European Union Network for the Implementation and Enforcement of Environmental Law

River Development Planning (RDP)

Final project report

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Introduction to IMPEL

The European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) is an international non-profit association of the environmental authorities of the EU Member States, acceding and candidate countries of the European Union and EEA countries. The association is registered in Belgium and its legal seat is in Brussels, Belgium.

IMPEL was set up in 1992 as an informal Network of European regulators and authorities concerned with the implementation and enforcement of environmental law. The Network's objective is to create the necessary impetus in the European Community to make progress on ensuring a more effective application of environmental legislation. The core of the IMPEL activities concerns awareness raising, capacity building and exchange of information and experiences on implementation, enforcement and international enforcement collaboration as well as promoting and supporting the practicability and enforceability of European environmental legislation.

During the previous years IMPEL has developed into a considerable, widely known organisation, being mentioned in a number of EU legislative and policy documents, e.g. the 7th Environment Action Programme and the Recommendation on Minimum Criteria for Environmental Inspections.

The expertise and experience of the participants within IMPEL make the network uniquely qualified to work on both technical and regulatory aspects of EU environmental legislation.

Information on the IMPEL Network is also available through its website at: www.impel.eu

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Executive Summary

Many rivers and streams in Europe are far away from the good water status that they should have reached already in 2015 under the EU Water Framework Directive (WFD). Experience in some countries has shown that the WFD system of river basin management plans and programmes of measures that should remedy this situation needs to be supplemented by more concrete and action-oriented planning at sub-basin and catchment level. A two-year IMPEL project was therefore started in 2017 to prepare useful guidance for river (or catchment) development planning by water authorities or other competent organisations. The German-led project team consisted of members from 6 countries; altogether 10 authorities from 8 Member States participated actively in the project. In a first stage, a survey with questionnaires was conducted to collect information about the current status of sub-basin management planning in participant countries. On the basis of the survey, project team research and input from an expert workshop in September 2017, a "Guideline on River Development Planning" was drafted, discussed and finalised in November 2018. The guideline gives recommendations and shows good practice examples from participant states how to plan and implement relevant measures in collaboration with stakeholders, NGOs and the general public. This report outlines the objectives and structure of the project, the results of the survey, the evolution of the RDP guideline, and the issues and results of discussion.

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1. Introduction

1.1. Background

Under Article 4(1)(a) of the EU Water Framework Directive (2000/60/EC, short "WFD"), Member States have to implement the necessary measures to prevent deterioration of the status of all bodies of surface water, and to protect, enhance and restore all bodies of surface water with the aim of achieving good ecological and chemical status. This objective should have been reached already in December 2015. However, all EU Member States are still far behind schedule, especially those countries in Central and North West Europe that are densely populated and dominated by industry and/or intensive agriculture. Here rivers, streams and lakes suffer from pollution by wastewater, agricultural fertilizers and pesticides, heavy canalization, obstruction by hydro dam barriers, as well as urban sprawl and ground sealing in the catchment areas. According to a recent report by the European Environment Agency (EEA)[1], around 40 % of surface waters (rivers, lakes and transitional and coastal waters) in the European Union are in good ecological status or potential, and 38 % are in good chemical status. In other words, the ecological and chemical quality of 60, resp. 62 % of surface waters in the EU is below the objectives of the WFD. The EEA report identified as the main problems: hydro-morphological pressures (i.e. channelization, disconnecting of flood plains, dams, weirs etc.; affecting 40 % of water bodies), diffuse sources (38 %), particularly from agriculture, and atmospheric deposition (38 %), particularly of mercury, followed by point sources (18 %) and water abstraction (7 %). The main impacts on surface water bodies are nutrient enrichment, chemical pollution and altered habitats due to morphological changes.

The WFD has established a system of River Basin Management Plans (RBMPs) and Programmes of Measures (PoMs) in all Member States to remedy the situation. As part of a "Common Implementation Strategy" (CIS), information platforms and numerous guidelines have been developed by the Water Directors of the EU Commission and the governments of the Member States, notably on the "Planning process" of RBMPs (CIS Guidance document no. 11). However, it has become apparent that planning at the level of central government and for whole river basins is often not concrete enough and too far away from administrative implementation to achieve effective improvements in the short or medium term. Some countries like the UK have therefore initiated policies focusing on smaller geographical areas ("catchments") and on a collaborative approach involving stakeholders, environmental NGOs and the general public.

[1] European waters. Assessment of status and pressures 2018. EEA Report 7/2018, p. 6.

As a European network of administrative practitioners, IMPEL has taken up this idea with a view to exchanging experiences and researching good practices in the member countries, so that practical recommendations can be given on development planning for especially small rivers and their catchment areas, and on the effective implementation of such plans. Based on Terms of Reference of November 2016 (later updated in October 2017), IMPEL's General Assembly agreed on a two-year project for the elaboration of a guidance document on "River Development Planning (RDP).

1.2. Objectives and structure of the project

The objectives of the project were to collect information about best practices and provide guidance how to draft and implement river development plans in a cost-effective way, so that regulators in the Member States are encouraged to use this instrument for the remediation of surface waters (especially small and medium-sized rivers) in their jurisdiction. Special emphasis was put on the systematic involvement of stakeholders and the public, in order to stimulate a long-term and widely supported improvement of the waterbody and its catchment area. The term "river development" in this project is to be understood in a broad sense as including the whole catchment area of a river and aiming at an integrated and sustainable development.

The RDP project started in March 2017 with a kick-off meeting in Frankfurt am Main (Germany) and a survey of existing practices and the needs for guidance. Replies to the questionnaire were given in spring and summer of 2017 and summarized in a report ("Analysis of the responses to the questionnaire") with updated version as of January 2018. An expert workshop was held in Frankfurt on 27-28 September 2017. Its presentations and the meeting report (as well as other project documents) are available on the IMPEL Basecamp. In 2018, two smaller project meetings took place in London (June) and Frankfurt (October), each connected with an excursion to a river. The draft of a Guideline on River Development Planning was developed and discussed from April to November 2018. The final version is submitted – in parallel to this report - for adoption by the IMPEL General Assembly in December 2018. More information can be found below in section 4.

1.3. Participants

The project was led by Germany, with *Thomas Ormond* of the *Regierungspräsidium Darmstadt* (*RPDA* = Regional authority of South Hessen) acting as project manager. Apart from him, the project team consisted of administrative and technical experts from seven Member States:

- *Wibke Christel* (Environment Protection Agency / Environment Ministry, DK – in 2017)
- *Damian Crilly* (Environment Agency of England, UK)
- *Gabriel Dragoi* (Romanian National Water Administration, RO)
- *Christiane Ehnes* (RPDA, DE)
- *Kirsten Flemming Hansen* (Ministry of Environment and Food, DK – in 2018)

- *Katrin Franke* (RPDA, DE)
- *Daniel Grůza* (Czech Environmental Protection Inspectorate Ostrava, CZ)
- *Gerd Hofmann* (RPDA, DE)
- *Nada Kogovšek (*Slovenian Inspectorate of Environment and Spatial Planning, SI – in 2017)
- *Vasile Pintilie* (Romanian National Water Administration, RO)
- *Darja Stanič-Racman* (Slovenian Inspectorate of Environment etc, SI – in 2018)
- *Ada Wasilewska* (Inspectorate of Environmental Protection Olsztyn, PL)

14 IMPEL member countries registered as such on the RDP project site of Basecamp: Belgium, Croatia, Czech Republic, Denmark, Germany, Greece, Iceland, Italy, Latvia, Poland, Portugal, Romania, Slovenia and the United Kingdom. Other countries registered with their national coordinators. 10 administrative authorities from 8 countries (DE, CZ, DK, IT, PL, RO, SI, UK) sent replies to the questionnaire and 27 experts from the same countries participated in the expert workshop in Frankfurt in September 2017.

2. Survey on the status of river development planning in participant countries

2.1 Questions

With the questionnaire of March 2017 (updated in May 2017), the following questions were asked to participants:

1. Does (do) the river basin management plan(s) and the programme(s) of measures that exist in your country under the EU Water Framework Directive (WFD) lay down concrete measures and time tables that can be directly implemented locally by water authorities?
   If so, which measures for the elimination of phosphorus, nitrates, pesticides and/or micropollutants from medicines do they include? (Please give examples.)
2. Do these plans have legally binding effect also for municipalities and other interested parties (farmers, industry, hydropower plants etc)? If so, which measures are these stakeholders obliged to take concerning elimination of phosphorus etc? (Please give examples.)
3. Do you have development plans for individual rivers or other water bodies in your country, beyond the plans and programs of measures prescribed by the WFD?
4. Who is (are) the competent organization(s) or authority(ies) for river development planning in your country?
5. What is the time frame of these development plans?
6. Is river development planning in your country based on scientific research? Do you ask consultants and/or university experts to conduct the necessary investigations?

7. To what extent do the development plans consider different influencing factors, for example discharges from urban treatment plants, poor water structure, diffuse impacts from agriculture?
8. Do you involve municipalities, economic stakeholders (farmers, industry etc), environmental NGOs and/or the general public in the planning process and how do you do it?
9. How do you ensure compliance with the plan and the achievement of its objectives?
10. What do you expect from the IMPEL project on river development planning? What could be the most useful elements of an IMPEL guideline in this field?

2.2 Replies

By October 2017, 9 water authorities from 7 member countries had given replies to the questionnaire: Germany (South Hessen = DE/HE); Denmark (DK); Italy (Emilia Romagna, Lombardy and Sardinia = IT/ER, IT/LO, IT/SD); Poland (PL); Romania (RO); Slovenia (SI); United Kingdom (England = UK/EN). In addition, the Czech Republic (CZ) sent a response in June 2018.

The 9 first answers were analyzed in a report of 30 November 2017, which was updated, after comments, on 15 January 2018. The results may be summarized for the 10 questions as follows:

1. Concreteness of river basin management plans

In the majority of countries which were surveyed RBMPs and PoMs set out measures and timetables that can be directly implemented by local authorities. In three countries (DE/HE, PL, Sl) the plans only seem to define more general goals, which local authorities must adhere to, but which are not concrete enough to be implemented directly.

2. Legally binding effect

In the great majority of countries RBMP and PoM have no direct binding effect on municipalities and other interested parties, they do however set out more general objectives which municipalities and other actors must adhere to and which are largely implemented through individual more specific laws and legal regulations.

3. Existence of river development plans below the RBMP level

With the exception of DK, PL and SI, development plans have been or are starting to be developed in all surveyed countries. Voluntary measures such as “river contracts” and “partnerships” are a popular choice.

4. Competence for river development planning

The responsibility for river development planning is mostly placed at ministerial (national or regional) level. In some countries, however, regional water authorities (in DE), state-owned enterprises for a particular river basin (CZ) or “catchment partnerships” led by an NGO, water

company or other organization (in England) may organize planning and implementing measures at sub-basin level. Local authorities and communities are involved to a varying extent.

5. Time frame for river development plans

Four countries have set specific time frames, 5 countries (plus CZ) have no specific time frame beyond the 6-year interval foreseen in the WFD.

6. Connection of planning to scientific research

The majority of countries seem to base their planning on scientific research; they do however not always involve external consultants/experts.

7. Consideration of different influencing factors

Development plans in all countries address factors like discharges from urban treatment plants, poor water structure or diffuse impacts from agriculture at least generally. The level of detail was difficult to determine and seems to vary.

8. Participation of stakeholders, NGOs and the public

All countries have measures in place to involve the public as well as other stakeholders; the levels of detail and procedures vary, however.

9. Compliance assurance and evaluation

In many countries monitoring agencies are responsible to ensure compliance; some additionally and/or alternatively rely on voluntary agreements or contractual compliance mechanisms. Achievement is mostly assessed by way of special monitoring reports.

10. Expectations towards the RDP project

Almost all participating countries expect an exchange of experience and the sharing of good practices. Useful elements of a guideline are seen to be inter alia strategies of implementation on the local level, effective planning instruments and ways on how to incentivize environmental improvements.

For details see the updated survey report of January 2018. The report can be accessed on the RDP project site of IMPEL Basecamp.

3. Exchange of experience and issues for discussion

Especially the kick-off meeting in March 2017, the expert workshop in September 2017 and the project meeting in London of June 2018 were fora for discussion, information about scientific research and exchange of practical experience from participant countries. The following presentations were held and then published on the project site of IMPEL Basecamp:

1) Kick-off meeting (Frankfurt, 30-31 March 2017)

- Introduction to the IMPEL project "River development planning" *(Thomas Ormond,* Project manager, RPDA, DE)
- The ‚NiddaMan' project in the context of German measures for regional water resource management *(Ulrike Schulte-Oehlmann,* University of Frankfurt, DE)
- The Hessian strategy for phosphorus reduction and its importance for river development *(Gerd Hofmann / Christiane Ehnes*, RPDA, DE)
- "Catchment Based Approach" - River development planning in England and Wales *(Damian Crilly,* Environment Agency, UK)
- How does inspection work in Slovenia contribute to the objectives of the Water Framework Directive? *(Nada Kogovšek,* Inspectorate of the Environment and Spatial Planning, SI)
- River development planning in Denmark *(Wibke Christel,* Environment Protection Agency, DK)

2) Expert workshop (Frankfurt, 27-28 September 2017)

- Introduction to the IMPEL project "River development planning" *(Thomas Ormond)*
- Measures to reach good water status in Germany *(Volker Mohaupt,* Federal Environment Agency, DE)
- Effects of pollution on river ecology: Results of the ‚NiddaMan' project *(Prof. Jörg Oehlmann,* University of Frankfurt, DE)
- Possibilities and limits of surface water renaturation *(Andrea Sundermann,* Senckenberg Institute, DE)
- Renaturation of the Nidda and public participation in Frankfurt *(Michel-André Horelt,* Team Ewen, DE)
- River development planning for Nidda, Usa and Horloff *(Gerd Hofmann / T. Ormond / Christiane Ehnes***,** RPDA, DE)

- Coordinating river development in England *(Damian Crilly,* Environment Agency, UK)
- Control of water pollution from agriculture in Denmark *(Wibke Christel***,** Ministry of Environment and Food, DK)
- The experience with river contracts and pollution control in Italy *(Claudia Carpino***,** Ministry of the Environment */ Fabio Carella***,** Environmental Agency of Lombardy region, IT)
- Reduction of micro-pollutant emissions in North-Rhine Westphalia *(Demet Antakyali,* Competence Centre Micro-pollutants NRW, DE)
- Ecological river development planning and floodplains in Bavaria: Concepts, strategies and results *(Thomas Henschel,* Bavarian Environment Agency, DE)

Restoration of the River Nidda near Frankfurt-Höchst, explained to the IMPEL project team in Sept. 2017.

3) Project meeting in London (4-5 June 2018)

- (Introductions by *Damian Crilly* and *Thomas Ormond*)
- The Catchment Based Approach (*Damian Crilly*, Manager for Strategic Catchment Partnerships in England's Environment Agency, UK)

- Delivering the WFD through the Catchment Based Approach (case study Evenlode) *(David McKnight*, Programme Manager of the Environment Agency for the Upper Thames Valley, UK)
- How We Attained Good Ecological Potential (case study Wandle) *(Mark West,* Catchment coordinator at the Environment Agency, UK)
- Thames estuary and coastal waters Catchment Based Approach *(Amy Pryor,* Chair of the Thames Estuary Partnership and the Coastal Partnerships Network, UK)

Members of the RDP project group in front of Environment Agency vessel and Thames, June 2018, in London

At the expert workshop in September 2017, parallel working groups were formed to discuss two key issues: 1) "Fact-finding for river development: How to get the necessary scientific, geographic and other data?" (Chair: *Wibke Christel*) and 2) "Instruments for planning and implementation: How to involve stakeholders and the public? What administrative, legal and financial bases are necessary?" (Chair: *Damian Crilly)*. For details of the discussions see the Meeting report of 28 November 2017. Likewise, the discussions at other project meetings were recorded in meeting reports which are available on the IMPEL Basecamp.

Besides, the workshop and the last two project meetings were combined with excursions to places of interest concerning river development. Workshop participants were invited on 28 September 2017 to join a visit of the urban waste water treatment plant of Friedberg and a restored stretch of the River

Nidda. During the meeting in London on 5 June 2018, the Environment Agency offered a boat tour on the river Thames from the West of London (Vauxhall/Putney) to Greenwich and back. EA experts *Toni Scarr* and *Tom Cousins* showed important pieces of water infrastructure or restoration projects along the river (e.g. Thames barrier, works on the Tideway Tunnel, Greenwich peninsula). At the final project meeting in Frankfurt on 15 October 2018, the group visited a barrier and hydropower plant near Eddersheim on the River Main and discussed the obstacles to fish migration and ways to restore the continuity of the river.

Press statements on the project or the various meetings were released by the Press Officer of the *Regierungspräsidium Darmstadt* in German on 31 July and 29 September 2017 and for the IMPEL website and IMPEL Weekly in English in October 2017, June 2018 and October 2018.

RDP project team with staff of the Eddersheim hydropower plant on the River Main, October 2018.

4. Work on the RDP Guideline

The structure of the guideline and the responsibilities for the various chapters were eventually decided at the project meeting in London (4-5 June 2018) as follows:

1.	Introduction	*Thomas Ormond*
2.	Background	*Thomas Ormond*
3.	Objectives and procedure of river development planning	*Thomas Ormond*
4.	Determining the field of operation ("where?")	*Darja Stanič-Racman / Katrin Franke / Damian Crilly*
5.	Establishing the catchment characteristics	*Gerd Hofmann / T. Ormond*
6.	Analysis of pressures, risks and gaps	*Gerd Hofmann / T. Ormond*
	Good practice example: Collaboration of water authorities with scientists in the deficit analysis for the river Nidda (DE)	*Thomas Ormond*
7.	Identifying potential measures for improvement	*Gerd Hofmann / T. Ormond*
8.	Drafting the plan, participation and prioritisation	*Damian Crilly / T. Ormond / K. Franke*
	Good practice example: Stakeholder workshops in the BeWater project for the River Vipava (Slovenia)	*Darja Stanič-Racman*
	Good practice example: The Catchment Based Approach (England)	*Damian Crilly*
	Good practice example: Participation of local water councils in river basin management planning in Denmark	*Kirsten Flemming Hansen*
9.	Implementation of the plan	
9.1	Conditions for successful implementation	*G. Hofmann / T. Ormond / C. Ehnes*
	Good practice example: Reducing phosphorus emissions from municipal waste water plants in Hessen (DE)	*Thomas Ormond*
9.2	Role of inspections	*Darja Stanič-Racman / T. Ormond*
	Good practice example: Targeted regulation of agriculture in Denmark	*K. Flemming Hansen*
	Good practice example: Agricultural pollution control project in Calarasi County, Romania	*Gabriel Dragoi / Vasile Pintilie*
10.	Monitoring, evaluation and review	*Ada Wasiliewska / T. Ormond*
	Good practice example: Scientists share knowledge and join forces to improve biodiversity and water quality on the Kwacza River in Poland	*Ada Wasiliewska*
11.	Annexes	*Thomas Ormond*

Some annexes (template for a catchment management plan, terms of reference for a catchment partnership) were provided from the Environment Agency of England. The planning schedule for the participation in river management that has been developed by the ISOE Institute (Frankfurt) for the "NiddaMan" project was translated from the German by *Thomas Ormond*.

The guideline was essentially drafted between August and November 2018. The project team plus other project participants were asked in regular intervals for comments by e-mail on the evolving document. *Thomas Ormond* as project manager was charged with the final editing. *Damian Crilly* also undertook a language check.

5. Conclusions and recommendations

From the discussions and the expert input throughout the project, the following conclusions and recommendations may be drawn:

1. At least in larger Member States and large river basin districts, river development planning on a sub-basin or local catchment scale is a useful supplement to the river basin management plans under the Water Framework Directive, in order to make them operational in practice.

2. Local catchment issues need to be connected to wider river basin, regional, national and EU strategic priorities.

3. The objectives of local river development – beyond the binding elements laid down by the law – should rather not be dictated top-down by the administration but formulated in a discussion process where relevant authorities, affected stakeholders and interested members of the public can provide their opinions and expertise.

4. A river development plan (RDP) is not a final and definite outcome but rather an intermediate result in a continual/iterative process of planning, implementation and review. Because of this, the planning procedure should not be too complicated and time-consuming. On the other hand, it has to be well prepared and carefully conducted, in order to lead to informed decisions and gain acceptance among stakeholders and the public. Compromises are necessary.

5. For local river development planning it is sensible to limit the field of operation to the jurisdiction of only one competent water authority or frame it in such a way that one authority is clearly leading. However, the larger scale context must not be lost, and cooperation with neighbouring authorities should be sought. The UK has made positive experiences with "catchment partnerships" led by environmental NGOs, water companies or other non-governmental institutions.

6. A wide range of data is needed for the RDP, e.g. on ecological and chemical status, hydraulic details, status of infrastructure, protected zones, property rights, land use, identity of polluters etc. It is useful to collaborate with research institutions and invite public participation and "citizen science".

7. Basic questions in the fact-finding process might be: What are the problems? Who "owns" them? Who can solve them? Who are the blockers and enablers?

8. The analysis of pressures on river quality should be based on the standards of the Water Framework Directive. More detailed investigations will help to ascertain whether insufficient ecologic quality is due primarily to hydromorphological deficits or pollutants. Knowledge gaps should be taken into account and, where possible, closed by further research.

9. To identify potential measures for improvement, there is today a rich body of practical experience which can be assembled in a "toolbox". The measures may be of different scale and nature, some of them administrative and binding, others taking the form of financial incentives or awareness-raising and relying on voluntary action by stakeholders and the public.

10. The RDP itself is, as a rule, not a legally binding instrument but it can refer to and coordinate measures that have this legal status and others that have not. Administrative orders and inspections also have a role to play in water management but river development planning should, where possible, be based on consensus.

11. For realistic planning and effective implementation of the plan it is necessary to have a clear picture of available human and financial resources and capabilities. Envisaged measures need to be discussed with other relevant authorities (e.g. for possible synergies with non-water policies) and with the persons and institutions who might be able to carry out measures for improvement. Funding from state funds and private sources might be available.

12. Public awareness, participation and a feeling of "ownership" for the river and its positive development are crucial for success.

13. The process of drafting the RDP consists of several stages, starting with a general outline and becoming, on the basis of research and participation of stakeholders and the public, more and more specific and action-oriented.

14. If one really wants to sensitize stakeholders (e.g. farmers) and change problematic behaviour, experience has shown the usefulness of direct, personalized discussions over a longer period of time.

15. For public relations and the participation process it is advisable to make use of professional facilitators and a communication strategy.

16. A certain degree of prioritization, as concerns choice of planning area and types of measures, is indispensable. Priorities should be discussed. Prioritizing in partnership helps to identify synergies and optimize shared investment opportunities.

17. In monitoring the results of the plan, a combination of scientific expertise with involvement of stakeholders and the public is useful to detect possible shortcomings of the RDP and its implementation.

18. The main indicator of success will be the increase of biodiversity in and near the river, approaching its natural potential. The reduction of relevant pollutants and the establishment of river continuity and a varied and type-specific hydromorphology will provide important signs of improvement on this way.

Annexes

Annex: Terms of reference (update after General Assembly, Dec. 2017) - see extra document.