. They originate in governmental services via national budgets and/or specific funding programmes for environmental protection. In compliance with the principle that “water pays for water”, the public organisations managing monitoring programmes should be funded through taxes and fees for water. The importance of ensuring the future funding of monitoring programmes by public budgets must be stressed. The latter offer better guarantees for the sustainability and reliability of programmes. However, this does not mean that private stakeholders should not be involved in funding systems.



Strategy of the monitoring programmes

A spatial-temporal design to cover needs

Given the different WFD requirements, different criteria are used to set up monitoring networks in each river basin, e.g. size of the basin, types of water bodies, surface areas or total lengths of water bodies (surveillance monitoring), water bodies listed as being at risk (operational monitoring). Depending on the type of monitoring, the distribution of monitoring points must take into account the pressures weighing on water bodies. For example, for surveillance monitoring, monitoring points must be carefully selected to avoid proximity with sources of pollution, industrial installations and dams.

In addition, older monitoring points must be continued wherever possible, given the value of longer data series. Older data are of great importance in determining trends and demonstrating the value of programmes of measures. The frequency of monitoring must also be adjusted to provide sufficient data for a reliable assessment of the status of water bodies, as required by the WFD.

In the final analysis, the number and density of monitoring points vary among the Member States (see Figure 2) depending on the natural and human context, the past history of available data and the importance accorded to monitoring of water bodies at risk of not achieving good status.

Designing relevant methods and indicators for action

WFD monitoring must not be limited to select representative monitoring points and producing data. The work must consist to a large degree of designing measurement methods and protocols.

Subsequently, the major elements must be the interpretation of data and their dissemination.

The participants stressed that the indicators used to characterise the status of water bodies are too general, i.e. they cannot be updated on an annual basis. They cannot reflect the effectiveness of the work carried out over a WFD cycle (six years). There is also a real need for less aggregated indicators that could be productively used on the national and local levels. Such “sub-indicators” would enable elected officials and the general public to better understand the results of the tremendous amount of work undertaken for the WFD. Some progress is expected to result from new biological indicators and trend indicators.

Finally, the monitoring strategy must be adaptable over time to take into account new technologies, in particular to become (or remain) as effective as possible in terms of WFD requirements.

Conclusions

Monitoring policy is a fundamental component in water policy

Above and beyond WFD requirements, the monitoring programme is a powerful tool to support water policies. It is a key element in acquiring general knowledge on water quality and on the pressures caused by human activities. It must be taken into account and built into the planning process in order to set up checks on the overall objectives and the work, on both the national and local levels. This provides useful information to decision-makers who will establish guidelines for water policy and make the necessary decisions on the specific measures to be implemented.

Rivers		Lakes		Transitional waters		Coastal waters		Groundwater		
Surv.	Op.	Surv.	Op.	Surv.	Op.	Surv.	Op.	Surv.	Op.	Quant.
16 214	56 381	2 829	4 750	2 395	2 631	2 585	2 838	25 814	19 716	29 639
67 178		7 528		4 528		3 156		34 134		29 639
Total for surface waters: 82 390									Total for groundwater: 60 054	
Surv. = Surveillance monitoring points Op. = Operational monitoring points Quant. = Quantitative monitoring points										

Figure 2. Overview of monitoring points in the EU.

Monitoring programme, a transparent tool

The monitoring programme should be seen as a way to share data and ensure mutual understanding of the main issues. It is an essential communication tool, from the local level up to cross-border river basins. It follows that transparency and reliability are crucial factors.

Relatively limited costs compared to the results produced

The cost of monitoring programmes should not be underestimated (particularly if an integrated approach is adopted); however it represents only a small percentage of the total cost of a programme of measures and is thus relatively inexpensive. In addition, monitoring has been shown to significantly enhance the value of water policies by reducing the number of inappropriate and counter-productive measures.

The need for increasingly integrated monitoring programmes

Monitoring requirements imposed by the WFD have led to major changes in the monitoring programmes of EU Member States. The revamping of programmes highlighted the need to develop an integrated approach in order to meet not only WFD objectives, but also a number of other EU and national obligations.

The DPSIR Water Cycle - in the policy cycle

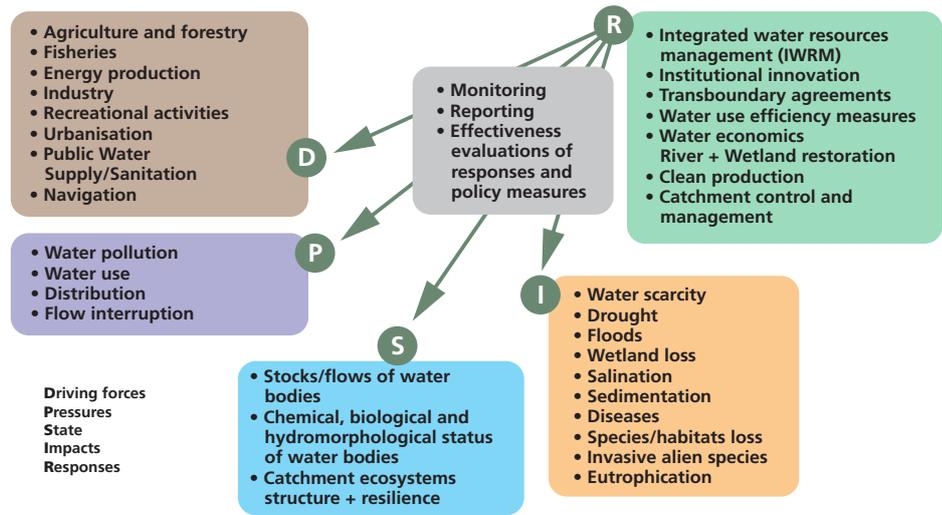


Figure 3. Driving forces - Pressures - State - Impacts - Responses model applied to the water cycle.

Today, it is necessary to review the work carried out in 2009 on monitoring programmes and integrate the objectives of the Marine strategy framework directive, to create synergies in monitoring the status of water bodies. More generally, monitoring must be completely integrated in the overall planning process. That implies linking the available knowledge on pressures with data on the status of water bodies and with the proposed measures, according to the DPSIR

model (Driving forces, Pressures, State, Impacts, Responses), and taking into account the various needs on the European, national and local levels. ■

Mauricette Steinfeldt,
Council for the environment and sustainable development

The Environment and Sustainable Development Council had been requested to audit the first French WFD monitoring programme; from this audit several observations and recommendations may be raised:

- > monitoring is the cornerstone to implement water policies : it answers to the need to better know the water and the aquatic environment and the pressures to take the appropriate measures;
- > it has a relatively modest cost: the cost of the new monitoring programs (including the marine environment strategy) should not be underestimated. Nevertheless the cost of inappropriate measures to reach the good ecological status or the cost of a dispute with the European Commission would be much more important;
- > use monitoring results on water quality to target actions to be done (pressures and impacts);
- > secure monitoring management and improve data production and banking system especially on biological and hydromorphological elements;
- > simplify the architecture of the actors networks and enhance coordination;
- > facilitate access to data and monitoring results for the local socio-professionnal actors and the general public;
- > a stronger management of the monitoring programme is recommended.

For more information

Presentations and documents pertaining to the workshop:

<http://www.riob.org/events/13-16-novembre-2013-plodiv/workshop-on-monitoring/?lang=en>

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