ANNOTATED BIBLIOGRAPHY

TRANSBOUNDARY RIVER REJUVENATION:

EUROPEAN EXPERIENCES OF RHINE RIVER

CENTRE FOR POLICY RESEARCH

NAMAMI GANGE

TREADS
TRANSBOUNDARY RIVERS ECOLOGIES AND DEVELOPMENT STUDIES

Introduction

The primary objective of the literature review is to distil the lessons learned from the Rhine/European experiences of river restoration for its relevance in the Indian context of the river rejuvenation programme in general and the Clean Ganga Mission in particular. The primary focus of the study is to highlight the transboundary political dimension for collective action toward river rejuvenation. Simultaneously, the literature review and annotations would inform the specific institutional, legal and water resources governance parameters for the EU experience vis-a-vis NGP.

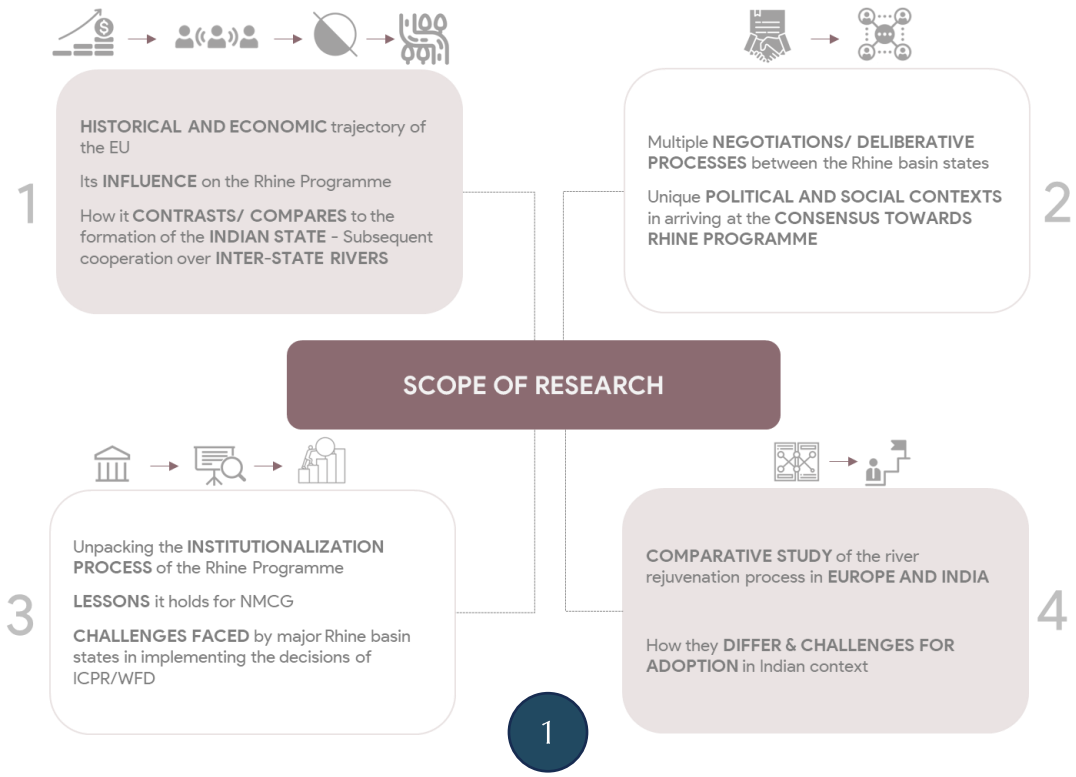
Scope of Research

Conflict and Cooperation - Key Political, Economic, and Ecological interdependencies at international and/or provincial/state level. Primary focus on Navigation, Trade, Disaster Risk Management, Fisheries/Agriculture, and Infrastructure for Regional Integration (Power for instance).

History - European unification and the evolution of the EU WFD and other similar instruments and their influence on the Rhine Programme.

Institutions – Intergovernmental institutions associated with the Rhine Programme and the EU WFD in mediation, knowledge generation, regulations etc.

Governance – Water Governance/Management Paradigm in the Rhine Basin and the EU. Key water laws and policies.



What are we looking to achieve through the literature review?

- The literature review aims to build a critical narrative of the EU/Rhine experience for the NGP. The literature and the annotations primarily aim to inform the following line of research:

- The unique historical and economic trajectory of the EU - its influence on the Rhine Programme and how it contrasts/compares to the formation of the Indian State and subsequent cooperation over inter-state rivers.

- The multiple negotiations/deliberative processes between the Rhine basin states - each with its unique political and social contexts in arriving at the consensus towards Rhine Programme/WFD compared to the mission mode NGP Programme. To dissect the importance of sustained political interest for enduring outcomes.

- Unpacking the institutionalization process of the Rhine Restoration Programme through the constitution of ICPR and EU WFD and the lessons it holds for NMCG. This shall also include the challenges faced by major Rhine basin states in implementing the decisions of ICPR/WFD.

- Comparative study on the water management regime of EU and India - how they differ and what are the challenges for adoption in the Indian context.

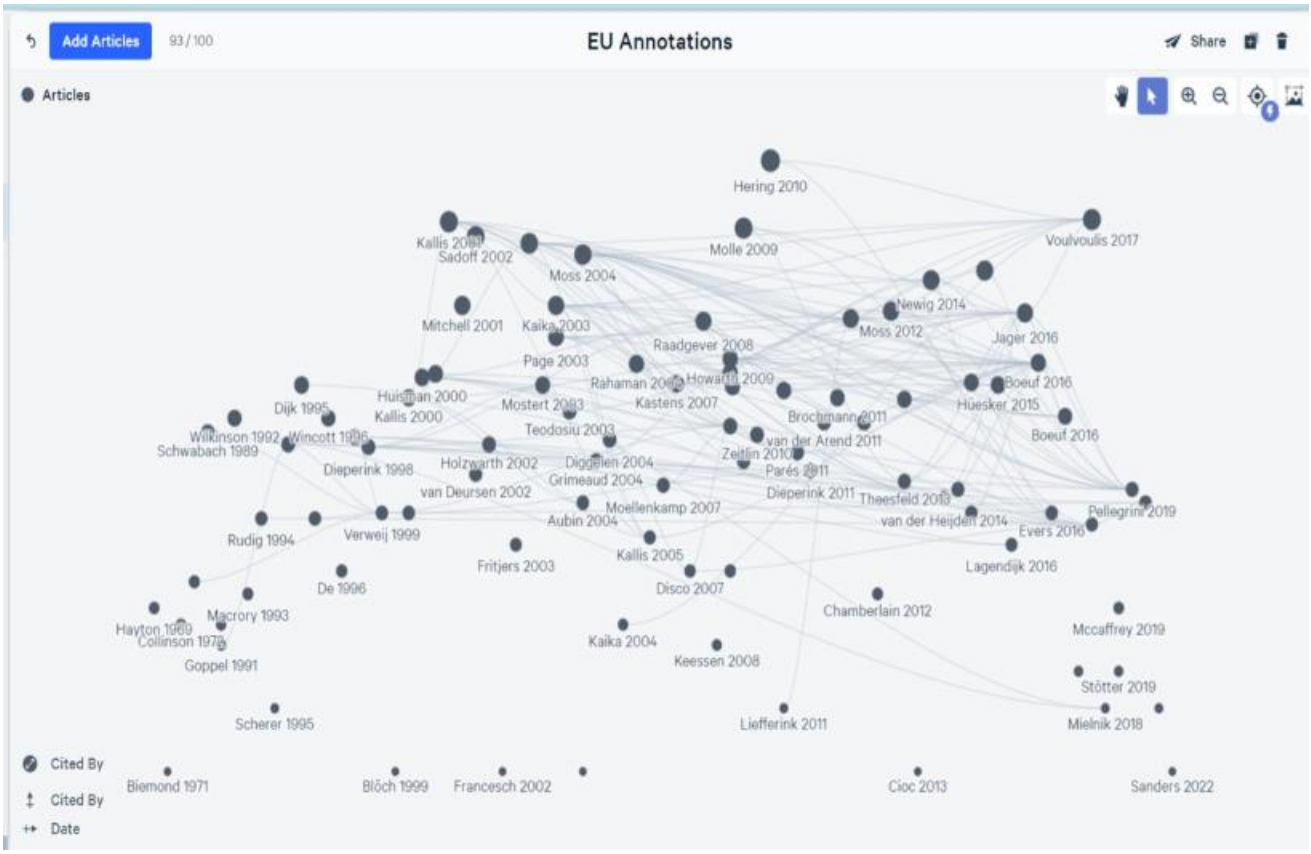


Figure 1. Visual Map for the Literature Reviewed using LitMaps

Yr: 2022 'The Rhine as One River': Rhine Pollution and Multilevel Governance, 1950s to 1970s:

Sanders, Daan and Grift, Liesbeth:

Paper Synopsis

Asked why and how cross-border environmental governance developed in Western Europe, the 1970s are generally considered a key decade. By taking the historical evolution of the international Rhine regime as a lens, we will argue that the post-war decades need to be taken into account to understand the major changes that took place from the 1970s onwards. In this article, we examine the large variety of state and non-state actors that became involved in the contestation around the issue of Rhine pollution from the 1950s until the late 1970s. Looking at how problem definitions and strategies changed over time, we answer the question whether enough common ground could be found among water supply companies, horticulturalists and environmental activists to build a coalition against polluting industries, and how the dynamics of their interaction may be described

Annotation

The article discusses the strategies and coalition of various state and non-state actors that culminated in the Rhine Action

Programme during the 1970s, which the author argues was a watershed decade for Western European environmental governance.

The first instance of the Rhine Pollution generated attention from the European Parliament and key water supply agencies in the Netherlands, notably the RIWA, and was further supplemented by the new generation of 'environmental actors' that were gaining visibility in Europe.

One of the prominent instances of disaster in the Rhine that evoked attention from European lawmakers and other actors was the large spill of the insecticide endosulfan in 1969, causing massive fish die-off in the German section of the Rhine. In particular, the work shows how the concerns and efforts of the Dutch drinking water company RIWA—and their coalition with the new generation of 'environmental actors' that were gaining prominence in Europe—have been instrumental in the lead-up to international cooperation on the Rhine Pollution Abatement Programme.

The RIWA became a key proponent in advocating for the reduction of rhine pollution activities by engaging with a transnational network. Notably, RIWA, along with Germany's ARW and other drinking water companies, established the International Association of Waterworks in the Rhine (IAWR). These state entities, along with active support from the civic society, beefed up their effort in addressing the Rhine Pollution—through a mix of water quality research and knowledge production, intense lobbying at the ICPR, the respective national governments, and other European institutions, and conducting public campaigns. The body of knowledge generated by organizations like RIWA during the 1950s and 1960s bolstered the coalition of multiple actors that could effectively influence public attention, engage in international negotiations, and pursue various legal responses to fight rhine pollution.

The other key dimension that is attributed to the transformation of the pollution abatement response for the Rhine was the growing economic, social, and political capacity of the European Economic Community to influence regional policy on the environment. The EEC became an institutional avenue to deliberate on water pollution and an avenue for contestation for international and regional cooperation on transboundary water quality issues, as evident in the adoption of the Rhine Pollution Report by the European Parliament and the creative use of the European Court of Justice by the European actors in contending with these matters. These culminated in the Salt Convention in 1976 among the riparian countries, albeit without significant outcomes.

These structural changes in Western European politics and the groundwork produced by the effective coalition of the drinking water companies, farmers, and other environmental actors throughout the 1950s and 1960's finally had to wait for the right political moment—the Sandoz Disaster in 1986 on the Rhine—that fundamentally altered the way the Rhine nations cooperate—in 1987 the first Rhine Action Programme was formulated, a significant departure from the previous actions that helped the process of the Rhine Rejuvenation to a significant extent.

Yr: 2020 The Rhine and European Security in the Long Nineteenth Century Making Lifelines from Frontlines:

Joep, Schenk:

Paper Synopsis

Throughout history rivers have always been a source of life and of conflict. This book investigates the Central Commission for the Navigation of the Rhine's (CCNR) efforts to secure the principle of freedom of navigation on Europe's prime river.

The book explores how the most fundamental change in the history of international river governance arose from European security concerns. It examines how the CCNR functioned as an ongoing experiment in reconciling national and common interests that contributed to the emergence of European prosperity in the course of the long nineteenth century. In so doing, it shows that modern conceptions and practices of security cannot be understood without accounting for prosperity considerations and prosperity policies. Incorporating research from archives in Great Britain, Germany, and the Netherlands, as well as the recently opened CCNR archives in France, this study operationalises a truly transnational perspective that effectively opens the black box of the oldest and still existing international organisation in the world in its first centenary.

In showing how security-prosperity considerations were a driving force in the unfolding of Europe's prime river in the nineteenth century, it is of interest to scholars of politics and history, including the history of international relations, European history, transnational history and the history of security, as well as those with an interest in current themes and debates about transboundary water governance.

Annotation

Joep Schenk is lecturer at the History of International Relations section at Utrecht University, Netherlands. He worked as a postdoctoral fellow within an ERC-funded project on the making of a security culture in Europe in the nineteenth century .

The book explores how the most fundamental change in the history of international river governance arose from European security concerns. It examines how the CCNR functioned as an ongoing experiment in reconciling national and common interests that contributed to the emergence of European prosperity in the course of the long nineteenth century. Incorporating research from archives in Great Britain, Germany, and the Netherlands, as well as the recently opened CCNR archives in France, this study operationalises a truly transnational perspective that effectively opens the black box of the oldest and still existing international organisation in the world in its first centenary. specifically,lves into the profound transformation in the history of international river governance, specifically the establishment of the principle of freedom of navigation and the creation of the Central Commission for Navigation on the Rhine (CCNR), which originated from European security considerations. Additionally, the study illustrates how the CCNR gave rise to

a Rhine regime that played a pivotal role in shaping a collective security culture. This culture emerged as an ongoing, contested process of community formation grounded in shared interests, perceptions of threats, and resultant practices.

To achieve these objectives, the research initially examines how the interplay between security and prosperity, known as the **security-prosperity nexus**, explicitly surfaced in discussions among the commissioners and interactions with external entities such as governments, experts, and local stakeholders. These exchanges played a crucial role in setting the agenda and shaping the norms, standards, and practices that facilitated freedom of navigation on the Rhine during the long nineteenth century. Secondly, the study demonstrates that the **CCNR served as a communication forum capable of reconciling conflicting interests among riparian states**, thus averting conflicts, establishing common ground, and offering a flexible compliance mechanism to regulate the actions of more powerful riparian states within the Commission.

Thirdly, the research underscores how the CCNR secured its position during the long nineteenth century by adapting its organization, working methods, and scope promptly. The focus of this investigation spans the long nineteenth century, concluding in 1919 with the institutional modification of the CCNR mandated by the Versailles Peace Treaty. This modification, driven by European security concerns, marked a distinct approach to ensuring Europe's safety by involving Great Powers in what had previously been exclusively riparian affairs.

This book comprises 6 sections that trace the historical development of international river governance, focusing on the freedom of navigation principle and the establishment of the Central Commission for the Navigation of the Rhine (CCNR).

The first section examines the emergence of the **freedom of navigation principle** in the early 1800s under French hegemony. It highlights how this principle, initially seen as a response to anarchic river exploitation, evolved into a measure to protect France's expanding empire, creating new geopolitical challenges, especially with Britain.

The second part explores the emphasis placed by the Great Powers on freely navigable rivers for European prosperity and peace during the **Congress of Vienna** in 1815. Despite conflicting perspectives on establishing an international executive body, the Congress resulted in the proclamation of **freedom of navigation** as a European principle and the creation of the CCNR composed of riparian states.

The third section focuses on the initial phase of the CCNR in **Mainz**, portraying it as a semi-diplomatic forum aimed at protecting the **'common good**.' Despite conflicting interpretations of this common good, the riparian states found common ground in resisting interference from Great Powers, viewing the CCNR as a European prosperity project.

The fourth part highlights the challenge faced by the Commission in maintaining **river safety** post the establishment of Rhine regime rules. It discusses the need for

reliable information, leading to the incorporation of external technical experts and the evolution of norms such as transparency, reciprocity, and predictability.

The fifth section examines the period of the **1840s**, marked by international crises and technological advancements. The **failure of the CCNR** to resolve conflicts shifted its focus to protecting the freedom of navigation, depoliticizing inter-riparian disputes, and establishing a Technical Commission.

The last section of the book discusses the institutionalization of the **Technical Commission** after 1860, navigating Prussia's power dynamics and railway competition. The Technical Commission's role in depoliticizing and ensuring the safety of the Rhine led to the river becoming the most prosperous waterway in Europe by the turn of the century.

Yr: 2020 Relationship between the "Rhine 2040" programme and the Sustainable Development Goals (SDGs) of the UN 2030 Agenda:

ICPR:

Tag

ICPR, Rhine 2020, UN 2030 Agenda, Rhine 2040, Sustainable Development Goals

Annotation

The "Rhine 2040" program, adopted in February 2020 by the Rhine Ministerial Conference, is a visionary initiative building upon its predecessor, "Rhine 2020." The primary objective is to create a sustainably managed Rhine catchment area resilient to the impacts of climate change, establishing valuable lifelines for both nature and people. Aligned with the United Nations 2030 Agenda's Sustainable Development Goals (SDGs), the program encompasses a range of measures with positive implications for 17 SDGs, showcasing the program's potential to contribute to the global goals over the next decade.

With nine nations or regions sharing the Rhine catchment area, the ICPR, consisting of Switzerland, France, Germany, Luxembourg, the Netherlands, the European Commission, Austria, Liechtenstein, the Belgian region of Wallonia, and Italy, collaborates successfully. The program recognizes the importance of a holistic approach to maintain an intact ecosystem, ensure good water quality, and promote sustainable use of the Rhine and its tributaries. The core objectives of the "Rhine 2040" program include creating networked habitats to enhance biodiversity, ensuring good water quality, mitigating flood risks, and managing low water. Specific goals for 2040 involve restoring passability for migratory fish, preserving and increasing biodiversity, and reducing the influx of nutrients and pollutants, including micropollutants, into the water.

Covering a catchment area inhabited by 60 million people, the Rhine serves as a vital cultural and commercial axis in Central Europe. Balancing diverse water uses, such as drinking water production, industry,

agriculture, and shipping, with environmental and nature conservation interests is a complex challenge. The program addresses these challenges through various working and expert groups, ensuring comprehensive solutions and resolutions.

The "Rhine 2040" program emphasizes its commitment to the SDGs, with a particular focus on SDG 6 (Clean Water and Sanitation). The program contributes significantly to targets such as ensuring water availability and sustainable management, improving water quality, increasing water-use efficiency, implementing integrated water resources management, and protecting water-related ecosystems. Beyond SDG 6, the program intersects with other goals, including SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), SDG 14 (Life Below Water), SDG 15 (Life on Land), SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-being), SDG 12 (Responsible Consumption and Production), and SDG 16 (Peace, Justice, and Strong Institutions).

For instance, the program contributes to sustainable urban development, disaster risk management, climate resilience, and protecting terrestrial and freshwater ecosystems. It also supports sustainable agriculture practices, reduces pollution, and promotes resource-efficient and climate-resilient management.

In conclusion, the "Rhine 2040" program is a comprehensive and collaborative effort by nine nations to ensure the sustainable management of the Rhine catchment area. Its alignment with the SDGs reflects a commitment to global sustainability, and the program's diverse objectives demonstrate a holistic approach to address the complex challenges posed by climate change and human activities in the region. Through its strategic goals and actions, the "Rhine 2040" program stands as a model for integrated water resource management, contributing significantly to the achievement of multiple SDGs by 2030.

Yr: 2019 Coordination and Participation Boards under the European Water Framework Directive: Different Approaches Used in Some EU Countries:

Pellegrini, Emilia, Bortolini, Lucia and Defrancesco, Edi:

Paper Synopsis

River basin planning under the European Water Framework Directive (2000/60/CE, WFD) poses two major challenges to EU countries: coordination among administrative units for large-scale river basin planning and the inclusion of interested parties in decision-making processes. To face both challenges, many Member States have established Coordination and Participation Boards at the River Basin District or river basin level. These boards can be defined as multi-agency and multi-actor groups that support the development of inclusive and coordinated river basin planning to comply with the WFD requirements. The aim of this paper is to understand the functioning and effectiveness of the coordination and participation boards in promoting participatory river basin planning in seven EU countries. We built a conceptual framework, based on spatial fit, coordination capacity and participatory

governance theories, to assess the scale at which these boards are established as well as the type of coordination and participation they support. The results indicate the relevance of the sub-River Basin District level to promote participatory decision-making. However, a clear linkage between participatory processes conducted at the sub-district level and decision-making processes at River Basin District should be established. Only if this link is well established are the outcomes achieved through the coordination and participation boards included in river basin plans. Moreover, we identified a lack of knowledge on how planning and implementation activities carried out at sub-River Basin District are aggregated and coordinated for the entire District. Research could contribute to this issue, by focusing on coordination mechanisms and problems that occur at the River Basin District level.

Tag

Institutions, Laws/Treaties/Diagrams, Governance, Political Aspect, WFD, Policy Implementation, IWRM, River Basin Planning, Water Governance:

Annotation

The paper titled "Coordination and Participation Boards under the European Water Framework Directive: Different Approaches Used in Some EU Countries" by Emilia Pellegrini, Lucia Bortolini, and Edi Defrancesco of Viale dell'Università, Italy , explore the challenges faced by European Union (EU) countries in river basin planning under the European Water Framework Directive (WFD). The primary challenges identified are **coordination among administrative units for large-scale river basin planning and the inclusion of interested parties in decision-making processes.** To address these challenges, many EU Member States **have established Coordination and Participation Boards (CPBs) at the River Basin District or river basin level.**

The paper focuses on seven EU countries: Denmark, England and Wales, Germany, Italy, France, Spain, and Sweden. Through a qualitative meta-analysis, the study aims to understand the functioning and effectiveness of CPBs in promoting participatory river basin planning. The limitations of the study include the analysis of a limited number of countries and reliance on secondary data. The authors develop a conceptual framework based on spatial fit, coordination capacity, and participatory governance theories to assess the scale at which CPBs are established and the type of coordination and participation they support.

The results indicate that CPBs are often established at the sub-River Basin District level, highlighting the importance of local-level coordination for effective participatory decision-making and to ensure that the outcomes of CPBs are integrated into river basin plans. The paper categorizes the implementation approaches into centralized and decentralized models, with Denmark and England representing a centralized approach, while Germany, Italy, France, Spain, and Sweden follow decentralized models. Each country's approach is discussed in detail, considering the type of coordination and participation observed.

The discussion section reflects on the implications of institutional changes for effective coordination and participation strategies. The authors identify key aspects in each country, such as the softening of the top-down approach in Denmark and England, the challenges of coordination in Germany, and the status quo in Italy, France, and Spain. The case of Sweden highlights potential issues of coordination between different administrative levels.

In conclusion, the paper suggests that there is no one-size-fits-all solution in water governance, emphasizing the need for CPBs to align with existing governance structures. The study advocates for a more prominent role for the sub-RBD level in decision-making and stresses the importance of clear linkages between top-down and bottom-up dimensions of WFD implementation.

Yr: 2019 Europe: international water law and the EU Water Framework Directive:

Götz, Reichert:

Tag

WFD, Flood Risk Management Plans, RBMP, Surface water pollution, Groundwater pollution:

Annotation

Götz Reichert is the Head of the Department on Environment, Energy, and Climate Change at the Center for European Policy, Germany.

This article discusses the approach of the EU since the early 1970s, where it has progressively regulated water as a key component of its environmental policy, culminating in the Water Framework Directive (WFD) in the 1990s, which forms the cornerstone of comprehensive water legislation, addressing various regulatory objectives and influencing international water agreements.*\

Since the early 1970s, the EU has heavily regulated water as a vital part of its environmental policy. Initially, EU water directives focused on safeguarding freshwater quality from pollution but lacked effective enforcement. By the 1990s, it was clear that a comprehensive reform was needed. The WFD forms the core of the EU's comprehensive water legislation, accompanied by a network of interconnected directives.

WFD encompasses a broad range of regulatory purposes, including safeguarding inland surface waters, promoting sustainable water use, reducing water pollutant discharges, preventing groundwater pollution, mitigating flood and drought effects, aligning with international freshwater agreements, and protecting the marine environment from land-based pollution to fulfil EU and member state international obligations.

The article also discusses the WFD implementation regarding Surface water pollution, groundwater pollution, River Basin Districts (RBDs), and River Basin Management Plans (RBMPs). It explains in general the role of these sub-heads in WFD.

Influence of WFD - The WFD has been explicitly mentioned in subsequent international water agreements, like the 2002 Sava Agreement, and has prompted

the replacement of older agreements, such as the 1996 Meuse Agreement, with new ones explicitly aligned with the WFD. Even in agreements where the WFD is not explicitly referenced, contracting parties, including EU member states and third countries, have affirmed their commitment to its principles. As of 2015, numerous international RBMPs and Flood Risk Management Plans have been adopted, incorporating the WFD's framework. These international RBMPs serve as a pivotal link between EU water law and the management of transboundary freshwater resources in Europe.

Yr: 2018 Developments in the International Protection of the River Rhine:

Mielnik, Barbara:

Tag

Institutions, Laws/Agreements/Treaties, Governance, Political Aspect, Water Quality, Pollution, International Cooperation:

Annotation

In this paper, Mielnik chronologically traces the historical and contemporary developments in the international cooperation on the Rhine as the best example to illustrate the "necessity to encompass with the norms of public international law things which exceed state boundaries and which cannot be regulated by one state only."

The author traces the history of the Rhine from the time of Charles the Great which saw the first regulations concerning the usage of the Rhine as a waterway. The usage of the Rhine as a waterway occurred simultaneously with the increase in the population inhabiting its basin and this resulted in the exploitation of its ecosystems. She highlights the landmark agreements and treaties which aided the international cooperation on the Rhine and the establishment of the International Commission for the Protection of the Rhine (ICPR) as crucial for cooperation in the region. She also outlines the challenges faced by the ICPR in producing effective outcomes due to the nature of its functioning and its lack of a legal status till the Berne Convention of 1963 which eventually granted it a special international status. Additionally, the European Economic Community (present day European Union) also joined ICPR which gave a new impetus to the international cooperation on the Rhine.

As seen in most of the reviewed literature, Mielnik also emphasises the importance of the Sandoz accident as a turning point in the management of the Rhine and in spurring international cooperation on its protection. The accident mobilised the ICPR member-states in adopting a 10-year action plan in 1987 known as the Rhine Action Programme (RAP). The success of the RAP was also instrumental in the signing of the Convention on the Protection of the Rhine in 1999. This agreement replaced the previous treaties and considered the developments of both the states of the region and the international organisations. It also established a new permanent

institution called the Coordinating Committee for the Rhine and it was tasked with the implementation of the union directives – the EU Water Framework Directive (WFD) and the Floods Directive.

The author also gives a brief overview of the structure of the ICPR and how it conducts its day-to-day activities. She concludes by mentioning the latest programme being implemented by the ICPR at the time of writing the paper which is the Programme Rhine 2020 with a focus on the "sustainable development of the Rhine." Mielnik believes that the ICPR and the cooperation amongst its member-states is rightly recognised as a successful example for other states dealing with similar issues with their rivers and ecosystems.

Yr: 2017 The EU Water Framework Directive: From great expectations to problems with implementation:

Voulvoulis, Nikolaos, Arpon, Karl Dominic and Giakoumis, Theodoros:

Paper Synopsis

The Water Framework Directive 2000/60/EC (WFD) is widely accepted as the most substantial and ambitious piece of European environmental legislation to date. It has been referred to as a once in a generation opportunity to restore Europe's waters and a potential template for future environmental regulations. However, fifteen years since it was adopted, and with many problems and delays in its implementation, the WFD has not delivered its main objectives of non-deterioration of water status and the achievement of good status for all EU waters. Putting aside the daunting technical and organisational challenges of its implementation, this paper aims to shed light on why the great expectations that came with the WFD have not yet been fully realised. It reviews how the Directive has been interpreted, focusing on its intentions and how they were applied. The findings reveal the absence of the paradigm shift towards the systems (integrated) thinking that the WFD was grounded on, as a fundamental problem with its implementation. This is also evident in cases where the Directive has been criticised as a policy tool or when implementation efforts were reviewed, indicating misunderstandings even of its core principles. This inherent departure from the Directive's systemic intention and methodological approach needs further investigation, as it could be the reason behind many of its problems and delays. Unless current implementation efforts are reviewed or revised in light of this, enabling the paradigm shift required to ensure a more sustainable and holistic approach to water management, the fading aspirations of the initial great expectations that came with the Directive could disappear for good.

Tag

Policy, Systems thinking, Assessment, Catchment management, Ecological status, Programme of Measures:

Annotation

Nikolaos Voulvoulis, Karl Dominic Arpon, Theodoros Giakoumis – all of them works at Centre for Environmental Policy, Imperial College London, London, UK.

This paper examines the implementation efforts of the Water Framework Directive, specifically delving into the interpretation of its fundamental principles to elucidate why the substantial expectations associated with the Directive have not been entirely fulfilled. Setting aside the formidable technical and organizational challenges posed by the Directive, the study explores the possibility that implementation practices might not fully align with the initial aspirations and systemic approach of the Directive. Additionally, it assesses key criticisms of the WFD, considering whether these critiques may be attributed to a lack of appreciation or understanding of the integrated and systemic nature inherent in the Directive.

This paper suggested that recognizing the crucial role of ecological status as a performance indicator, achieving a more comprehensive characterization of river basins, encompassing the analysis of pressures, impacts, and economic considerations, improving monitoring strategies to capture the intricate interactions between stressors, and ensuring that Programmes of Measures aim at enhancing the overall system state by effectively managing pressures all underscore the need for a shift towards systemic thinking. This transformational change is imperative for the effective implementation of the WFD.

The WFD serves as a platform for instigating system-level shifts that must occur, and failure to acknowledge its potential for such transformative change may result in a missed opportunity for collective action. It is evident that treating the WFD as just another directive will not suffice. Without a critical review and potential revision of current implementation efforts, allowing the directive to manifest its systemic intent and realizing its full potential may remain elusive. The initial high expectations associated with the WFD could fade away unless proactive measures are taken to align its implementation with the transformative changes required for sustainable water management.

Yr: 2017 The remarkable restoration of the Rhine: plural rationalities in regional water politics:

Verweij, Marco:

Tag

Rhine, Regional Water Politics, Clumsy Solutions, Plural Rationality Theory.:

Annotation

Marco Verweij - Department of Social Sciences and Humanities, Department of Political Science, Jacobs University, Bremen, Germany.

This paper discusses how several perplexing developments have marked the process of cleaning up the river. Given that the governance of the Rhine watershed is frequently presented as a benchmark for other transboundary water basins, it is imperative to draw valid theoretical conclusions and policy implications from this case. This poses a conceptual challenge, as the restoration of the Rhine has encompassed processes that may seem unconventional when viewed through the lens of conventional theories of

international environmental cooperation.

In particular, the author posits that the plural rationality theory, pioneered by anthropologist Dame Mary Douglas, provides a compelling explanation for the remarkable restoration of the Rhine. This theory asserts that resilient environmental governance relies on the creative interaction among advocates of a limited array of alternative approaches to defining and resolving pertinent issues. If decision-makers facilitate and leverage this interplay of contrasting viewpoints, widely acceptable and sustainable solutions to environmental challenges can emerge. Conversely, if decision-makers insist on addressing issues more rigidly, it may lead to policy failure.

After introducing Douglas's approach, the author demonstrates that these hypotheses effectively elucidate the paradoxical restoration of the Rhine. Finally, based on plural rationality theory, the author concludes by suggesting that policymakers in the Rhine catchment area may have misconstrued the lessons from the river's restoration, potentially jeopardizing the ongoing improvement of the water basin.

Yr: 2016 Transboundary flood risk management in the Rhine river basin:

Schmid-Breton, Adrian:

Paper Synopsis

The Rhine connects the Alps to the North Sea. It is 1232 km long and one of the most important rivers in Europe. It has a drainage area of approximately 200,000 km2 and covers parts if not all nine countries, which participate into the International Commission for the Protection of the Rhine (ICPR) for the sustainable development of the Rhine ecosystem. The topography of the Rhine catchment is various, from high, middle and low mountain chains to lowlands and low-lying valleys, and includes different climatic zones resulting in different patterns of flood discharges. Several important flood events occurred in the past and thus the ICPR has decided to include the topic of transboundary flood risk management into its daily work. Common actions resulted in the Action Plan on Floods in 1998 and the first Flood Risk Management Plan for the international river basin district Rhine (according to the European Union Floods Directive) in 2015. To help inform the public and assess the effectiveness of implemented measures, the ICPR created and published two means and instruments of communication and decision support: The Rhine Atlas on Floods and a specific GIS-tool which is also available for other river organizations or national institutions. This paper presents the organisation and the outcomes of the coordinated transboundary flood risk management within an international river basin using the Rhine and the particular work of the ICPR.

Annotation

The case report authored by Adrian Schmid-Breton who is the Scientific assistant, Secretariat of the International Commission for the Protection of the Rhine (ICPR), Germany offers a comprehensive overview of the challenges, collaborative efforts, and outcomes achieved through the International Commission for the Protection of the Rhine (ICPR). The Rhine, a vital

European river spanning 1232 km and traversing nine countries, has a complex topography, diverse climatic zones, and various discharge regimes, leading to a history of significant flood events. In response to these challenges, the ICPR has played a pivotal role in formulating and implementing transboundary flood risk management strategies.

The report traces the historical context of flood events, highlighting catastrophic occurrences in 1993 and 1995 that prompted the initiation of the Action Plan on Floods (APF) in 1998. The APF laid the foundation for coordinated efforts among the eight countries and the European Union within the ICPR framework. The subsequent development of the Flood Risk Management Plan (FRMP) in 2015, in accordance with the European Union Floods Directive, marked a significant milestone. The FRMP, a holistic and sustainable approach, addresses the reduction of potential adverse consequences of floods for human health, the environment, cultural heritage, and economic activities.

One of the key achievements highlighted in the report is the establishment of two communication and decision support tools: the Rhine Atlas on Floods and a Geographic Information System (GIS) tool. These tools serve multiple purposes, including informing the public and assessing the effectiveness of implemented measures. The Rhine Atlas provides comprehensive flood hazard and risk maps for the International River Basin District of the Rhine (IRBD), enhancing risk awareness at national, regional, and local scales. The GIS tool, named "ICPR FloRiAn," is designed for assessing the impact of flood risk measures on risk evolution. Notably, the ICPR offers this tool to other river basin commissions, exemplifying a commitment to knowledge sharing and collaboration beyond the Rhine basin. The tool's effectiveness is demonstrated through calculations showing risk reduction in terms of human health, cultural heritage, environment, and the economy. The findings provide valuable insights for future flood risk management planning and underscore the importance of ongoing reviews and adaptations.

The collaborative structure within the ICPR is outlined, emphasizing the role of delegates from participating countries in executing cooperation on flood management. Working and expert groups, supported by the ICPR secretariat, focus on technical questions, facilitating informed decision-making at the Plenary Assembly. The involvement of interest groups and non-governmental organizations representing the public adds a crucial dimension to the decision-making process, ensuring diverse perspectives are considered.

In conclusion, this case report provides a thorough examination of the organizational structure, collaborative efforts, and outcomes of transboundary flood risk management in the Rhine River Basin. It highlights the importance of international cooperation, knowledge exchange, and the development of practical tools for effective decision-making and risk reduction.

Yr: 2016 Europe's Rhine power: connections, borders, and flows:

Lagendijk, Vincent:

Paper Synopsis

This article explores the pivotal position of the river Rhine in the gradual development of a European electricity system. Although the general image of the Rhine is one of a inland transport corridor, it also acted as a backbone of electricity supply systems since the dawn of the 20th century. By relying on insights from both water history and history of technology, the article argues for a transnational approach to better grasp the dynamics of river use and related electricity generation, which often went below, as well as above and beyond nation-state affairs.

Tag

Institutions, Governance, Political Aspect, Water History, Electricity, Transnational History, Energy System, Rhine, Institutionalised European Cooperation:

Annotation

The author from Maastricht University, Maastricht, Netherlands, presented the paper at the 1st Transnational Rhine Conference in 2009, where he explored the vitality of the Rhine in the development of the European power system.

The importance of the Rhine for inland transportation has been well documented. The article takes a different approach in making an important contribution to dissecting the 'economic' importance of the Rhine by exploring the 'pivotal position' of the Rhine for the development of the European electricity system, which the author terms "the Rhine as an axis in institutionalized European cooperation". The scholarly and policy-relevant work draws from the history of water and its linkage to technology to illustrate how the territorial dimension—from transboundary to national boundary—captures the dynamics of hydropower generation in the Rhine.

The article details the political and economic contexts for the various phases of hydropower cooperation over the Rhine. The phase that started with the commercial importance of the Rhine—where growing trade provided impetus for cooperation and increasing demand for energy—suffered post-World War I. Post-World War I, the cooperation and dynamics changed, and nations increasingly resorted to 'nationalizing' hydropower resources. The international relations suffered, impeding cross-border electricity cooperation over the Rhine'. After World War II, in 1945, the conditions, however, reversed, and European cooperation and electricity both became priorities for the planners and European actors.

The paper, while documenting the role of the Rhine in European history, unpacks the important role of 'non-state transnational actors' in the development of the Rhine. The article pushes us to reimagine the role of the 'nation-state' in the development of river resources. The author rightly depicts how "national histories of electrification" in Europe owe to a significant extent to the Rhine vis-à-vis the distinct context of the evolution and development of regional cooperation in Europe.

Yr: 2016 Transforming European Water Governance? Participation and River Basin Management under the EU Water Framework Directive in 13 Member States:

Jager, Nicolas W., Challies, Edward, Kochskämper, Elisa, Newig, Jens, Benson, David, Blackstock, Kirsty L., Collins, Kevin, Ernst, Anna, Evers, Mariele, Feichtinger, Judith, Fritsch, Oliver, Gooch, Geoffrey D., Grund, Wiebke, Hedelin, Beatrice, Hernández-Mora, Nuria, Hüesker, Frank, Huitema, Dave, Irvine, Kenneth, Klinke, Andreas, Lange, Leonie, Loupsans, Delphine, Lubell, Mark N., Maganda, Carmen, Matczak, Piotr, Parés, Marc, Saarikoski, Heli, Slavíková, Lenka, Arend, Sonja van der and Korff, Yorck von:

Paper Synopsis

The European Union (EU) Water Framework Directive (WFD) requires EU member states to produce and implement river basin management plans, which are to be designed and updated via participatory processes that inform, consult with, and actively involve all interested stakeholders. The assumption of the European Commission is that stakeholder participation, and institutional adaptation and procedural innovation to facilitate it, are essential to the effectiveness of river basin planning and, ultimately, the environmental impact of the Directive. We analyzed official documents and the WFD literature to compare implementation of the Directive in EU member states in the initial WFD planning phase (2000–2009). Examining the development of participatory approaches to river basin management planning, we consider the extent of transformation in EU water governance over the period. Employing a mixed quantitative and qualitative approach, we map the implementation "trajectories" of 13 member states, and then provide a detailed examination of shifts in river basin planning and participation in four member states (Germany, Sweden, Poland and France) to illustrate the diversity of institutional approaches observed. We identify a general tendency towards increased, yet circumscribed, stakeholder participation in river basin management in the member states examined, alongside clear continuities in terms of their respective pre-WFD institutional and procedural arrangements. Overall, the WFD has driven a highly uneven shift to river basin-level planning among the member states, and instigated a range of efforts to institutionalize stakeholder involvement—often through the establishment of advisory groups to bring organized stakeholders into the planning process.

Tag

river basin management; participation; stakeholder engagement; integrated water resources management; institutional adaptation; mandated participatory planning:

Annotation

This article investigates the implementation of the European Union (EU) Water Framework Directive (WFD) across 13 member states during the initial planning phase from 2000 to 2009. The WFD aims to harmonize EU water policy, emphasizing participatory river basin management to protect and restore the European water environment. The study employs a mixed

quantitative and qualitative approach, analyzing official documents and WFD literature to map the implementation trajectories of the member states and providing a detailed examination of four countries: Germany, Sweden, Poland, and France.

The WFD introduced the concept of "good status" for water bodies, requiring all to reach this status by 2015. The directive emphasizes planning and implementation at the scale of hydrologically defined river basin districts (RBDs) and encourages participatory processes involving all interested stakeholders. The study explores the extent of transformation in EU water governance, focusing on institutional adaptation and procedural innovation to facilitate stakeholder participation.

The research finds a general tendency towards increased stakeholder participation in river basin management across the examined member states. However, this shift is circumscribed, and there are clear continuities in pre-WFD institutional and procedural arrangements. The WFD has driven a varied and uneven shift to river basin-level planning among member states, leading to efforts to institutionalize stakeholder involvement.

Examining the case of Germany, the study notes the designation of RBDs but with state-level environment ministries as competent authorities, maintaining existing water resource planning structures. In contrast, Sweden underwent substantial transformation with post-WFD reforms, while France and Poland demonstrated mixed experiences. The establishment of advisory groups to involve organized stakeholders in the planning process is a common trend.

The article discusses the challenges and barriers faced by member states in adapting their governance systems, particularly when shifts involve a scalar redistribution of competencies. While there is a trend towards greater formal provision for public and stakeholder participation, the study highlights the diversity of political-cultural contexts and the influence of broader socio-political changes on the observed shifts.

The discussion emphasizes the mixed results of the WFD's procedural innovations, with a significant number of measures still ongoing or not started, according to a European Commission report. The article concludes that the WFD has imposed common targets and timelines but has encountered varied national contexts and pre-existing institutional structures. It underscores the need for ongoing research to assess the achievements and challenges of WFD implementation, especially regarding substantive goals and water quality outcomes.

The study acknowledges a shortage of comparative analysis of WFD implementation and suggests that further research should closely examine the functioning, legitimacy, and effectiveness of the new institutions and procedures resulting from the directive. The cyclical nature of WFD implementation provides opportunities for ongoing observational case study research, focusing on adaptation and learning in European water governance. The article calls for continued comparative research to track progress at the European level and facilitate horizontal governance learning across EU member states.

Yr: 2016 Undermining European Environmental Policy Goals? The EU Water Framework Directive and the Politics of Exemptions:

Boeuf, Blandine, Fritsch, Oliver and Martin-Ortega, Julia:

Paper Synopsis

The Water Framework Directive (WFD) is the core legislative instrument in the European Union for the protection of water resources. Adopted in 2000, its objectives were to achieve “good status” for water bodies by 2015 and prevent any further deterioration. However, the European Commission and some stakeholders are rather dissatisfied with the implementation of the Directive so far, in particular with the use of exemptions to the environmental objectives. Exemptions are of paramount importance: they may constitute a significant obstacle to the achievement of the WFD’s objectives as they enable member states to lower the ambition of the Directive and to delay the achievement of good status, thereby undermining the environmental goal of the WFD. Critical voices observe an excessive reliance on exemptions, poor justifications, and great variations in their use. Based on an analysis of 120 policy documents and 15 semi-structured interviews, this article provides explanations for the politics of exemptions in EU water management. It shows that different viewpoints and interpretations on the WFD’s objectives and exemptions were already present in the negotiation phase of the Directive, but remained undefined on purpose. Moreover, dysfunctional decision-making procedures in the Common Implementation Strategy and the lack of political support in WFD implementation were significant obstacles to an agreement on this important issue. Finally, decisions on WFD implementation in member states were often driven by pragmatism. The article explains how the negotiations of the WFD and the EU-level discussion on the implementation of the Directive undermined environmental goals in EU governance; its findings are also relevant for policy fields other than water.

Tag

Water Framework Directive; governance; exemptions; economic analysis:

Annotation

The article by Blandine Boeuf, Oliver Fritsch, and Julia Martin-Ortega of University of Leeds, critically examines the implementation of the Water Framework Directive (WFD) in the European Union and its implications for water resource protection. The WFD, adopted in 2000, aimed to achieve "good status" for water bodies by 2015, but concerns have been raised about its effectiveness, particularly regarding the use of exemptions.

The authors assert that exemptions in the WFD are crucial but contentious, as they allow member states to deviate from environmental objectives, potentially hindering the directive's overarching goal. The paper explores the politics surrounding exemptions, emphasizing their role in lowering the ambition of the WFD and delaying the attainment of good status, thereby challenging the environmental objectives.

The research draws on an extensive analysis of 120 policy documents and 15 semi-structured interviews conducted with representatives from EU institutions, member states, and NGOs. The study spans three key periods: the negotiation phase of the WFD (1996-2000), the Common Implementation Strategy (CIS) phase (2001-2009), and the post-2009 implementation phase. The findings reveal divergent viewpoints and interpretations on WFD objectives and exemptions from the outset, reflecting a lack of consensus during the negotiation phase.

The authors shed light on the dynamics of exemption discussions within the CIS, a network aimed at harmonizing WFD implementation. Despite its role in developing a common understanding of the directive, the CIS faced challenges in addressing political issues, resulting in disagreements on exemptions. The article emphasizes the failure of the CIS to reconcile varying perspectives, attributing it to structural limitations and the inability to handle political nuances effectively. Furthermore, the paper delves into the post-2009 implementation phase, highlighting a shift of exemption debates to the national level. Member states' pragmatic considerations, coupled with a perceived gap between the Commission's expectations and domestic implementation, contributed to critiques regarding the justification of exemptions.

In conclusion, the research contends that while the WFD sets ambitious goals for water protection in Europe, the extensive use of exemptions, poor justifications, and varied implementation across member states can compromise environmental objectives. The article provides insights into the historical negotiations, debates within the CIS, and the subsequent implementation challenges. It suggests the need for a comprehensive impact assessment during future revisions of the WFD, emphasizing the importance of well-defined terms and increased political involvement to address the complexities of exemption clauses. Overall, the paper contributes valuable perspectives to the ongoing discourse on environmental governance and policy effectiveness in the European context.

Yr: 2016 Studying the implementation of the Water Framework Directive in Europe a meta-analysis of 89 journal articles:

Boeuf, Blandine and Fritsch, Oliver:

Paper Synopsis

The Water Framework Directive (WFD) is arguably the most ambitious piece of European Union (EU) legislation in the field of water. The directive defines a general framework for integrated river basin management in Europe with a view to achieving “good water status” by 2015. Institutional novelties include, among others, water management at hydrological scales, the involvement of nonstate actors in water planning, and various economic principles, as well as a common strategy to support EU member states during the implementation of the directive. More than 15 years after the adoption of the WFD, and with the passing of an important milestone, 2015, we believe it is time for an interim assessment. This article provides a systematic review of existing scholarship on WFD implementation. We identify well-documented areas of research, describe

largely unchartered territories, and suggest avenues for future studies. Methodologically, we relied on a meta-analysis. Based on a codebook of more than 35 items, we analyzed 89 journal articles reporting on the implementation of the directive in EU member states. Our review is organized around three major themes. The first is “who, when, and where”; we explore publication patterns, thereby looking into authors, timelines, and target journals. The second is “what”; we analyze the object of study in our source articles with a particular focus on case study countries, policy levels, the temporal stage of WFD implementation, and if the directive was not studied in its entirety, the aspect of the WFD that received scholarly attention. The third is “how,” i.e., theoretical and methodological choices made when studying the WFD.]

Tag

EU environmental policy; Meta-analysis; Policy implementation; Systematic review; Water Framework Directive; Water governance.:

Annotation

Blandine Boeuf and Oliver Fritsch - University of Leeds.

This article systematically reviews the existing body of scholarship on implementing the Water Framework Directive. It aims to delineate well-explored research areas, outline aspects that have yet to be thoroughly investigated and propose potential directions for future studies. The methodology employed involves a meta-analysis, where 89 journal articles reporting on the implementation of the WFD in EU member states were analyzed using a comprehensive codebook comprising more than 35 items.

The review is structured around three principal themes. The first theme, "who, when, and where," delves into publication patterns, examining authors, timelines, and the targeted journals. The second theme, "what," scrutinizes the subject matter of the source articles, focusing on case study countries, policy levels, the temporal stage of WFD implementation, and, if not studied comprehensively, the specific aspect of the WFD that garnered scholarly attention. The third theme, "how," addresses the theoretical and methodological choices made in examining the WFD.

Yr: 2015 The politics of multi-scalar action in river basin management: Implementing the EU Water Framework Directive (WFD):

Hueesker, Frank and Moss, Tim:

Paper Synopsis

Scholars of environmental governance are increasingly intrigued by issues of scale. Efforts to institutionalise river basin management represent a pertinent exemplar, as they aspire to strengthen hydrological vis-à-vis political–administrative scales of governance. The EU Water Framework Directive (WFD) is one of the most ambitious policy initiatives worldwide to reconfigure water management planning around the hydrological scale of river basins. Whilst it is widely assumed that the WFD is rescaling

water governance in Europe, few empirical studies have been conducted to ascertain how far this is the case, what scalar strategies and practices are emerging and to what effect. The paper addresses these open issues with a study analysing the multi-scalar actions of water authorities, water management organisations, local authorities and interest groups involved in implementing the WFD. It investigates how stakeholders are acting scalar from the local to the European scale and back to further their interests in the course of WFD implementation, focussing on the Wupper sub-basin in Germany. Drawing for conceptual insight on the human geography debate on the politics of scale and processes of rescaling, we demonstrate how all relevant stakeholders are increasingly working across scales to advance their interests but in very different ways, with different degrees of deliberation and to different effect. A typology of multi-scalar action is developed to interpret this diversity. The paper draws conclusions on how multi-scalar action is altering not only power relations between the actors but also the scalar configurations themselves.

Annotation

The authors are part of the Leibniz Institute for Regional Development and Structural Planning—under their politics and planning initiative.

The paper empirically assesses the scalar actions and practices of multiple actors and interest groups that are either responsible for or have a stake in the implementation of the EU WFD— which necessitates a scalar reorganization of water governance in Europe.

The paper particularly focuses on the Wupper sub-basin in Germany—a tributary of the Rhine and unpacks the practices and perceptions of key actors involved across various levels—ranging from European Commission, German Federal Government, State of North-Rhine Westphalia (responsible for implementing the WFD in the Wupper sub-basin to Wupper Water Board, EU interest groups and other local authorities.

The empirical analysis gives a critical understanding of multi-scalar environmental governance in Europe by attempting to answer three interrelated questions in the implementation of EU WFD- how and in what ways different actors operate across different political and administrative scales, how their functioning reconfigures the old scalar configuration premised on traditional hierarchical water governance and lastly how these change in practice further influence the WFD implementation.

The article concludes that the practice of WFD has made it essential for key actors and stakeholders to engage in multi-scalar activities, for them, to be able to comply with the legal responsibilities and to reinforce their own interests. Second, there has been a visible shift from the previous hierarchical governance arrangements towards cross scalar interactions. In particular, the work notes how WFD has enabled a reimagination of the scalar dimensions in water governance in Europe.

Yr: 2014 The Congress of Vienna and its global dimension: 1814-2014:

van der Werf, Hans, Secretary General CCNR

Tag

CCNR European Integration, Institutions:

Annotation

Address by the Secretary-General, Mr van der Werf, at the Congress on “The Congress of Vienna and its global dimension: 1814-2014” (18 - 22 September 2014) Delivering the opening address at this congress in Vienna titled "The Congress of Vienna and its global dimension: 1814-2014," the Secretary-General highlighted that the Central Commission for the Navigation of the Rhine originated from the deliberations of this historic Congress.

The CCNR, originating from cooperation among riparian States, was established to facilitate international river navigation by eliminating hindrances, such as tolls and restrictive rules, and actively working on projects to enhance the riverbed and fairway for improved navigation efficiency and reliability. The Rhine, often described as "roads that move," serves as a crucial waterway accommodating two-thirds of Europe's river transport, and the enduring dedication of the Central Commission over nearly two centuries to the river's prosperity is underscored by factors contributing to its continuity.

The regulatory and institutional flexibility that has guided the working of CCNR. The success of CCNR as a transboundary institution to a great extent is attributed to its 'adaptability and pragmatism' in its functioning. The initial establishment of essential framework conditions for ensuring the overall safety of navigation on the Rhine, rooted in nineteenth-century concepts, has evolved to align with contemporary perspectives, emphasizing "sustainability" as a key priority for the CCNR.

Yr: 2014 Contrasting stories on overcoming governance challenges: the implementation of the EU Water Framework Directive in the Netherlands:

van der Heijden, Jeroen, ten Heuvelhof, Ernst, Broekhans, Bertien, van der Arend, Sonja, van Bueren, Ellen, Harteveld, Casper and van Ruijven, Theo:

Paper Synopsis

The European Union Water Framework Directive (WFD) has provided the European Member States with a range of interacting governance challenges. This article studies three of these (the need for new administrative arrangements, public participation, and the enforced strict time frame). It questions how these interacting governance challenges were addressed in implementing the WFD in the Netherlands ? a particularly interesting country since the European Commission assesses its implementation process in relatively positive terms, while an in-depth study reported on in this article tells a contrasting story. Based on this study, the article concludes that especially the interaction effects between the governance challenges may help us to better understand the

outcome of the WFD-implementation process, and to provide more suitable advice as to how to improve the implementation process in future rounds.

Annotation

The research article, by Jeroen van der Heijden (of Australian National University) , Ernst ten, Bertien Broekhans, Sonja van, Ellen van, Casper Harteveld and Theo van Ruijven (of Delft University of Technology) delves into the complexities and contradictions surrounding the implementation of the European Union (EU) Water Framework Directive (WFD) in the Netherlands. The study aims to unravel the interacting governance challenges faced during the WFD implementation, focusing on administrative arrangements, public participation, and strict timelines, that are examined in the Dutch context.

Notably, the study questions the discrepancy between the European Commission's (EC) relatively positive assessment of the Netherlands' implementation and the contrasting findings of an in-depth study conducted by the authors. They conducted a comprehensive evaluation of the WFD implementation in the Netherlands, focusing on the period after the first phase completion in 2010. Using a mixed-methods approach, including interviews, surveys, and analysis of policy documents. The study explores the governance challenges faced by Member States and how the Netherlands addressed them.

The Netherlands, despite being recognized for its efforts by the EC, receives a critical evaluation based on their in-depth study. The article highlights the institutional changes made to comply with the WFD, emphasizing the restructuring of water management around river basins. It also examines public participation measures, including formal consultation and area processes, as well as the introduction of a convergent planning scheme to meet strict timelines.

The contrasting stories emerge when comparing the EC's positive assessment with the critical views of the study's respondents. The article reveals that the success presented by the EC may be attributed to an isolated evaluation of individual governance challenges, overlooking the intricate interactions between them, which are crucial for a comprehensive assessment of the implementation process.

The article concludes by revisiting the WFD implementation in the Netherlands over different time frames, providing insights into the chronological development of the process. Lessons learned include the challenges posed by institutional schizophrenia, the impact of excessive meetings on stakeholder involvement, and the potential for technocratic public participation under time pressure.

Yr: 2014 Investigating the use of environmental benefits in the policy decision process: a qualitative study focusing on the EU water policy:

Thaler, T., Boteler, B., Dworak, T., Holen, S. and Lago, M.:

Paper Synopsis

This paper presents the use of environmental benefits in the policy-making process in nine European countries. Growing competition for financial resources suggests that a precise understanding of the benefits provided by policies is needed. In particular, the environmental co-benefits that environmental policies offer must be more thoroughly investigated. Yet because there is often a focus on systems rather than individual species or specific environmental factors it becomes more difficult to characterise benefits. This paper shows that the role of environmental benefits to advise policy action differs across selected European countries. Environmental benefits are used at different stages of the policy cycle and for different purposes. In many cases they are not used to inform high level decision making but to stimulate public debate or to develop more targeted legislative proposals.

Annotation

T. Thaler - Flood Hazard Research Centre, Middlesex University, London; B. Boteler - Fresh-Thoughts Consulting, Vienna, Austria; T. Dworak & M. Lago – Ecologic Institute, Berlin, Germany; and S. Holen - Norwegian Institute for Water Research, Oslo, Norway.

This paper explores the integration of environmental benefits into the policy-making processes of nine European countries. Specifically, the paper emphasizes the necessity to delve deeper into the environmental co-benefits associated with environmental policies. The challenge lies in the predominant focus on systems rather than individual species or specific environmental factors, making it more complex to characterize these benefits accurately. Primary challenges include the absence of clear directives for assessing environmental policies, particularly at the regional and local levels, along with constraints in financial and human resources. This is exacerbated by deficiencies in knowledge, experience, and time, as well as limitations in the capacity to assess, evaluate, and monetize environmental benefits within the context of emerging policy directions.

The research findings reveal that the role of environmental benefits in guiding policy action varies among the selected European countries. These benefits are utilized at various stages of the policy cycle and serve diverse purposes. In many instances, they are not employed to inform high-level decision-making directly but rather to stimulate public discourse or formulate more targeted legislative proposals.

Yr: 2014 From a sewer into a living river: the Rhine between Sandoz and Salmon:

Plum, Nathalie and Schulte-Wülwer-Leidig, Anne:

Paper Synopsis

After presenting some key data about the River Rhine, the main problems, tasks and the structure of the International Commission for the Protection of the Rhine (ICPR) as an intergovernmental organization are explained. Right up to the 1970–1980s, the river was so heavily polluted with wastewater that it was generally called the sewer of Europe (ICPR, A Programme for Migratory Fish in the Rhine System 2004, Kobl enz, 2004). Some milestones—

disasters and resulting programmes—in the history of the ICPR are shown, following the main topics of the ICPR work: water quality, ecology, flood protection and climate change. The main outcomes of the programmes are presented and linked with European Directives. It is shown how the achievements of the Rhine Commission have triggered the development of directives at European level, such as the Water Framework Directive (2000) and the Directive on Flood Assessment and Management (2007). Finally, positive and negative experience is reconsidered and factors for a successful transboundary river basin management are pointed out against the background that other river basin co-operations starting their work today could share the lessons learnt by the ICPR.

Annotation

This academic article, authored by Nathalie Plum and Anne Schulte-Wülwer-Leidig, provides a comprehensive overview of the transformation of the Rhine River from a heavily polluted watercourse, often referred to as the "sewer of Europe," into a thriving ecosystem. The authors delve into the history, challenges, and successes of the International Commission for the Protection of the Rhine (ICPR), an intergovernmental organization established in 1950 to manage transboundary waters.

The article traces the evolution of the ICPR's strategies, emphasizing a shift from a historical focus on monitoring and conventions to a more proactive approach following a significant environmental disaster in 1986. The Sandoz incident, involving a warehouse fire near Basel, led to a substantial release of toxic substances into the Rhine, prompting a swift and transformative response from the ICPR and participating nations.

Key components of the ICPR's work, including water quality, ecology, flood protection, and climate change, are explored. The authors highlight the positive outcomes of the Rhine Action Programme (RAP) of 1987, which aimed to improve the river's ecosystem, ensure drinking water quality, and address pollution concerns. The subsequent 'Rhine 2020' program aligns with European directives and emphasizes sustainable development goals.

The article underscores the ICPR's role in influencing European directives, such as the Water Framework Directive and the Directive on Flood Assessment and Management, demonstrating the organization's impact beyond national borders. It discusses ongoing challenges, including the management of micro-pollutants and the importance of ecological status according to the Water Framework Directive.

The authors emphasize the significance of the ICPR's decentralized approach, where national delegations actively contribute based on political mandates and technical expertise. The article concludes by asserting the relevance of the ICPR's experiences and lessons for other transboundary river basin organizations, advocating for a balance between political commitments and legally binding measures in achieving effective water management. They underscore the necessity of defining common goals, implementing agreed-upon measures, and investing in actions on multiple levels to enhance the entire ecosystem. It points out

that the incorporation of ICPR's strategies into European Directives facilitates the efficient implementation of measures, supporting and accelerating the overall objectives of sustainable water management in the Rhine river basin.

Yr: 2014 Multi-level governance, policy implementation and participation: the EU's mandated participatory planning approach to implementing environmental policy:

Newig, Jens and Koontz, Tomas M.:

Paper Synopsis

Innovations in European Union (EU) policy making have produced a distinctive, novel mode of policy that combines components of participatory and multi-level governance for policy implementation. In this manuscript we provide a conceptualization of what we term the EU's ?mandated participatory planning? (MPP) approach. This approach is increasingly used to implement EU directives, mandating the explicit formulation of certain plans or programmes on mostly subnational or cross-national levels. Drawing on three empirical examples from (mostly) environmental policy, we argue that analysing MPP as such is useful to help identify challenges and possibilities for EU policy making. Our framework provides a means to organize inquiry and compare disparate policies, and to more broadly understand the integration of policy, planning and implementation. This perspective, in turn, sheds fresh light on familiar concepts at the intersections of multi-level governance, policy implementation and participatory governance, namely multilayer implementation, participatory implementation and polycentric governance.

Annotation

The article by Jens Newig and Tomas M. Koontz delves into the conceptualization of the European Union's (EU) 'mandated participatory planning' (MPP) approach to policy implementation, particularly evident in environmental policy directives. The authors argue that MPP represents a distinctive and novel mode of policy making that combines elements of participatory and multi-level governance for effective policy implementation. The MPP approach mandates the explicit formulation of plans or programs, typically on subnational or cross-national levels, and involves the participation of non-state organized interests or the larger public.

The authors contend that MPP is a response to several factors, including the EU's perceived lack of democratic legitimacy and responsiveness. By involving citizens and private actors not only in the legislative drafting process but also in policy implementation, the EU seeks to address these concerns. Moreover, the article highlights the EU's increasing focus on the effective delivery of policies, as reflected in the Mandelkern report on Better Regulation and the current emphasis on 'smart regulation.' The iterative planning characteristic of MPP is seen as a learning mechanism, similar to the 'Open Method of Coordination,' albeit within a stricter legal framework and different overall objectives.

The empirical basis of the article is built upon three EU directives—the Water

Framework Directive, Floods Directive, and Air Quality Directives—that exemplify different facets of the MPP approach. For instance, the Water Framework Directive mandates the development of River Basin Management Plans and Programs of Measures to achieve 'good status' of water quality. The Floods Directive, focusing on human health and environmental protection, introduces flood risk management plans with less formalized public participation. The Air Quality Directives, while differing in some respects, emphasize the development of air quality plans in zones exceeding pollutant concentrations.

The article contextualizes MPP within the realms of multi-level governance, policy implementation, and participatory governance. In terms of multi-level governance, MPP is characterized by new levels of governance and requires increased coordination across various administrative levels. From a policy implementation perspective, MPP introduces a secondary policy cycle, with planning becoming a political program rather than traditional implementation. In the realm of participatory governance, MPP aligns with the EU's commitment to citizen and civil society participation in decision-making, incorporating participatory elements within a centrally steered planning and reporting scheme.

In conclusion, the article emphasizes the significance of MPP as a distinct form of public policy implementation within the EU. It recognizes the impact of MPP on local administrations and positions it at the intersection of multi-level governance, policy implementation, and participatory governance. The authors call for further empirical research to explore how MPP operates across different directives, member states, and its effectiveness in addressing societal problems. They also suggest comparing MPP with similar approaches abroad for cross-context learning.

Yr: 2014 What Role for Public Participation in Implementing the EU Floods Directive? A Comparison With the Water Framework Directive, Early Evidence from Germany and a Research Agenda:

Newig, Jens, Challies, Edward, Jager, Nicolas and Kochskämper, Elisa:

Paper Synopsis

We examine the roles and functions of non-state actor participation in implementing the EU Floods Directive of 2007 (FD). We draw on experiences with participation under the Water Framework Directive (WFD), because of important links between the two directives. Comparing the legal bases and the different functions for participation, we observe the paradoxical situation that while the WFD has fervently advocated public participation public interest has remained low, whereas the FD is less sanguine about participation despite citizens being potentially more affected by flood management issues – particularly given the current trend towards a 'risk management' approach under the FD. Our examination of current FD implementation in Germany reveals a considerable variety of participation approaches, as well as a general trend to 'less' rather than 'more' participation as compared with the WFD. The paper closes by discussing implications for future flood management planning and

avenues for comparative research.

Annotation

The paper titled by Jens Newig et al. of Leuphana University, Germany explores the roles and functions of non-state actor participation in implementing the EU Floods Directive (FD) of 2007. The study draws on experiences with participation under the Water Framework Directive (WFD) due to the significant links between the two directives. The authors aim to assess the effectiveness of public participation in flood risk management planning and identify parallels and differences between the FD and the WFD.

The paper begins by highlighting the importance of the FD, enacted in response to the increased frequency of flood disasters in Central Europe. The FD focuses on reducing adverse consequences associated with floods and requires the drafting of flood risk management plans (FRMPs) for flood-prone areas by 2015. The paper emphasizes the instrumental rationale behind public participation, expecting it to lead to better-informed and widely accepted decisions for more effective policy delivery. A key paradox emerges in the paper's analysis: while the WFD strongly advocates public participation, interest remains low, noting the impact of the WFD on water-related public administration across Europe, whereas the FD, which mandates less public involvement, is potentially more relevant given the increased risk management approach.

The authors discuss the legal and policy bases for participation under both directives, emphasizing the novel approach of mandated participatory planning (MPP). It suggests that while participation may not have had a substantial impact on shaping management plans in WFD, it has fostered trust and networks among participants.

The functions of participation in flood risk management are explored, considering the societal accommodation of risk and the importance of stakeholder and public input. The participation is crucial in managing the accessibility of knowledge about risk sources and consequences.

The subsequent section reviews early experiences with FD-related participation across Europe, focusing on flood risk and hazard mapping and Flood risk management (FRM) planning. The authors note limited participation in flood risk mapping, mainly led by experts. Pilot FRM planning projects are briefly discussed, highlighting the scarcity of literature detailing the participatory process.

The paper concludes with a multi-level analysis of FD implementation in Germany, emphasizing the diverse participatory approaches adopted by different federal states. Three general types of FRM planning strategies are identified, varying in the degree of stakeholder involvement. The authors call for a more inclusive approach to FRM planning, highlighting the need for structured participation to avoid delays in flood protection measures. In summary, the paper offers valuable insights into the evolving landscape of public participation in flood risk management planning, comparing the FD with the WFD and providing early evidence from Germany.

Yr: 2014 From Planning to Implementation: Top Down and Bottom Up Approaches for Collaborative Watershed Management:

Koontz, Tom and Newig, Jens:

Paper Synopsis

Collaborative approaches are increasingly used to address challenging environmental problems in the United States and around the world. The inclusion of multiple stakeholders and sources of information is expected to solve such problems. Prior research has highlighted the importance of collaborative process characteristics in reaching agreements and building social capital, but less is known about what factors affect the implementation of such agreements. A parallel stream of research in policy implementation theory has developed variables and frameworks to explain the implementation of authoritative policy prescriptions. Drawing on the top-down/bottom-up perspectives on implementation, this study examines implementation of collaborative recommendations along a continuum of top-down/bottom-up approaches. A comparison of six cases in two states (Lower Saxony, Germany and Ohio, United States) indicates important differences in perceptions of implementation and environmental improvements, although whether an effort was more top down or more bottom up was not a key determinant of results. In both states, stakeholder collaborative planning efforts included substantial involvement from stakeholders and multiple government agencies and levels. Participants in the Ohio cases perceived higher levels of implementation and environmental improvements. Key factors promoting implementation of plan recommendations were resources (funding and a full-time coordinator), willing land owners, and networks. In the Lower Saxony cases, collaborative plans were seen as less impactful, but nevertheless the process of plan development did foster networks for implementing some actions to improve water quality.

Annotation

The paper, authored by Tomas M. Koontz (of Ohio State University) and Jens Newig (of Leuphana University), explores the dynamics of collaborative environmental management, specifically focusing on watershed planning. The central theme revolves around the increasing use of collaborative approaches to tackle environmental challenges globally, emphasizing the involvement of multiple stakeholders and information sources. The study investigates the transition from planning to implementation in collaborative watershed management, employing a comparative analysis of six cases in Ohio, United States, and Lower Saxony, Germany.

The authors contextualize the evolution of collaborative environmental management, particularly in watershed planning, highlighting its emergence as a response to the limitations of command-and-control policies in addressing nonpoint source pollution and other environmental challenges. The significance of collaborative efforts in the United States post-1985, as well as European endeavors exemplified by the EU Water Framework Directive of 2000, serves as a backdrop to their research.

The research addresses critical gaps in understanding the factors influencing the implementation of collaborative agreements. While prior studies have emphasized collaborative process characteristics and their role in building social capital, less attention has been given to the variables affecting the actual implementation of collaborative recommendations.

The paper draws on the top-down/bottom-up perspectives on implementation theory to examine the cases along a continuum of these approaches. Six cases from Ohio and Lower Saxony are analyzed, revealing crucial differences in perceptions of implementation and environmental improvements. Contrary to expectations, whether an effort was more top-down or bottom-up did not emerge as a decisive factor in results. The study underscores the importance of resources, such as funding and a dedicated coordinator, willing landowners, and networks, in promoting the implementation of plan recommendations.

Ohio cases demonstrated higher perceived levels of implementation and environmental improvements, attributed to local actors, careful scrutiny by the state agency, and the availability of grants linked to endorsed plans. In Lower Saxony, collaborative plans were considered less impactful, primarily due to challenges in plan scrutiny, lack of funding linkage, and the creation of overly general plans. Despite this, the collaborative planning process in Lower Saxony still fostered networks for implementing some water quality improvement actions.

The paper contributes to the evolving scholarship on collaborative environmental management, bridging the gap between collaborative planning and its on-the-ground implementation. It also aligns itself with the broader policy implementation literature, distinguishing collaborative implementation from traditional top-down approaches, and highlighting the significance of variables like funding, leadership, and networks.

The findings emphasize the need to link funding to collaborative plan recommendations, showcasing its role in promoting implementation. The comparison of the U.S. and German cases provides nuanced insights into the contextual factors influencing collaborative implementation, pointing towards the importance of tailoring strategies based on the unique circumstances of each case.

Yr: 2013 Germany's Light Version of Integrated Water Resources Management:

Theesfeld, Insa and Schleyer, Christian:

Paper Synopsis

The design and implementation of the EU Water Framework Directive (WFD) in Germany has clearly been inspired by the Integrated Water Resources Management (IWRM) concept. The paper shows, however, that Germany's current river basin management follows a light version of IWRM, by only coordinating groundwater and surface water responsibilities rather than integrating various water related sectors. When assessing the current implementation of the WFD, Article 14 on participation is crucial. This is because the establishment of participatory forums involving stakeholders and the general

public is directly related to the question of fit between the administrative and political boundaries of water management and the hydrogeological territory of a river basin. We argue that management concepts that simultaneously aim at integration and participation, such as IWRM, seem to pull in opposite directions. Based on document analysis, an extensive literature review and interviews with key informants, two cases of river basin management in Germany – Ems and Warnow–Peene – empirically substantiate the argument that participation needs to be linked up effectively with the existing, democratically legitimized decision-making structures, which becomes more complicated the more decision-making power and responsibilities are integrated. Moreover, we found that most national, federal and regional state activities are still limited to simply informing and consulting people. The paper ends with recommendations on how to improve governance structures for water management while embracing Germany's approach of light IWRM.

Annotation

This academic paper, explores the implementation of the EU Water Framework Directive (WFD) in Germany, with a focus on Integrated Water Resources Management (IWRM). The authors, Insa Theesfeld and Christian Schleyer of Berlin–Brandenburg Academy of Sciences and Humanities, Berlin, Germany, argue that Germany's river basin management, as influenced by the WFD, represents a light version of IWRM. The paper emphasizes the importance of Article 14 on participation in the WFD and assesses the fit between administrative and hydrogeological boundaries in water management.

The paper begins by contextualizing the adoption of river basins as management units in Germany, dating back to the 19th century, and the subsequent incorporation of IWRM concepts in the late 1990s. The authors highlight the key elements of the WFD, emphasizing its focus on water resources protection, pollution prevention, and active public involvement. They note that while the WFD promotes a catchment-based approach, it does not explicitly demand integration with other resource use sectors.

The paper delves into the socio-political characteristics of water management in Germany, emphasizing a sectoral and functional division of responsibilities. They argue that the implementation of the WFD has introduced new elements of governance but has not fully integrated decision-making structures, leading to challenges in coordinating water management with spatial planning systems.

Two case studies, the Warnow–Peene and Ems river basins, are presented to empirically substantiate the argument. **In both cases, the paper finds that public and stakeholder participation is limited to advisory roles, with final decisions resting with existing water authorities and federal state parliaments.** The authors discuss the need for effective linkages between participatory forums and decision-making structures.

The discussion and conclusion section addresses the tension between integration

and participation in IWRM. The paper argues that the WFD implementation in Germany represents a light version of IWRM, where predetermined goals may conflict with the participatory decision-making process. The authors introduce the concept of the "participation trap," where public involvement may lead to unsustainable outcomes based on economic considerations.

The conclusion suggests recommendations for improving governance structures for water management. The authors propose continuing the focus on horizontal and vertical coordination, strengthening integrating elements, and perpetuating and intensifying consultation processes with the general public. Additionally, practical recommendations include adequately rewarding state employees for coordination tasks, establishing conflict resolution arenas, and creating accessible databases for data exchange between scientists and water authorities.

Yr: 2013 The Water Framework Directive as an approach for Integrated Water Resources Management: results from the experiences in Germany on implementation, and future perspectives:

Richter, Sandra, Völker, Jeanette, Borchardt, Dietrich and Mohaupt, Volker:

Paper Synopsis

The implementation of the EU-Water Framework Directive (WFD) might also be considered an approach for the implementation of Integrated Water Resources Management in Europe. The WFD outlines the ambitious goal of attaining “good status” for Europe’s rivers, lakes, groundwater bodies and coastal waters by 2015 in accordance with clearly defined time lines and legally binding programmes of measures. EU member states submitted their WFD river basin management plans to the European Commission in March 2010. Almost all member states accomplished the formal implementation, but nations like Germany are far from achieving the “good status”. For Germany, exemptions have been claimed for 82 % of all surface water bodies and for 36 % of all groundwater bodies. According to the identified significant pressures and impacts, the German Federal States, the Federal government and the European Union will have to significantly increase the coordination and coherence of the policies in the field of agriculture, energy generation, transport (shipping) and production or use of chemicals. The next generation of river basin management plans may be used for the harmonisation of these topics and extend to the polluter-specific characterization of water body pressures and impacts, structures and methods of monitoring, allowing the differentiation of multiple stressors, the designation of heavily modified water bodies and the determination of good ecological potential, exemptions and their justification, coherent transregional management objectives and reporting issues. The present study focuses on the assessment of the status of German water bodies, the achievement of environmental objectives and the necessary measures required to meet the goals.

Annotation

This academic article, authored by Sandra Richter, Jeanette Vo¨lker, Dietrich Borchardt,

and Volker Mohaupt, delves into the challenges Germany faces in achieving the ambitious goals outlined in the WFD, emphasizing the need for increased coordination and coherence in policies related to agriculture, energy generation, transport, and chemical usage.

The authors begin by providing context on the significance of IWRM as a globally accepted paradigm for water resource management. They highlight the transformative nature of the WFD in European water management, going beyond emission targets to pursue the overarching goal of attaining 'good status' for various water bodies by 2015. The article critically assesses Germany's progress in this regard, revealing that despite the formal implementation of the WFD, the nation struggles with exemptions for a significant proportion of both surface water bodies (82%) and groundwater bodies (36%).

A central theme is the coordination required at multiple levels, including within Germany's federal structure and across EU member states. The authors stress the necessity for cross-border cooperation to evaluate and manage water-related challenges uniformly, particularly in river basins that extend across international boundaries. **The article underscores the establishment of coordinating bodies and river basin associations as essential for steering and monitoring these efforts.**

The status assessment section provides valuable insights into the ecological and chemical status of German water bodies. Using diverse monitoring programs, the authors evaluate ecological status based on biological components, and chemical status considering priority substances. The data reveals that a substantial percentage of surface water bodies fall into the 'moderate,' 'poor,' and 'bad' status categories, indicating the complexity of achieving 'good status' by the specified deadlines.

The authors discuss exemptions, often attributed to 'natural conditions,' 'technical infeasibility,' or 'disproportionate costs.' They elaborate on the challenges associated with implementing measures and emphasize the need for a nuanced approach in justifying exemptions, considering factors such as the time required for measurable positive effects and technical feasibility.

The article critically analyses the programs of measures mandated by the WFD, distinguishing between basic and supplementary measures. It highlights planned activities for morphology, agriculture, continuity, municipality/household, and stormwater. The discussion extends to financing instruments, emphasizing the importance of the cost-recovery principle, environmental damage prevention, and the polluter-pays principle.

In conclusion, the authors acknowledge the ambitious deadlines set by the WFD and the considerable efforts made in Germany. They identify ongoing uncertainties and the necessity for further research, emphasizing the importance of a harmonized approach in the next river basin management planning phase.

Yr: 2013 Europe's River: The Rhine as Prelude to Transnational Cooperation and the Common Market:

Cioc, Mark:

Paper Synopsis

This chapter examines the role of the Rhine Commission in the development of the Rhine as one of the world's most important commercial waterways. Transnational cooperation is perceived today as a key component of environmental protection, but in the past many cooperative projects resulted in economic development at the expense of the environment. At the Congress of Vienna in 1815, diplomats established the Rhine Commission to foster European political cooperation and economic growth, much as the European Union and Common Market do today. However, the Commission's single-minded purpose—the improvement of navigation through river engineering—came at the expense of the river's natural ecology. The Rhine Commission served as a model for river commissions across the globe for the next century and a half, resulting in a multitude of industrial rivers that have a canal-like profile and a degraded biological habitat.

Annotation

'Europe's River: The Rhine as Prelude to Transnational Cooperation and the Common Market' by Marc Cioc is a book chapter from the edited volume on 'Global Environment: New Approaches to International Environmental History'. The book makes an attempt to explore the 'complex interplay between nation-states and the global environment in the nineteenth and twentieth centuries'. The chapter on the Rhine is one such instance where the author examines the key role of the Rhine Commission, which served as a political forum in enabling cooperation among the nations that eventually transformed the Rhine into one of the world's most important commercial waterways. The development of the Rhine regime has been vital, and it is often considered a precursor to the European Common Market.

The economic importance of the Rhine necessitated large-scale engineering projects to remove many of the natural barriers that were significantly hindering navigation prospects over the Rhine, as well as recurrent flood incidents. Notable among many such projects is the Tulla Rectification Project, which was initiated in 1817, shortly after the constitution of the Rhine Commission. The work further alludes to the Rhine Commission being the template for many river organizations in Europe as well as around other parts of the world, including the Mississippi River Commission and the Missouri River Commission.

Although the Rhine Commission served as an institutional model, the author critiques the 'single purpose' focus of the commission on the improvement of navigation, which often came at the expense of the environmental degradation of the Rhine. This eventually led to the creation of a separate institution to deal with the Rhine pollution a century and a half later. As Cioc writes, 'So persistently indifferent was the Rhine Commission to ecological issues that in 1950 European governments established the International

Commission to Protect the Rhine to counterbalance it.'

Yr: 2012 Spatial Fit, from Panacea to Practice: Implementing the EU Water Framework Directive:

Moss, Timothy:

Paper Synopsis

Within the broad discourse on the concept of fit and its relevance for the governance of social–ecological systems, problems of spatial fit have attracted particular attention. Mismatches abound between the geographical extent of an environmental resource and the territorial scope of the institutions affecting its use. Managing water resources around river basins is, perhaps, the most prominent illustration of attempts to reconcile the boundaries of an environmental resource with those of its respective institutions. Achieving perfect spatial fit has, however, proved an elusive task in practice. Beyond the difficulties of defining the physical boundaries of water and reordering institutional arrangements to reflect these, improving spatial fit for water can create new spatial misfits with other policy sectors upon which sustainable water management is dependent. The paper explores the way spatial fit is conceptualized, institutionalized, and practised, using the EU Water Framework Directive and its implementation in one sub-basin of the Rhine as an exemplar. The paper develops from the analysis a more differentiated and context-sensitive understanding of the concept of spatial fit of practical value to policy makers.

Tag

river basin management, spatial fit, Water Framework Directive, Wupper:

Annotation

The paper, authored by Timothy Moss of Leibniz Institute for Regional Development and Structural Planning, delves into the complex issues surrounding the conceptualization, institutionalization, and practical implementation of spatial fit, particularly in the context of water resource management. The study focuses on the EU Water Framework Directive (WFD) and its application in the Wupper sub-basin of the Rhine, aiming to provide a nuanced understanding of spatial fit that is of practical value to policymakers.

The authors defining problems of fit as the failure of institutions to adequately consider the nature, functionality, and dynamics of the ecosystems they influence. The paper distinguishes three categories of fit: functional, temporal, and spatial, with a specific focus on spatial fit. It critiques the pursuit of perfect spatial fit, emphasizing the flaws in reorganizing management solely around the physical geography of a resource. Instead, it advocates for a more pragmatic, context-sensitive approach that recognizes multiple geographies and encourages collaborative, flexible strategies.

The study then shifts to an examination of the EU Water Framework Directive, highlighting its ambitious attempt to institutionalize spatial fit in water resource management. The WFD prioritizes river basin management, making it obligatory for member states. Despite its emphasis on river basins, the WFD stops short of

mandating the creation of new river basin authorities, allowing member states to maintain existing structures. This compromise results in parallel structures, raising concerns about transaction costs and the need for coordination between state water authorities within a river basin district.

The third section explores the practical implications of implementing the WFD in the Wupper sub-basin. The authors investigate how actors cope with WFD requirements and address spatial misfits. The case study reveals changes in water governance practices, with the emphasis on river basin management influencing the coordination of water management planning across basins and sub-basins. Traditional regulatory styles are being challenged, necessitating collaboration with stakeholders beyond the water management realm.

The study introduces real-world examples from the Wupper sub-basin, such as conflicts over river passability improvements conflicting with the protection of a historic monument. External interventions, like the Regionale 2010 initiative, are shown to play a crucial role in resolving conflicts and aligning water policies with broader regional development interests.

In conclusion, the paper synthesizes findings from the literature review and case study, emphasizing that spatial fit should be viewed not as a panacea but as an analytical frame. The authors recommend exploring collaborative approaches, acknowledging multiple geographies, and paying attention to power dynamics in institutional adaptation. The nuanced application of spatial fit is essential, and the study encourages future research and policymaking to consider the interplay between fit and collaboration, the interpretation of institutions by actors, and the impact on power constellations.

Yr: 2012 The implementation of the Water Framework Directive in The Netherlands: Does it promote integrated management?:

Junier, Sandra and Mostert, Erik:

Paper Synopsis

The Water Framework Directive (2000/60/EC; WFD) is one of the most important European water directives of the past years. The WFD follows an integrated approach, but does it also promote integrated management in practice? In the Netherlands, the WFD has been implemented keeping the existing legal, financial and institutional framework intact as much as possible. An advantage of this arrangement is that the setting of objectives, the selection of measures for reaching the objectives and funding are well tuned to each other. This creates good conditions for the implementation of the programme of measures. A downside of this arrangement is the complexity of coordination. Coordination between different levels within the water management sector was relatively successful, but coordination with other sectors was not so successful, leading to a programme of measures consisting almost exclusively of water management measures. In the various coordination processes the role of intermediaries was significant, by supplying expertise or improving the coordination process or smoothing relations.

Annotation

This academic article, authored by S.J. Junier and E. Mostert from Delft University of Technology, explores the practical implications and outcomes of implementing the Water Framework Directive (WFD) in the Netherlands. The WFD, a crucial European water directive, is known for its integrated approach, primarily focusing on river basins.

It begins by emphasizing the significance of the WFD as one of the most important European water directives, particularly due to its integrated approach based on river basins. The central question addressed is whether the WFD, while advocating an integrated approach, actually promotes integrated water management in practice, where the focus is specifically on the Netherlands, a country with a rich water management history but lacking a tradition of managing water on a basin basis. The study examines the institutional setting for WFD implementation in the Netherlands, involving various authorities, the political landscape, and river basin management planning processes.

Netherlands, which aimed to maintain existing legal, financial, and institutional frameworks as much as possible. While this approach ensures alignment between objectives, measures, and funding, the article highlights its complexity in terms of coordination, especially with other sectors beyond water management.

Coordination is defined in the article as the mutual adjustment of goals and activities among different actors, while integration involves the simultaneous consideration of different interests to develop a unified approach. The analysis indicates that while coordination within the water management sector was relatively successful, coordination with other sectors was less effective. This resulted in a program of measures predominantly comprising water management initiatives, neglecting contributions from other sectors like agriculture, spatial planning, and economy. The article emphasizes the importance of striking a balance between top-down and bottom-up approaches in managing water resources.

The article introduces two key elements of the analysis: coordination and the role of intermediaries. In the context of coordination, it discusses the effectiveness of the existing institutional arrangement in achieving policy development, measure implementation, and funding alignment. It also explores the challenges faced in coordinating across different levels and sectors, with a focus on the complexities of the process.

In terms of intermediaries, the article identifies four key entities: STOWA, Project bureau Meuse, water ambassadors, and LTO. These intermediaries played essential roles in facilitating coordination processes, improving relations, supplying expertise, and advocating stakeholder interests. The authors suggest that while intermediaries couldn't resolve all coordination issues, they positively contributed to connecting diverse actors involved in the WFD implementation.

The conclusion reflects on the mixed results of the WFD implementation in promoting integrated water management. It

acknowledges the theoretical promotion of cross-level and cross-sectoral coordination but notes the limited success in practice, especially due to conflicting interests. The article concludes with two lessons, emphasizing the need for addressing coordination issues at both European and national levels and making the WFD implementation less technical to involve a broader range of stakeholders.

Yr: 2011 What participants do. A practice based approach to public participation in two policy fields:

van der Arend, Sonja and Behagel, Jelle:

Paper Synopsis

The rise of public participation in policy is an integral part of the shift from government to governance, and is presented as the best and most appropriate answer to requests for democratic policymaking. Both in official accounts and in the work of scholars, participation is situated in a discourse that combines a deliberative ethics with a managerialist pathos. This discourse has two important omissions: the neglect of the role of power in participation, and the poor coverage of the activities of participants. To remedy these omissions, this paper proposes a practice based approach to the study of participation. Two case studies of participants' practices are presented: one dealing with spatial planning, the other with qualitative water policies. The case studies show similarities and differences in practices of participation. These are related to the values that participants hold, the roles they adopt, and the context in which they are situated. The paper concludes that power relations in participation are only fully understood in the light of a complex field of practice that stretches beyond formal venues and official accounts of participation.

Annotation

This academic paper, authored by Sonja van der Arend (**post doctoral researcher at Delft Technical University)** and Jelle Behagel (**PhD candidate at Wageningen University)**, presents a critical examination of public participation in policymaking within the context of the shift from government to governance. The paper commences with an exploration of the rise of public participation as an integral aspect of the governance paradigm, emphasizing its portrayal as a democratic solution to policymaking challenges. However, the authors contend that the existing discourse tends to overlook power dynamics within participation and fails to adequately document the diverse activities of participants.

The writers are saying that the current way people talk about public participation, mixing ethical discussion with management ideas, is missing important points: the neglect of the role of power in participation and the insufficient coverage of participants' activities. **To address these gaps, the paper proposes a practice-based approach to the study of participation.** The proposed practice-based approach shifts the focus from managerial concerns to understanding what participants actually do in their daily interactions with policymaking.

To substantiate their argument, the authors present two case studies centered on spatial

planning and qualitative water policies in the Netherlands. These case studies serve as practical illustrations of participants' practices, shedding light on the values they hold, the roles they assume, and the contexts that influence their actions. The spatial planning case, for instance, reveals a transformation from collaboration to rivalry among participants, challenging the notion that public participation inherently equalizes power dynamics. The water policy case delves into the implementation of the Water Framework Directive, highlighting conflicts arising from diverging values and interests.

The methodological section outlines the practice-based approach, emphasizing moving away from the usual step-by-step research plan to a more flexible and reflective approach. Interviews play a central role in data collection, allowing the authors to explore participants' experiences, activities, and daily engagements in policymaking. By adopting this approach, the study captures the nuanced and dynamic nature of participatory practices.

The paper concludes by summarizing key observations from both case studies, emphasizing the dynamic and often unpredictable nature of participatory practices. It challenges the assumption that formal participatory processes alone can reshape power relations between government and society, arguing that historical institutional contexts significantly influence the balance of power.

Yr: 2011 The Institutional Design of Riparian Treaties: The Role of River Issues:

Tir, Jaroslav and Stinnett, Douglas M.:

Paper Synopsis

[International agreements governing rivers vary considerably in whether they contain institutional provisions for joint monitoring, conflict resolution, enforcement, and/or the delegation of authority to intergovernmental organizations. This article develops an explanation for why some river management treaties include more institutional provisions while others contain fewer, if any. The authors argue that certain types of issues related to river use—water quantity, water quality, and navigation—tend to be difficult to manage and prone to noncompliance. When forming treaties to address these specific issues, states will be more likely to include institutional provisions. The authors test the link between these river use issues and institutional design using a data set of 315 river treaties signed since 1950. The results show that highly contentious issues—and in particular water quantity and navigation—have a greater effect on the institutional design of river treaties than contextual and power politics factors.]

Annotation

The dimesnions and context of international cooperation for water quality and navigation issues are underscored. Berne Convention for Rhine discussed with reference to the strategic problems faced by Riparian Nations - especially how water quaity related cooperation requires navigating multiple issues pertaining to compliance due to economic and technical incapacity, and regulation of the actions of a multitude of substate actors that are responsible for industrial pollution, municipal waste, and agricultural runoff.

Presents conceptual understanding of the instituionalization of river treaties that are discused with reference to economic development, trade interdependencies, alliances/foreign policy similarity (representing similar shared interest for collection action) etc. Useful to develop a framework of analysis for the factors responsible for international cooperation on Rhine Restoration.

Yr: 2011 Uncertainty management strategies: Lessons from the regional implementation of the Water Framework Directive in the Netherlands:

Raadgever, G. T., Dieperink, C., Driessen, P. P. J., Smit, A. A. H. and van Rijswick, H. F. M. W.:

Paper Synopsis

Environmental managers have to deal with many uncertainties in carrying out their jobs. Literature describes several strategies that can be employed to manage these uncertainties, but this is done in a fragmented way. Therefore, this article aims to develop a comprehensive, coherent and empirically sound classification of uncertainty management strategies. The strategies mentioned in literature can be classified into four categories: ignoring uncertainty; knowledge generation; interaction and coping. A case study of the implementation of the Water Framework Directive (WFD) by Dutch water boards was conducted to test whether the identified strategies are employed in practice. The WFD presents the water boards with uncertainties resulting from the requirements to improve water quality and ecology on one hand, while leaving room to adapt those requirements to regional interests, practices and institutions on the other. The case study confirms the empirical soundness of the classification by revealing that many of the uncertainty management strategies in literature are applied in practice as well. However, further research to test the empirical soundness of the classification in other fields of environmental management is required.

Tag

Uncertainty' Uncertainty management, Ambiguity, Water Framework Directive, Regional implementation:

Annotation

The provided document titled "Uncertainty management strategies: Lessons from the regional implementation of the Water Framework Directive in the Netherlands" by G.T. Raadgever et al. of Utrecht University focuses on the challenges faced by environmental managers, specifically in the context of implementing the Water Framework Directive (WFD) in the Netherlands. The authors address the inherent uncertainties in environmental management and aim to develop a comprehensive classification of uncertainty management strategies.

The document begins by defining uncertainty as the lack of a unique and complete understanding of the system to be managed. The traditional view of uncertainty as a lack of scientific knowledge is challenged, and the authors introduce a broader concept that includes epistemic uncertainty (lack of knowledge), ontological uncertainty (unpredictability),

and ambiguity (existence of multiple framings). The authors classify uncertainty management strategies into four categories: ignoring uncertainty, knowledge generation, interaction, and coping. The classification is based on a literature review and is intended to provide a coherent framework for understanding how uncertainties are addressed in practice.

A case study on the implementation of the WFD by Dutch water boards is conducted to test the identified strategies empirically. The WFD presents challenges related to improving water quality and ecology while allowing flexibility for regional adaptation. The case study confirms the practical application of the identified uncertainty management strategies. These strategies include ignoring uncertainties by waiting for decisions from other actors, knowledge generation through monitoring and expert judgment, interaction by communicating uncertainties to other actors, and coping strategies to make decisions under incomplete system understanding.

The document emphasizes that uncertainties in environmental management are not limited to the natural and technical systems but also strongly involve the social system. The authors highlight the importance of careful management of uncertainties related to the social system and discuss the practical relevance of the uncertainty classification. In conclusion, the authors suggest further research directions, including testing the classifications in other environmental management fields and improving the mutual adjustment of uncertainty management strategies.

Yr: 2011 River Basin Management Planning with Participation in Europe: From Contested Hydro-politics to Governance-Beyond-the-State:

Parés, Marc:

Paper Synopsis

In recent years, new forms of governance have emerged in Europe engaging actors beyond the state in the act of governing. Water policy in general and basin management in particular, through the EU Water Framework Directive, is clearly one of the policies affected by these new forms of steering. Through two case studies carried out in Spain, this article analyses how in a few years hydro-politics in Europe has moved from a stage of social contestation to a new scenario of consensual governance. Wondering about the democratic qualities of these mechanisms and questioning the role of civil society on them, the research shows important differences in objectives and forms between social movements and the state around these new forms of governance. Although social movements are replacing strategies of contestation by strategies of collaboration with the state, the reproduction of geometries of power and the impossibility of tackling a political debate about the given framework of values established in a neo-liberal and market-driven context make the participation of civil society on governance mechanisms really difficult in terms of freedom and equality. We conclude that governance may be useful to avoid social conflict in a deliberative way, but is failing thinking citizens from a perspective of commonality.

Tag

WFD, France, Transposition, Governance, River basin.

Annotation

Marc Parés - School of Environment and Development, University of Manchester, Manchester, UK.

This paper discusses four new contributions to the river basin management planning. Firstly, it argues that the evolution of networked governance in Europe has significantly transformed the dynamic between the state and civil society in hydro-politics. Engaging in these novel mechanisms, environmentalist social movements are shifting from contestation strategies to collaboration with the state, while the state delegates power to both the private sector (market) and civil society. Secondly, it asserts that these governance shifts may effectively empower certain social actors, allowing citizens and social movements to genuinely participate in the policymaking process. However, inherent power imbalances persist as each actor leverages unequal resources to influence policy orientation.

Thirdly, within the governance structures, a shared set of values is presumed, and while significant policy choices are subject to debate, the overall system remains unquestioned. In the realm of European hydro-politics, the Water Framework Directive (WFD) establishes this foundational framework. Lastly, this paper concludes that governance arrangements extending beyond the state can serve to prevent and resolve social conflicts through deliberative negotiations among specific interests. However, these arrangements fall short of fostering a perspective of commonality among citizens.

It also discusses the River Ter Case Study in the context of WFD implementation and governance.

Yr: 2011 The EU Water Framework Directive: A multi-dimensional analysis of implementation and domestic impact:

Liefferink, Duncan, Wiering, Mark and Uitenboogaart, Yukina:

Paper Synopsis

This paper tries to answer two questions related to the implementation of one of Europe's most influential EU-directives, the Water Framework Directive. First, it describes how three Member States, Denmark, the Netherlands and France, actually struggle and cope with this ambitious Directive. Second, it discusses existing theories of EU implementation and questions whether they are able to deal with the overwhelming diversity in national responses to this open-ended and flexible 'new generation' EU-directive. Denmark, the Netherlands and France were selected because they represent a fair degree of diversity. Denmark started out the implementation process with high ambitions and a relatively formal approach, whereas the Netherlands from the outset chose to follow a more pragmatic course. France is an interesting case because this country already had a mature system of river basin management in place before the WFD came into force. Compared to existing implementation theories, the paper

offers a more differentiated way of describing and structuring the implementation processes that contemporary EU-directives are producing in a world coloured by multi-actor, multi-level and multi-sector governance.

Tag

Institutions, Law/Treaties/Agreements, Governance, Political Aspect, Implementation Theory, WFD, Water Management, Environmental Governance, River Basin Management, Multi-Level Governance, Multi-Actor Governance, Multi-Sector Governance, Domestic Politics:

Annotation

This paper explores two questions related to the implementation of the EU Water Framework Directive (WFD) by empirically analysing the implementation process of three European countries – Denmark, the Netherlands, and France – and how they manage the demands of such an ambitious directive. It also discusses the existing theoretical frameworks for EU implementation and assesses their suitability in explaining the diversity in the national responses to this "open-ended and flexible 'new generation' EU-directive." The paper offers a more differentiated method of describing the implementation processes by looking at it through the lens of multi-actor, multi-level, and multi-sector governance.

Liefferink et al begin by giving an overview of the WFD and its main characteristics and requirements. They use empirical evidence to analyse the ongoing process of implementation in the selected case studies of Denmark, the Netherlands, and France. The authors also engage in a critical discussion of the key existing theoretical approaches to EU implementation. As per their analysis, the recent literature on the implementation of EU directives can be categorised into three strands: the 'fit/misfit' hypothesis, worlds of compliance, and domestic politics. They assess the implementation of the EU WFD in the three countries through these three strands and conclude that they are insufficient to fully explain the implementation process. Building on the 'fit/misfit' approach and paying more attention to the domestic politics, they propose a simple framework for analysis by focusing on the six pathways for implementing the WFD. The authors also mention the reason for choosing the three countries for their case studies as all three follow quite different processes of implementation. Denmark exhibits a fairly strict compliance with the transposition of EU laws and started out with an ambitious goal. The Netherlands, on the other hand, took a very pragmatic approach from the beginning with enough leeway for any unexpected situations which might occur. France falls somewhere in the middle of this spectrum as it was the state which already had an existing system of river basin management in place, and it amended its already existing laws to incorporate the requirements of the WFD.

Out of the six pathways the authors use for analysing the implementation of the WFD, the first three – centralisation/decentralisation, participation, integration – correspond with the notions of multi-level, multi-actor, and multi-sector governance, respectively, which are considered to be the

characteristic of 'new generation' directives such as the WFD. The authors spend more time on these three pathways in their case studies. In each case study, they look at river basin management and multi-level governance, stakeholders, public participation and multi-actor governance, and integration and multi-sector governance. As mentioned earlier, each country follows their own process of implementation which is evident in the empirical evidence gathered by the authors under each pathway. The remainder of the three pathways – the designation of water bodies, the process of goal setting and formalisation of standards, and the use of exemptions – all make up the substantive ambitions for realising the objectives of the WFD.

In conclusion, the authors attempt to summarise their empirical findings in a table according to different dimensions of domestic impact which is quite useful as a quick reference to understand the implementation of the WFD in Denmark, the Netherlands, and France. It is clear from the findings that each of the countries in their sample implement the WFD in fundamentally different ways. Denmark started out ambitiously with an open approach but eventually, it became a highly centralised, state-led process. The Dutch case, in contrast, started out as a mostly bottom-up approach from the beginning. France falls somewhere in the middle of these two extremes. The diverse connections and overlaps between the substantive and the varied institutional aspects of the implementation process outlined in the paper reinforce the authors' assumption that the 'fit/misfit' hypothesis and its derivatives are insufficient to explain the process and one needs a more multi-dimensional approach for analysing the implementation and domestic impact of EU policies and directives.

Yr: 2011 The Water Framework Directive: Redesigning the Map of Europe?:

Liefferink, Duncan, Wiering, Marcus and Leroy, Pieter:

Annotation

The paper authored by Duncan Liefferink, Marcus Antonius Wiering, Pieter Leroy of Radboud University, explores the European Union's Water Framework Directive (WFD) and its profound impact on reshaping the conceptualization and management of water resources across Europe. The narrative contends that the EU, through the WFD, accommodates these varied viewpoints by promoting a vision of Europe as interconnected hydroecological networks rather than bounded territories.

The chapter traces the historical evolution of water policies within the EU, emphasizing the WFD's emergence in 2000 as a pivotal moment that elevated ecological concerns to the forefront of political discourse. The directive encourages integrated water-basin management, challenging traditional administrative structures and prompting a revaluation of competencies among administrative levels. It highlights the tension between specialized river basin agencies and generic administrative bodies in balancing the ecological logic of river basin management with the need for cross-sectoral coordination.

Examining the practical implementation of the WFD in five EU Member States, the paper notes that while the directive represents a significant shift, its impact manifests as incremental steps rather than revolutionary change. The analysis focuses on governance levels, policy sector integration, and stakeholder involvement, emphasizing the intricate interplay between these dimensions. The struggle to reconcile decentralization with centralization, and the challenges of involving the public and organized interests in policy-making, are recurrent themes.

The paper concludes by underscoring the clash between a hydroecological perspective and a traditional administrative view of organizing territories, characterizing the difficulties in WFD implementation. The text contends that the directive, despite its ambitious goal of promoting ecological water management, becomes entangled in political, economic, and social conflicts related to administrative boundaries. It suggests that the WFD is a noteworthy endeavor in European integration, striving to align diverse interests and perspectives for the sustainable management of water resources across the continent.

Yr: 2011 International water negotiations under asymmetry, Lessons from the Rhine chlorides dispute settlement (1931–2004):

Dieperink, Carel:

Paper Synopsis

Negotiations concerning the quality of international rivers are not easy, as incongruence in preferences between upstream and downstream countries generally exists. The Rhine Chlorides dispute is a clear example of this. The chloride issue has been on the international water agenda of the Netherlands and the upstream Rhine riparian states for more than 70 years. The aim of this paper is to give a historical overview of the settlement of the Rhine chlorides dispute in order to draw some lessons for negotiators who have to work under comparable conditions of asymmetrical international water pollution. The case not only shows the complexities in reaching acceptable solutions for asymmetrical transboundary pollution, but also the importance of sound argumentation, institutions, side payments, issue framing, issue linking and arbitration.

Tag

Rhine Chloride, Bern Convention, ICPR, Dispute Settlement.:

Annotation

Carel Dieperink - Copernicus Institute for Sustainable Development and Innovation, Utrecht University, Utrecht, The Netherlands.

This article aims to provide a historical overview of the resolution of the Rhine chlorides dispute, intending to derive lessons for negotiators grappling with similar conditions of asymmetrical international water pollution. Before drawing these lessons, the article introduces and scrutinizes the issue, delving into the analysis and discussion of the negotiation processes. Over time, five prolonged rounds of negotiations can be identified.

The initial round of negotiations

commenced in the early 1930s, culminating in the formalization of interactions among riparian states through the 1963 Convention of Bern. This convention led to the creation of the International Commission for the Protection of the Rhine against Pollution as an official structure for such interactions. In 1972, the second round of negotiations concluded with ministers from the Rhine states taking charge, resulting in a proposed settlement. However, the 1976 Rhine Chlorides Convention formalizing the compromise faced a hurdle as it could not be ratified due to French opposition. This intergovernmental impasse prompted Dutch private parties to initiate legal proceedings, reframing the issue for state-level negotiators.

New bargaining options emerged, leading to reopened negotiations concluded in 1991 with a modification of the 1976 Chlorides Convention. However, an arbitral decision became necessary before the issue could be definitively resolved. Since 2004, the matter has been removed from the international political agenda. about the contamination of the Rhine due to chloride discharges upstream which exemplifies a typical upstream–downstream conflict. The Rhine chlorides case is exceptional in that it has been a subject on the international water agenda for more than 70 years, involving the Netherlands and the upstream Rhine riparian states. This case highlights the challenges of arriving at satisfactory solutions for cross-border pollution. Despite extensive negotiation efforts involving the Netherlands, Germany, France, and Switzerland, reaching effective compromises proved to be challenging. Consequently, the chloride load and concentrations at the Dutch border continued to increase.

Yr: 2011 The Effectiveness of Negotiations over International River Claims:

Brochmann, Marit and Hensel, Paul R.:

Paper Synopsis

[Rising demand for water in water-scarce areas has led to frequent predictions of looming "water wars," although evidence suggests that water is also an important source of cooperation. This paper follows up on recent research suggesting that river disagreements are more likely to lead to both militarized conflict and peaceful negotiations when water demands and water scarcity are greatest, but that river treaties have generally prevented militarization while increasing negotiations. Here, we examine the effectiveness of these negotiations, in order to determine whether factors that promote negotiation onset have different effects on negotiation outcomes. Empirical analysis suggests that negotiations are most likely to succeed when they concern rivers with high value for the negotiating states (with many uses offering the possibility of negotiating tradeoffs), when they concern a current rather than future problem, and when the adversaries share closer overall relations, but less likely when water scarcity is more acute and when they involve a cross-border river with a stronger upstream state.]

Annotation

The cases study on Rhine is given as an example to support the point on how upstream riparian expects the downstream riparian for compensatory actions in order to have a succesful negotioation. The article in the context of the effort of the Rhine

riparians to reduce the pollution discuss how "The Netherlands, although the country furthest downstream and also the country that suffered the worst from the salt pollution on the river (mainly caused by Germany and France), ended up having to pay the largest percentage of the costs of reducing the pollution". These argimenyts and analysis are useful to support the argument on how the effort of Netherlands and EU's (international regime) has important implication on Rhine Programme. It further explains how Inter Goevernmental Organizations (IGOs) membership is positively linked with treaty formation or cooperation over internationl waterways.

Yr: 2010 The European Water Framework Directive at the age of 10: A critical review of the achievements with recommendations for the future:

Daniel, Hering, Ángel, Borja, Jacob, Carstensen, Laurence, Carvalho, Michael, Elliott, Christian, K. Feld, Anna-Stiina, Heiskanen, Richard, K. Johnson, Richard, K. Johnson, Moe, J., Pont, D., Didier, Pont, Anne Lyche, Solheim and Wouter van de, Bund:

Paper Synopsis

The European Water Framework Directive (WFD), which was adopted in 2000, changed water management in all member states of the European Union fundamentally, putting aquatic ecology at the base of management decisions. Here we review the successes and problems encountered with implementation of the WFD over the past 10years and provide recommendations to further improve the implementation process. We particularly address three fields: (i) the development of assessment methods (including reference conditions, typologies and intercalibration); (ii) the implementation of assessment systems in monitoring programmes; and (iii) the consequences for river basin management plans (such as the design, monitoring and success of restoration measures). The development of assessment methods has been a transparent process and has resulted in improved and more standardised tools for assessing water bodies across Europe. The process has been more time consuming, and methods are more complex, than originally expected. Future challenges still remain, including the estimation of uncertainty of assessment results and a revision of rules in combining the results obtained with different Biological Quality Elements. A huge amount of monitoring data is now being generated for WFD purposes. Monitoring data are not centrally stored and thus poorly accessible for purposes beyond the WFD. Future challenges include enhanced data accessibility and the establishment of a Europe-wide central monitoring network of reference sites. The WFD river basin management plans base management decisions on the response of aquatic organisms to environmental stress. In contrast to the effects of degradation, the biotic response to restoration is less well-known and poorly predictable. The timescale of the WFD (obtaining good ecological status in all surface waters by 2027) is over-ambitious. Future challenges include long-term monitoring of restoration measures to understand the requirements for ecosystems to recover and prioritisation of measures according to re-colonisation potential.

Tag

WISER EU- 25 European research institutions representing 16 countries have addressed theassessment and management of rivers, lakes, transitional and coastal waters in Europe.

European Commission Joint Research Centre:

Annotation

The authors of this paper are part of the WISER Project- where 25 European research institutions representing 16 countries have addressed the assessment and management of rivers, lakes, and transitional and coastal waters in Europe. In this paper, the author reviews the successes and problems encountered in the implementation process of the Water Framework Directive. The paper in particular examines the prospects and challenges of the implementation of WFD from the point of view of development of assessment methods for 'good ecological status' mandated under WFD, the monitoring programme, and the River Basin Management Plans. The study underscores the critical development under the ambitious WFD in putting aquatic ecology at the heart of water management. It underscores the development of improved and more standardized tools for assessing water bodies across Europe under WFD and the generation of huge amounts of monitoring data. Concomitantly, the paper underscores the achievement of WFD in generating for the first time 'comparable pan-European data sets to assess the ecological status of surface water'. Yet, with many fundamental shifts brought about by the WFD in European water management, there are multiple and long list of challenges emanating from the complex process of monitoring, data generation, its usability, and planning for restoration measures through development of River Basin Management Plan(RBMPs) that has been illustrated meticulously in the paper.

Yr: 2009 The Rhine River Basin:

Urs, Uehlinger, Karl, M. Wantzen, Karl, M. Wantzen, Karl, M. Wantzen, Rob, S. E. W. Leuven and Hartmut, Arndt:

Paper Synopsis

Nine countries are in part or entirely situated within the Rhine catchment—namely, Austria, Belgium, France, Germany, Italy, Liechtenstein, Luxemburg, The Netherlands, and Switzerland. The Rhine ranks ninth among the Eurasian rivers. It is the primary artery of one of the most important economic regions of Europe. The human population of the basin equals 58 million, many of them crowded in large urban areas extending along the river between Rotterdam and Basel. The Rhine provides services for transportation, power generation, industrial production, urban sanitation, drinking water for 25 million people, agriculture, and tourism and is a classic example of a multipurpose waterway. It has greatly influenced the history, culture, and economy of Europe over the last 2000 years. On the other hand, its ecological integrity and biodiversity have been severely affected by human activities, particularly in the last 200 years. This chapter provides a general overview of the Rhine basin and subsequently portrays different aspects of the six morphologically distinct river sections that developed during

the genesis of the river. These are: (1) The Alpine Rhine (Alpenrhein) and its tributaries; (2) the High Rhine (Hochrhein); (3) the Upper Rhine (Oberrhein); (4) the Middle Rhine (Mittelrhein); (5) the Lower Rhine (Niederrhein); and (6) the Delta Rhine.

Annotation

This paper, authored by Urs Uehlinger, Karl M. Wantzen, Rob S.E.W. Leuven, and Hartmut Arndt, provides a comprehensive overview of the Rhine River Basin, encompassing contributions from experts in aquatic ecology and environmental science, which explores the intricate geographical, historical, and ecological dimensions of the Rhine.

The Rhine River Basin spans nine countries and plays a pivotal role in the European economy, influencing trade, power generation, industry, urban development, and agriculture. The authors highlight its significance as a 'multipurpose' waterway, emphasizing its contributions to transportation, power generation, sanitation, and the water supply for a substantial population.

The chapter delves into the ecological challenges faced by the Rhine, tracing the impacts of human activities over the past two centuries on its biodiversity and overall ecological integrity. It categorizes the river into six morphologically distinct sections, detailing their characteristics and historical development. The sections range from the Alpine Rhine and High Rhine to the Delta Rhine, each presenting unique features and challenges. The interdisciplinary approach of the chapter, drawing on insights from aquatics, environmental science, and zoology, provides a holistic understanding of the Rhine River Basin.

Yr: 2009 International co-operation on Rhine water quality 1945–2008: An example to follow?:

Mostert, Erik:

Paper Synopsis

The management of the Rhine is often seen as an exemplary case of international river basin management. In the Rhine basin, countries that went to war with each other twice in the last century have managed to reach agreements on many issues and water quality has improved considerably. The improvement in water quality is often attributed to the activities of the International Commission for the Protection of the Rhine and in particular to its Rhine Action Plan. In order to test this assertion, this paper describes and analyzes the development of international co-operation on the water quality of the Rhine since 1945. It concludes that water quality improvement cannot be attributed to any single factor. Instead, a whole array of interrelated factors are at play, including the European Union, other international fora such as the North Sea Ministerial Conferences, domestic legislation, the activities of environmental NGOs and waterworks, growing environmental awareness, and the changing structure of the industry in the basin. Because of the importance of contextual factors, the Rhine experiences cannot simply be applied to basins with a different context. In many cases, international river basin management may be promoted most effectively by

promoting co-operation at the river basin level. In many other cases, however, it may be more effective to identify and then work on the contextual factors that (1) have the biggest leverage effect in the specific case and (2) can be influenced most effectively.

Tag

Institutions, Laws/Treaties/Agreements, Governance, Political Aspect, Environmental/Ecological Aspect, ICPR, Rhine Action Plan, River Basin Management, Water Quality, International Cooperation, Transboundary Governance, EU:

Annotation

In this important paper, Mostert describes and analyses the factors that lead to the development of international cooperation on the water quality of the Rhine since 1945. He chronologically traces the key moments and institutions pivotal in the success of this international cooperation. The author attempts to answer two critical questions through his analysis: how much of the improvement of the water quality of the Rhine can be attributed to the Rhine cooperation and what lessons can be drawn from the Rhine experience for other basins?

In his analysis, Mostert divides the development of international cooperation on the Rhine in different phases – the evolution of international cooperation from only shipping and salmon fishing to other areas

and the formation of the International Commission for the Protection of the Rhine (ICPR), which was preceded by the Central Commission for the Navigation of the Rhine (CCNR) and the Salmon Commission up until the Berne Convention in 1963 which granted ICPR a status under international law After this initial phase of cooperation, Mostert looks at the hurdles in getting signatories to sign the Chlorides and Chemicals cooperation, highlighting how just forming institutions is not enough to establish enduring cooperation, which requires continued efforts and commitment from the Member States. He also delves into the parallel process of the unification of Europe and how that aided the international cooperation on water quality protection and the subsequent implementation problems and legal procedures and negotiations. He underscores the importance of the Sandoz disaster which proved to be the push needed for Member States to get all hands on deck for tackling pollution in the Rhine. The adoption and implementation of the Water Framework Directive (WFD) which aims to establish “a framework for water management in Europe” can be seen as a breakthrough in the development of international cooperation on the Rhine as European directives are also legally binding.

Despite the perceived success of the ICPR, Mostert does not believe it to be the only explanation for the improvement of the water quality of the Rhine. Various other factors, not independent from each other, such as the formation of the European Union and its binding directives, the growing environmental awareness and the work of environmental NGOs in the basin states, the participation of waterworks in the Rhine basin and the role of industry in the region, all contributed to the water

quality improvement of the Rhine basin. The Rhine experience reinforces the importance of economic, social, and political context of river basin management and due to these contextual factors, the Rhine example cannot simply be emulated for other basins. It can definitely serve as an example to learn from and adapt as per the differing contexts in different basins.

Yr: 2009 Aspirations and Realities Under the Water Framework Directive: Proceduralisation, Participation and Practicalities:

Howarth, William L.:

Tag

Water Framework Directive, Proceduralisation, Participation.:

Annotation

William Howarth - University of Kent.

This paper is an analysis of the ambitious nature of the Water Framework Directive, adopted in 2000, and acknowledges the challenging timeline set for its implementation, with an initial deadline of 2015 to achieve key environmental objectives outlined in the Directive. Presently, the implementation process is approximately halfway through the established timeline. Legislative transposition, identification of river basin districts and competent authorities, compilation of characterization reports, initiation of monitoring programs, and ongoing consultations on significant issues and draft river basin management plans are underway. However, the critical stages of finalizing River Basin Management Plans and establishing programs of measures are yet to be completed. Given this "halfway" point, it is beneficial to assess the progress made in practical implementation and to contemplate the insights gained regarding the challenges associated with implementing the Directive and its overarching approach.

Regarding **proceduralization**, the Water Framework Directive contains elements of substantive content, although these aspects are significantly overshadowed by the extensive areas where national discretion in implementation prevails. While achieving the objective of attaining good status in water bodies appeared to be a central purpose of the Directive, this goal could potentially be overshadowed by the inclination to 'avoid' applying good status to water whenever possible. The excessive exercise of national discretion in this manner might theoretically face scrutiny by the European Commission and, potentially, legal proceedings before the Court of Justice.

Yr: 2009 River-basin planning and management: the social life of a concept:

Francois, Molle:

Paper Synopsis

The concept of a river basin as a management or planning unit has gone through several stages and is in a state of flux. From its western “discovery” in the 18th century to its advent as the overriding concept behind European water policy, the river basin has been conjured up and mobilized in evolving contexts with varying

intentions. Associated with utopian ideas of the late 19th century, it supported ideas of full control of the hydrologic regime and multipurpose dam construction in the 1930–1960 period, then partly faded and was revived to address water-quality problems, before reemerging in the 1990s as the cornerstone of Integrated Water Resources Management (IWRM), enriched and blended with watershed- and ecosystem-management approaches. This article recounts the evolution of the concept of a river basin and how it has been associated with various strands of thinking and sometimes co-opted or mobilized by particular social groups or organizations to strengthen the legitimacy of their agendas. Beyond its relevance as a geographical unit for water resources development and management purposes, the river basin is also a political and ideological construct, with its discursive representations and justifications, closely linked with shifting scalar configurations, both ecological and in terms of regulatory regime or governance. How interconnected and nested waterscapes can be managed by discontinuous nested political/administrative and social levels remains a fundamental question fuelling an endless search for elusive governance systems that would unite nature and society.

Annotation

François Molle's paper, delves into the historical evolution of the river basin as a conceptual unit for water management, which critically examines the trajectory of the river basin concept, shedding light on its changing roles and associations with social, political, and environmental contexts.

The paper begins by tracing the origins of the river basin concept, emphasizing its emergence in the 18th century and subsequent evolution into a dominant idea in European water policy. Molle contends that the river basin, initially perceived as a geographical unit for water resource development, has transcended its physical boundaries to become a political and ideological construct. The article explores how the concept has been utilized, co-opted, and mobilized by different social groups and organizations to legitimize their agendas, revealing its multifaceted nature.

The historical narrative unfolds through various stages, highlighting the utopian ideas associated with the late 19th century, where the river basin symbolized full control of hydrological regimes and large-scale dam construction. This period laid the groundwork for subsequent phases, including the era of massive infrastructural development between the 1920s and 1970s, where the **river basin was seen as a logical unit for optimizing multiple uses of surface water and planning regional development.**

The author also discusses the exportation of the hydraulic paradigm, drawing attention to the influence of the Tennessee Valley Authority (TVA) model in the global context during the Cold War era. This exportation, driven by geopolitical interests and engineering companies, contributed to the proliferation of river basin organizations worldwide.

The paper examines the decline of the river basin concept in the late 20th century, marked by pollution concerns and water quality issues. However, it experiences a

revival in the 1990s with the emergence of Integrated Water Resources Management (IWRM). **This revival incorporates watershed and ecosystem management approaches, showcasing the adaptability and resilience of the river basin concept in response to contemporary challenges.**

The article concludes by addressing the complexity of integrated water management and the continued relevance of the river basin concept. Molle argues that while the river basin remains a legitimate unit for technical problem-solving in water resources development, it is also a political and ideological construct. The concept, shaped by shifting socio-environmental dynamics, reflects the constant contestation and reworking of governance patterns.

Yr: 2009 European Community Water Policy:

de Castro, Paulo Canelas:

Paper Synopsis

This chapter traces the development of the European Community water policy. Against a background of a sense that action was urgent, a formal environmental protection policy was 'constitutionalized' for the first time by the Single European Act (1986). Community water policy entered a new stage with the adoption of the Water Framework Directive (2000) and the subsequent establishment of the Common Implementation Strategy. These changes amount to a true paradigm-shift whereby Community water policy became functionally oriented towards sustainable development and meeting the expectations of European citizens.

Tag

Common Implementation Strategy, European Community, EU, public, supranational, WFD:

Annotation

Paulo Canelas de Castro is a Professor of Law and coordinator of the master's Program in European Union Law, International Law, and Comparative Law, at the University of Macau.

This Article talks about the development of the European Community water policy change as it entered a new stage with the adoption of the WFD (2000) and the subsequent establishment of the Common Implementation Strategy. These changes amount to a true paradigm shift whereby Community water policy became functionally oriented towards sustainable development and meeting the expectations of European citizens.

Constitutional Changes: The Demand for a more specific water policy led to the amendment of the European Community Treaty to incorporate the case law of the European Court of Justice that limited the apparent unanimity requirements for water policy to quantitative water management only.

Legislative Changes: The evolving character of European water policy is even more pronounced at what may be termed the legislative level.

Administrative Changes: Community water law is thus dynamic, continuously witnessing powerful developments. Such

policy and legal developments have lately been spreading to other areas and, most noticeably, also translated into what may be termed the administrative implementation dimension of Community Water Law.

Judicial Changes: Community water policy also materialized in case law. In contrast with many other areas of Community intervention, often marked by the European Court of Justice's powerful activism, in the water law realm jurisprudence seems to have had a more modest impact in terms of innovative normative ideas, concepts, or solutions.

The gist of this paper is that the implementation process of the Water Framework Directive, particularly in the context of the Common Implementation Strategy, is a complex and innovative undertaking. It involves coordination among multiple actors, including Member States and non-member States, and emphasizes the need for integration, learning, and collaboration. The paper also highlights the challenges, gaps, and uncertainties in implementing the Directive, as well as the importance of obtaining knowledge and information to effectively achieve the goals set out in the policy. Overall, it emphasizes the iterative learning process and the need to work with and learn from various stakeholders to successfully implement the WFD.

Yr: 2009 Implementation and integration of EU environmental directives. Experiences from The Netherlands:

Beunen, Raoul, van der Knaap, Wim G. M. and Biesbroek, G. Robbert:

Paper Synopsis

European integration has consequences for environmental planning in the European Union. Recent evaluations of the European Commission show that implementation of environmental directives proves to be a challenging task for the responsible authorities. This paper discusses the relation between the implementation of the Water Framework Directive and the Birds and Habitats Directives in The Netherlands. Studies from this member state show that legal and procedural aspects of planning and decision making gain the most attention and that environmental goals are fading into the background. We study the integration of the two directives from a policy and practice perspective and discuss the difficulties that arise in the implementation process.

Annotation

This academic paper, authored by Raoul Beunen, Wim G. M. van der Knaap, and G. Robbert Biesbroek from Wageningen University in The Netherlands, primarily examines the challenges associated with the implementation of the Water Framework Directive (WFD) and the Birds and Habitats Directives (BHDs) and provides insights into the broader discussions on conflicting European environmental policy legislation in Western Europe.

The paper begins by highlighting the growing importance of the EU in sustainable regional development and the adoption of numerous directives, regulations, and legislation related to

environmental policy. It emphasizes the necessity of European legislation to counterbalance economic instruments and addresses the challenges faced in implementing and enforcing EU environmental policies.

The central focus of the study is on the Dutch experiences with the implementation of the WFD and BHDs, revealing that legal and procedural aspects often take precedence over environmental goals in planning and decision-making processes. The paper argues that the struggle over ideas persists during the implementation phase, where different actors compete over the meaning and consequences of policies.

The Birds and Habitats Directives, designed to protect natural habitats and flora and fauna in EU member states, pose specific challenges in the Dutch context. The establishment of Special Protection Areas and Special Areas of Conservation, forming the Natura 2000 network, requires coordinated efforts from various governmental organizations, researchers, environmental organizations, and stakeholders. The paper emphasizes the difficulties arising from the uncertainty surrounding the new directives and their impacts on social and economic activities. The European Water Framework Directive, introduced due to criticism of the technocratic nature of EU water policy, aims for a good ecological status of water bodies by 2015. The study recognizes the shift from government to governance and the challenges posed by the integrated perspective of emission control and groundwater protection.

The authors discuss the multi-level implementation of these directives in the Netherlands, highlighting the difficulties faced by different actors at the national and regional levels. The paper emphasizes the importance of time in adapting to new directives and notes that the strong focus on formal compliance hampers the integration of different European policies.

Despite the challenges, the study suggests that environmental policy integration (EPI) can be achieved at local and regional levels. It calls for an understanding of the adaptation process and recommends monitoring that focuses not only on formal compliance but also on environmental objectives. The paper concludes by acknowledging the complexity of integration and implementation, suggesting that a focus on social involvement and learning is crucial to understanding complex systems before policy actions are taken. It underscores the need for flexibility, adaptation time, and a shift from a purely compliance-focused approach to one that considers environmental objectives and fosters stakeholder commitment.

Yr: 2008 Learning from Difference: The New Architecture of Experimentalist Governance in the EU:

Sabel, Charles F. and Zeitlin, Jonathan:

Paper Synopsis

Abstract: This article argues that current widespread characterisations of EU governance as multi-level and networked overlook the emergent architecture of the EU's public rule making. In this architecture, framework goals (such as full employment, social inclusion, ‘good water

status', a unified energy grid) and measures for gauging their achievement are established by joint action of the Member States and EU institutions. Lower-level units (such as national ministries or regulatory authorities and the actors with whom they collaborate) are given the freedom to advance these ends as they see fit. But in return for this autonomy, they must report regularly on their performance and participate in a peer review in which their results are compared with those pursuing other means to the same general ends. Finally, the framework goals, performance measures, and decision-making procedures themselves are periodically revised by the actors, including new participants whose views come to be seen as indispensable to full and fair deliberation. Although this architecture cannot be read off from either Treaty provisions or textbook accounts of the formal competences of EU institutions, the article traces its emergence and diffusion across a wide range of policy domains, including telecommunications, energy, drug authorisation, occupational health and safety, employment promotion, social inclusion, pensions, health care, environmental protection, food safety, maritime safety, financial services, competition policy, state aid, anti-discrimination policy and fundamental rights.

Annotation

The authors—a Professor of Law at Columbia University and a Professor of Sociology, Public Affairs, Political Science, and History at the University of Wisconsin-Madison—unpack the architecture of the EU's emergent public rulemaking, in particular the framework goals that are meant to achieve goals such as employment, social inclusion, and 'good water status'. The article further argues that this rule-making exercise goes beyond the formal scope of the European treaties and competencies of the EU institutions but is widely adopted across sectors.

Under this particular arrangement, the measure of progress and achievements on the framework goals are established jointly by the EU member states and the EU-level institutions. The national governments of the respective countries are given the flexibility to decide on the instruments and processes for implementation, subject to regular reporting on their performance towards the framework goals. Concomitantly, the goals, performance matrix, and decision-making procedure are periodically revised by the actors across scales—including the inclusion of new stakeholders required for deliberation—what the author terms 'effective innovation."

To support the argument, the author unpacks the EU Water Framework Directive and its Common Implementation Strategy (CIS). The implementation of the EU WFD to a significant extent depends on CIS, which was not formally envisaged in the WFD itself. However, the 'new institution' acts as an informal avenue for cooperation, coordination, and information strategy for the member states to give effect to the EU WFD.

The CIS was conceived by the EU Water Directors (national representatives responsible for water policy, usually division heads within environmental ministries) and agreed upon by the

European Commission. It helps the member nations to harmonize their national water and environmental legislation and policies to align with the broader goal of the EU WFD; as well as mitigating regulatory conflicts that may arise from the various implementation practices adopted by the member states. The outputs from CIS are non-binding technical documents that support each national government in achieving the mandate of the EU WFD, 'good water status'. Concomitantly, the learning experience from the functioning of the CIS activities supports fine-tuning and revision of the WFD from time to time.

The article traces the emergence of this distinct form of governance architecture and its subsequent diffusion across a wide range of policy domains and sectors, as diverse as telecommunications, health, and environmental protection.

Yr: 2008 Assessing Management Regimes in Transboundary River Basins: Do They Support Adaptive Management?:

Raadgever, G. T., Mostert, Erik, Kranz, Nicole, Interwies, Eduard and Timmerman, J. G.:

Paper Synopsis

River basin management is faced with complex problems that are characterized by uncertainty and change. In transboundary river basins, historical, legal, and cultural differences add to the complexity. The literature on adaptive management gives several suggestions for handling this complexity. It recognizes the importance of management regimes as enabling or limiting adaptive management, but there is no comprehensive overview of regime features that support adaptive management. This paper presents such an overview, focused on transboundary river basin management. It inventories the features that have been claimed to be central to effective transboundary river basin management and refines them using adaptive management literature. It then collates these features into a framework describing actor networks, policy processes, information management, and legal and financial aspects. Subsequently, this framework is applied to the Orange and Rhine basins. The paper concludes that the framework provides a consistent and comprehensive perspective on transboundary river basin management regimes, and can be used for assessing their capacity to support adaptive management.

Annotation

The paper, by G.T. Raadgever et al., explores the challenges faced by river basin management, particularly in transboundary contexts characterized by complexity and uncertainty. The paper emphasizes the need for adaptive management strategies to address these challenges effectively. They present a comprehensive framework for assessing the adaptive capacity of transboundary river basin management regimes, focusing on actor networks, policy processes, information management, and legal and financial aspects.

The introduction highlights the historical shift from single-purpose hydraulic engineering to contemporary multi-purpose, basin-wide management involving diverse stakeholders. Transboundary river basins face additional complexities due to differences in legal frameworks, historical

backgrounds, and cultural influences. Adaptive management is proposed as a solution to address uncertainty and change, aiming to develop flexible strategies that can be adjusted based on continuous learning.

The paper identifies key features of transboundary management regimes, including actor networks, water law, water policy, information management, and financing systems. These elements, though relatively stable, interact to shape the laws and policies influencing management activities.

To fill the gap in literature regarding institutional features supporting adaptive management, the authors develop a framework by integrating insights from adaptive management literature. This framework includes criteria and indicators for assessing transboundary river basin management regimes, emphasizing the importance of stakeholder participation and experimentation.

The assessment framework is then applied to two transboundary river basins—the Orange and Rhine basins. The Orange basin, still in an emerging state of transboundary cooperation, scores average in terms of adaptive capacity. The authors note progress in public participation but highlight limitations in communication methods, particularly in rural areas. Financial dependence on international donors is identified as a challenge.

In contrast, the Rhine basin, characterized by long-lasting institutional stability and cooperation, scores higher in terms of adaptive capacity. The International Commission for the Protection of the Rhine (ICPR) facilitates cooperation among riparian countries, and the basin exhibits well-established procedures for participation and access to information. Financing is primarily sourced from public resources of riparian countries, contributing to a more integrated decision-making process.

The discussion underscores the potential and limitations of adaptive management, acknowledging its high costs and the need for contextual relevance. The authors emphasize the subjective nature of the assessment, calling for more objectively measurable indicators. They suggest the need for detailed case studies and theoretical work to better understand the dynamics of regime development over time.

In conclusion, the paper provides a valuable framework for assessing the adaptive capacity of transboundary river basin management regimes. The case studies of the Orange and Rhine basins offer insights into the practical application of the framework, highlighting the importance of institutional stability, stakeholder participation, and integrated decision-making processes in supporting adaptive management principles.

Yr: 2008 Transboundary river basin management in Europe - Legal instruments to comply with European water management obligations in case of transboundary water pollution and floods:

Keessen, Andrea, van Kempen, Jasper and Rijswick, H. F. M. W.:

Paper Synopsis

Although modern European water policy follows a river basin approach where Member States have to cooperate in order to achieve a 'good status' of their water bodies, the obligations arising from the European water directives are to be achieved by each Member State individually. This situation creates problems when water pollution and water quantity problems cross borders. It is still unclear whether Member States can be held responsible for not achieving objectives due to causes (partly) originating abroad. This article describes some of the legal instruments that water authorities have at their disposal to comply with the European water management obligations in case of transboundary water pollution and floods and thus shape transboundary river management. The article describes instruments to create, implement and enforce transboundary cooperation, and addresses the possibility of transboundary compensation if cooperation fails. Here, the focus is on a civil lawsuit before a domestic court.

Tag

Transboundary cooperation, River Management, WFD, Water pollution, Floods:

Annotation

Andrea Keessen is a University Lecturer and Researcher, Jasper van Kempen is a PhD Candidate, and Marleen van Rijswick is a Professor of European and Dutch Water Law, all three authors work at the Centre for Environmental Law and Policy/NILOS, Utrecht University (Netherlands)

The article introduces the Transboundary cooperation of different river basin management states which coordinate among themselves with the help of legal instruments for cordial relations. It gives an overview as to how transboundary cooperation is being created by WFD implementation and to what extent it is enforced. After that, it discusses the enforcing compliance of transboundary cooperation which leads to the next part regarding the Legal implications of failure to implement. It also provides some concluding remarks about the legal instruments and the possibility of seeking damages if these instruments fail.

WFD and the Floods Directive require EU Member States to establish river basin districts for each river basin, even if they cross national borders. When a river basin extends beyond the territories of EU member states, as seen with rivers like the Rhine and Danube, international cooperation within an international river basin district is encouraged. While third countries outside the EU cannot be compelled to follow the WFD and Floods Directive, they may voluntarily participate in such cooperation, often guided by existing watercourse treaties. The Helsinki Convention, which the EU has also ratified, aligns with these directives, ensuring harmonized water management objectives across borders. Different cooperation models can be chosen based on the size and characteristics of the river basin.

Effective cooperation among parties involved in transboundary water management is essential, fostering trust and experience sharing. This collaboration can occur regionally or around major rivers,

often facilitated by international treaties. However, at the regional level, incompatible governmental powers across borders can hinder cooperation efforts. WFD and the Floods Directive offer a coordination mechanism for addressing transboundary water pollution and flooding's impact. Member States forming a river basin district are obliged to harmonize their measures and exemptions under the WFD. Yet, this harmonization obligation does not cover all scenarios, leaving room for discrepancies in practices like harmonization, detection, and alarm systems across districts. Consequently, monitoring water quality at borders remains crucial for swift action in cases of transboundary pollution.

If cooperation falls short, European law instruments can be employed to enforce compliance or engage in administrative procedures in other countries. However, obstacles exist in this process. Nonetheless, a Member State can hold another accountable for inadequate pollution control measures, aligning with the principle of addressing pollution at its source.

Yr: 2007 Networks of Cooperation: Water Policy in Germany:

Rudig, Wolfgang and Kraemer, R. Andreas:

Paper Synopsis

German water policy-making defies easy categorisation. Policy processes are highly complex, fragmented, and diverse. Concentrating on the areas of drinking water supply and water pollution, the most important feature is the enormous importance of regional government in both the formulation and implementation of policy. The role of local government, and of municipal water utilities, is also crucial. The various forms of horizontal cooperation between individual municipalities and between the Lander are important, the latter having become particularly important as the Lander try to preserve their strong influence in the face of increasing policy activism by the EU. Historically, cooperative solutions have dominated much of policy development since the nineteenth century. In the face of powerful agricultural and industrial interests, the creation of networks of cooperation is still at the heart of policy, but the state relies less on authority or common interest than on exchange, with financial policy instruments coming to dominate. While water policy has been thoroughly reframed as part of environmental policy, environmental groups have played a relatively marginal role, although conflicts conceived in terms of local versus centralised water supply have gained some prominence in particular regions.

Tag

Germany Water Policy, Local Governance, Water.:

Annotation

R. Andreas Kraemer is the Founder and Director Emeritus, Ecologic Institute, and Wolfgang Rüdig is in the Department of Government, University of Strathclyde, Scotland.

This paper talks about German water policy making which is characterized by its

complex and fragmented nature, with a strong emphasis on regional and local governance, historical reliance on cooperative solutions, and a shift toward financial policy instruments, despite challenges from agricultural and industrial interests, with conflicts over local versus centralized water supply gaining prominence in specific regions.

The formulation of German water policy is notably intricate and defies straightforward classification. The processes involved are highly complex, fragmented, and diverse, with a particular focus on drinking water supply a both shaping and executing policy. Local government and municipal water utilities also play pivotal roles. Horizontal cooperation among individual municipalities and between the Länder (federal states) is significant, especially as the Länder aim to maintain their influence in response to increased policy initiatives from the European Union.

Throughout history, cooperative approaches have been prevalent in policy development, particularly since the nineteenth century. In addressing powerful agricultural and industrial interests, the establishment of collaborative networks remains central to policy, although the state now places less emphasis on authority or common interest and more on exchange, with financial policy instruments taking precedence. Despite water policy's integration into environmental policy, environmental groups have played a relatively minor role, with conflicts centered on local versus centralized water supply gaining prominence in specific regions.

Yr: 2007 The "WFD-effect" on upstream-downstream relations in international river basins ? insights from the Rhine and the Elbe basins:

Moellenkamp, S.:

Paper Synopsis

The upstream-downstream relationship in international river basins is a traditional challenge in water management. Water use in upstream countries often has a negative impact on water use in downstream countries. This is most evident in the classical example of industrial pollution in upstream countries hindering drinking water production downstream. The European Water Framework Directive (WFD) gives new impetus to the river basin approach and to international co-operation in European catchments. It aims at transforming a mainly water quality oriented management into a more integrated approach of ecosystem management. After discussing the traditional upstream-downstream relationship, this article shows that the WFD has a balancing effect on upstream-downstream problems and that it enhances river basin solidarity in international basins. While it lifts the downstream countries to the same level as the upstream countries, it also leads to new duties for the downstream states. Following the ecosystem approach, measures taken by downstream countries become increasingly more important. For example, downstream countries need to take measures to allow for migrating fish species to reach upstream stretches of river systems. With the WFD, fish populations receive increased attention, as they are an important indicator for the ecological

status. The European Commission acquires a new role of inspection and control in river basin management, which finally also leads to enhanced cooperation and solidarity among the states in a basin. In order to achieve better water quality and to mitigate upstream-downstream problems, also economic instruments can be applied and the WFD does not exclude the possibility of making use of financial compensations, if at the same time the polluter pays principle is taken into account. The results presented in this article originate from a broader study on integrated water resources management conducted at Bonn University and refer to the Rhine and Elbe basins (Moellenkamp, 2006).

Tag

International River Basin, WFD, Rhine, integrated water resources management:

Annotation

S. Moellenkamp is from the Institute of Environmental Systems Research, University of Osnabrueck, Germany.

The article underscores the significance of WFD, emphasizing its role in revitalizing the river basin approach and fostering international collaboration within European catchments. The objective is to shift from a predominantly water quality-focused management approach to a more integrated framework that encompasses ecosystem management. The findings discussed in this article stem from a comprehensive study on integrated water resources management carried out at Bonn University, specifically focusing on the Rhine and Elbe basins.

The Water Framework Directive introduces novel parameters for water resources management that are likely to alleviate upstream-downstream challenges. The WFD brings downstream countries to an equitable standing with other basin nations, granting them equivalent rights and responsibilities to their upstream counterparts. This article proposes that financial compensations remain a viable tool for addressing any existing upstream-downstream dichotomies, provided that the polluter pays principle is concurrently considered.

Yr: 2007 The Water Framework Directive and agricultural nitrate pollution: will great expectations in Brussels be dashed in Lower Saxony?:

Kastens, Britta and Newig, Jens:

Paper Synopsis

This paper discusses the opportunities and constraints regarding the effective implementation of the European Water Framework Directive (WFD) in the area of diffuse nitrate pollution. Owing to the subsidiarity principle and a new procedural mode of governance, the WFD only sets distinct environmental targets, leaving most decisions on how to operationalize and institutionalize the reduction of diffuse nitrate pollution to the member states. This is a particular challenge for Germany, where lower scale regions have become the main implementers of European water policy. Successful implementation of the WFD, i.e. the actual improvement of water quality, depends on a series of key contextual and contingent factors, operating at a regional scale. In a Northwest German

region with intensive agriculture and severe nitrate pollution, we analyse the historical and economic context and actor network of the region as well as the influence of environmental groups on public participation, the potential of biogas technology and new financial options. Besides the specific influence of these factors on the implementation process, we explore the uncertainties and difficulties surrounding European legislation and its operationalization in Germany and on a regional scale.

Tag

WFD; Regional Scale; Germany; Agricultural Nitrate pollution.:

Annotation

Britta Kastens & Jens Newig - University of Osnabrück, Institute of Environmental Systems Research, Germany.

This paper delves into the opportunities and challenges associated with the effective implementation of the European Water Framework Directive in addressing diffuse nitrate pollution. The WFD, guided by the subsidiarity principle and a novel procedural governance approach, establishes clear environmental targets, while devolving decision-making authority on the operationalization and institutionalization of measures to reduce diffuse nitrate pollution to individual member states. This decentralized approach poses a distinct challenge for Germany, where subnational regions play a pivotal role in implementing European water policy.

In the context of Germany, regional entities have emerged as primary actors responsible for executing European water policies. The successful implementation of the WFD, leading to tangible improvements in water quality, hinges upon a multitude of contextual and contingent factors operating at the regional level. This study focuses on a Northwest German region characterized by intensive agriculture and significant nitrate pollution. An in-depth analysis is conducted, considering the historical and economic backdrop, the intricate network of actors within the region, and the impact of environmental groups on public participation.

Furthermore, the paper explores the role of innovative technologies, such as biogas, and new financial mechanisms in the mitigation of nitrate pollution. The influence of these factors on the WFD implementation process is scrutinized, providing insights into their specific contributions and challenges. Emphasis is placed on the interplay between environmental groups and public participation, shedding light on their influence in shaping regional approaches to water quality improvement.

In addition to examining the region-specific factors, the study investigates the uncertainties and complexities associated with the translation of European legislation into practical measures within the German context and at the regional scale. This includes a nuanced exploration of the challenges and uncertainties inherent in the operationalization of the WFD, providing a comprehensive understanding of the difficulties encountered in aligning European directives with local realities.

Overall, the paper seeks to unravel the intricate dynamics surrounding the implementation of the WFD in Germany, offering valuable insights into the regionalized complexities of achieving water quality objectives within the European legislative framework.

Yr: 2007 International Commission for the Protection of the Rhine:

ICPR:

Tag

Water Framework Directive, Floods directive, Rhine 2020, Action Plan on Floods:

Annotation

The text provides an overview of the ecological objectives and organizational structure of the "International Commission for the Protection of the Rhine" (ICPR) along with the goals and achievements of the Rhine 2040 program, building on the previous Rhine 2020 initiative. The main ecological objective outlined is the restoration of habitat patch connectivity along the Rhine, establishing a network of habitats, and re-establishing the continuity of the main stream and tributaries covered by the migratory fish program. This underscores a commitment to enhancing biodiversity and ecological resilience.

The organizational structure of the ICPR is outlined, emphasizing the collaborative efforts of nine states for the benefit of the Rhine and its tributaries. The ICPR works towards sustainable development, floodplain preservation, and the overall well-being of the watershed. The objectives and tasks of the ICPR include improving the chemical and ecological state of the Rhine, comprehensive flood prevention and protection, and supporting the implementation of European regulations.

The Action Plan on Floods is highlighted as a crucial component, aiming not only to improve protection against floods for human safety and goods but also to enhance the floodplains of the Rhine. It emphasizes the examination of realistic measures, considering the impacts of climate change, to reduce extreme flood peaks and related damages. This dual approach addresses both human safety concerns and ecological considerations.

The text also mentions the extensive water quality monitoring system, consisting of 57 stations along the Rhine and its tributaries, assessing over 100 water quality constituents. This comprehensive monitoring includes the study of fish, invertebrates, and plankton, with a focus on pollutants from diffuse agricultural sources and micropollutants from urban wastewater. The emphasis on water quality aligns with the broader ecological goals of the program. Eight international main warning centers are highlighted, forming the backbone of the Warning and Alarm Plan. These centers play a critical role in informing downstream users about incidents such as large amounts of noxious substances polluting the Rhine, demonstrating a commitment to transparency and public awareness.

The text provides a snapshot of the intensive use of the Rhine catchment area, emphasizing the large population relying

on it, industrial and economic activities, and the importance of the river for power generation and navigation. It outlines the historical challenges, including the Rhine being considered the "sewer of Europe" in the 1970s, but notes significant improvements since then, with increased wastewater treatment and notable biodiversity recovery.

Successes are acknowledged, such as the significant reduction of negative flood impacts and improvements in water quality and biological diversity. The co-operation of member states under the ICPR umbrella is recognized as a significant achievement, although the text emphasizes that there is still much work to be done. The mention of Rhine 2020 underscores the continuation of efforts, with a focus on specific policy objectives related to habitat connectivity, flood prevention, water quality improvement, and compliance with international directives.

In conclusion, the report provides a comprehensive overview of the ecological and organizational aspects of the ICPR's initiatives, emphasizing their commitment to sustainable management, ecological resilience, and collaborative efforts for the protection of the Rhine and its watershed.

Yr: 2007 Accepting Father Rhine? Technological Fixes, Vigilance, and Transnational Lobbies as 'European' Strategies of Dutch Municipal Water Supplies 1900-1975:

Cornelis, Disco:

Paper Synopsis

Downstream users of river water (e.g. municipal waterworks) always face the problem of controlling the behaviour of upstream polluters. In the case of an international river like the Rhine this is exacerbated when there are no international arrangements constraining upstream polluters. This demands flex ibility and creativity from downstream waterworks. In this article I describe the repertoires developed by the municipal waterworks of two large Dutch cities, Amsterdam and Rotterdam. Two main repertoires are visible: 1) 'coping' by means of technical fixes and vigilance and 2) 'transnational technopolitics' aimed at institutionalising regulatory regimes to curb pollution. Rotterdam, totally dependent on Rhine water, emphasised 'coping' on a day to day basis, placing its trust on technologies of purification and vigilance. Amsterdam, using dune and lake water though envisioning future use of Rhine water, pursued a long term strategy aimed at improving the purity of the Rhine's waters including extensive longitudinal pollution measurements and transnational technopolitics. During the 1950s, the Amsterdam waterworks played a major role in forging international links among waterworks along the Rhine culminating in a sectoral organisation of Rhine Waterworks. This was one of the foundation stones on which the riparian nations were gradually able to build an effective regime for pollution control.

Tag

Water supply, Rhine, pollution, water treatment, international governance, coping, transnational technopolitics.:

Annotation

Cornelis Disco - University of Twente Dept. of Science, Technology and Health Policy Studies School of Business, Public Administration and Technology, Enschede, The Netherlands. his paper discusses about the downstream users of river water, such as municipal waterworks, consistently grapple with the challenge of regulating the activities of upstream polluters. This predicament becomes more complex when dealing with international rivers like the Rhine, especially in the absence of international agreements to constrain upstream polluters. Addressing this issue necessitates adaptability and innovation from downstream waterworks. This article explores the strategies adopted by municipal waterworks in two prominent Dutch cities, Amsterdam, and Rotterdam, in response to these challenges.

The two primary strategies, or repertoires, emerge in the practices of these waterworks: 1) 'coping,' involving the implementation of technical solutions and heightened vigilance, and 2) 'transnational technopolitics,' focused on establishing institutional regulatory frameworks to mitigate pollution. Rotterdam, heavily reliant on Rhine water, prioritizes day-to-day coping mechanisms, placing its reliance on purification technologies and surveillance. In contrast, Amsterdam, utilizing dune and lake water but contemplating future use of Rhine water, adopts a long-term approach. This approach involves enhancing the purity of the Rhine's waters through comprehensive pollution measurements and engaging in transnational technopolitics.

During the 1950s, the Amsterdam waterworks played a pivotal role in fostering international collaboration among waterworks along the Rhine. This collaborative effort culminated in the formation of a sectoral organization for Rhine Waterworks. This initiative laid a crucial foundation for riparian nations to gradually establish an effective regime for pollution control.

Yr: 2006 Implementing the Water Framework Directive: How to Define a "Competent Authority":

Green, Colin and Fernández-Bilbao, Amalia:

Tag

Institutions, Laws/Treaties/Agreements, Governance, Political Aspect, WFD, England, Competent Authority, IWRM, River Basin Planning:

Annotation

This paper uses the case study of England to study the implementation of the EU Water Framework Directive (WFD) through the appointment of a "Competent Authority." Each Member State is expected to designate a "Competent Authority" of their own that would be responsible for preparing and implementing River Basin Management Plans for each River Basin District, which was introduced as the new unit of management of water resources by the WFD.

The authors briefly discuss the WFD and the challenges its implementation can pose for Member States. The crux of their argument is that the institution chosen to be

the Competent Authority needs to wield enough influence over the other key stakeholders to successfully carry out the River Basin Planning (RBP) process and it needs to provide a platform to include all the stakeholders relevant to river basin planning. The authors chose England as their case study to test this argument as unlike the other European countries, it is highly centralised with a very high population density. The centralised nature of England stands in contrast with the principles of Integrated Water Resources Management (IWRM) and the WFD. This dichotomy is also reflected in the selection of the Environment Agency as the Competent Authority for England. The Environment Agency is the public body responsible for planning and managing water resources and it is a non-departmental public body of the Department of Environment, Food and Rural Affairs (Defra) and it has no direct democratic oversight.

The authors go on to provide a brief overview of England and its natural environment with a focus on its rivers and water bodies. They also list several relevant characteristics of the Environment Agency which can help in assessing its role as the Competent Authority. The Agency, which is a scientific bureaucracy, was created by the Prime Minister by merging a number of different organisations and it has many overlapping roles with two major regulatory and planning functions – all pollution control and IWRM. The Agency is only funded through grants and has "no real powers to directly raise revenue." Due to such constraints and its inherent structure, the authors believe that the Environment Agency has "neither the powers nor the funding necessary to deliver the requirements of the Water Framework Directive."

The authors also discuss what is meant by "competency" and what makes an authority competent. What are the metrics which can be used to assess the success of any institution? They go even further and discuss how does one define an institution to begin with. They list a few requirements for any institution such as their adaptability and their innovativeness. In the case of England, they argue that the real challenge would be to deliver integration through "a fragmented mosaic of institutions" and with England's history of a highly centralised government, this would not be an easy feat and will pose several obstacles along the way. Even the selection of the Environment Agency as the Competent Authority was done without any discussion which is a testament to their centralised nature.

As England is not a Rhine basin state, this paper sheds light on the different practices in other European countries and is helpful in understanding the challenges in the implementation of the Water Framework Directive in a country without a federal government.

Yr: 2005 Beyond limits and efficiency, what? Assessing developments in EU water policy:

Kallis, Giorgos:

Paper Synopsis

This paper documents a transformation of EU water policy from a standard-based approach towards a more diverse policy combining ecological, economic, and

social elements with an emphasis on institutional and participatory aspects. This is marked in a new, Water Framework Directive. Analysis is supported by a theoretical discussion of different approaches to sustainability and recognition of the deadlock of an ecological limit vs. economic efficiency dichotomy. While an approach originating from works in institutional and ecological economics and emphasising processes, justice and collective decisions seems to break this impasse, it is not without its own conceptual problems.

Tag

EU water policy; directives; sustainability; limits; efficiency; participation; institutional and ecological economics.:

Annotation

The paper, by Giorgos Kallis of University of California, provides an in-depth analysis of the transformation in European Union (EU) water policy, focusing on the shift from a standard-based approach to a more diverse policy integrating ecological, economic, and social elements. The primary focus is on the implications and prospects of the Water Framework Directive (WFD).

Kallis begins by presenting three paradigmatic perspectives on the relationship between ecology, economy, and society: ecological limits perspective, economic efficiency perspective, and an institutional-ecological economics perspective. This theoretical foundation sets the stage for the subsequent analysis of EU water policy.

The paper traces the historical evolution of EU water policy, discussing the era of limits characterized by water quality directives, the challenges encountered in implementing standard-based directives, and the subsequent economic efficiency offensive due to high compliance costs. The tensions between environmental protection and economic efficiency are explored, leading to the emergence of a synthesis that aligns with the propositions of institutional-ecological economists.

The WFD, introduced in 2000, is the focal point of the paper. Kallis highlights the new institutions and processes introduced by the directive, emphasizing the role of river basin authorities in coordinating water management. The shift from limits to shared goals and from efficiency to effectiveness is discussed, illustrating the nuanced approach of the directive that combines institutional change and procedural regulation with a commitment to environmental goals.

The paper discusses concerns about the implementation of the WFD, particularly focusing on the definition of common and comparable ecological goals, the involvement of non-governmental organizations (NGOs), and the democratic aspects of decision-making in river basin planning procedures.

The paper concludes by acknowledging the pragmatic approach of the WFD, recognizing the need for ecological protection and sustainability to result from democratic and shared collective choices. However, he raises concerns about the lack of specificity in the directive regarding institutions and decision processes, calling

for a more detailed framework to ensure meaningful change.

Yr: 2005 Rhine 2020 and Rhine 2040:

ICPR:

Tag

Water Quality, Ecology, Flooding:

Annotation

****Rhine 2020:****

The "Rhine 2020" program focused on ecosystem improvement, habitat restoration, and ecological continuity from Lake Constance to the North Sea by the year 2020. Progress between 2000 and 2005 was assessed in areas such as overbank areas reactivation, alluvial waters reconnection, structural diversity increase along the Rhine shipping lane, and river continuity improvement. Achievements were noted in most areas, except for the increase in structural diversity.

Regarding water quality, the Rhine demonstrated distinct improvement over 30 years. The program's emphasis on water protection led to significant reductions in noxious substances. While 96% of the population was connected to wastewater treatment plants, a few substances still exceeded desired concentrations. Continuous monitoring was deemed crucial for assessing water quality independently of annual variations.

****Rhine 2040:****

The "Rhine 2040" program is a comprehensive initiative aiming to establish a sustainably managed Rhine catchment area resilient to climate change, benefiting both nature and people. This program builds upon the evaluation of its predecessor, "Rhine 2020," and addresses unmet goals and emerging challenges. A key component of the program is the development of a climate change adaptation strategy by 2025, in alignment with national strategies and increased collaboration with user interest groups. The program prioritizes water quality, ecology, and considerations for high and low water.

Ecologically, "Rhine 2040" sets ambitious goals for strengthening the functional capabilities of the Rhine ecosystem by 2040. Special emphasis is placed on the ecological passability of the Rhine main stream for migratory fish, along with habitat restoration, preservation, protection, expansion, and reconnection. Efforts to mitigate negative impacts, including thermal discharges, are highlighted.

In terms of water quality, the program envisions the Rhine as a usable resource for drinking water production by 2040, emphasizing simple and natural treatment processes. Key objectives include the reduction of nutrient and micropollutant influx, improvement of sediment quality, and a significant reduction in waste, particularly plastic.

Flood management is a central focus, with the program aiming for a 15% reduction in flood risks on the Rhine and its tributaries by 2040 compared to 2020. This involves a combination of measures, including additional flood-reducing actions by 2030 and the reservation of spaces for flood

retention. The program places importance on raising awareness, providing information, and enhancing risk culture.

Addressing low water concerns, "Rhine 2040" recognizes potential negative economic consequences for the Rhine catchment area and aims to monitor and collaboratively find ways to avoid adverse effects. The program integrates win-win and no-regret measures, emphasizing sustainability, ecological resilience, water quality, and effective flood risk management.

****Comparing Rhine 2040 and Rhine 2020:****

In terms of timeframe, Rhine 2020 targeted objectives to be achieved by 2020, while Rhine 2040 sets goals for the year 2040. Rhine 2040 expands its focus to address climate change adaptation, sustainable resource use, and heightened environmental awareness. The ecological emphasis in Rhine 2040 is stronger, particularly regarding the ecological passability of the Rhine and comprehensive habitat restoration. Rhine 2040 envisions the Rhine as a drinking water resource with specific reduction targets for nutrient and micropollutant influx, whereas Rhine 2020 primarily focused on reducing noxious substances. Flood management in Rhine 2040 includes a specific reduction target and emphasizes a combination of measures, while Rhine 2020 addressed ongoing flood risk management without a specific reduction target. Low water concerns are explicitly recognized in Rhine 2040, with a focus on collaborative monitoring and solutions, an aspect not addressed explicitly in Rhine 2020.

Yr: 2004 The governance of land use in river basins: prospects for overcoming problems of institutional interplay with the EU Water Framework Directive:

Timothy, Moss and Timothy, Moss:

Paper Synopsis

This paper examines the prospects for the interactive governance of water and land use following an initiative to institutionalise integrated river basin management. Taking an institutionalist perspective it first presents river basin management as a tool for overcoming problems of spatial fit and institutional interplay over water and land use. A case study of the implementation of the EU Water Framework Directive in Germany then explores opportunities and requirements for governance in future water management. On the basis of these findings the paper tests the validity of the thesis that the success of EU policy reform depends on the degree of 'fit' with existing institutional structures and practices.

Tag

Institutional Interplay, Governance, WFD, River Basins.:

Annotation

Timothy Moss - Institute for Regional Development and Structural Planning, Berlin, Germany

This article investigates the potential of governance structures to address conflicts of interest between water and land use, with a focus on the ongoing discourse surrounding the implementation of the Water

Framework Directive in Germany. The country faces a notable challenge in adapting and innovating its institutions to meet the demands of this directive. Currently, Germany's water management lacks a basin-oriented organization, with only a few entities of limited significance operating in this manner. The distribution of regulatory, planning, policymaking, and enforcement powers is fragmented among water authorities representing federal, state, and municipal governments. The administration of water resources in Germany is marked by a pronounced sectoral division of responsibilities, a characteristic feature of its public governance.

The historical reliance on regulatory tools in environmental management has left water authorities less experienced in engaging in participatory and collaborative governance approaches beyond formal consultation processes. Against this institutional background, this article explores the novel requirements and opportunities introduced by the WFD for water management institutions to influence pertinent land-use practices. Additionally, it delves into the anticipated emergence of cross-sectoral governance models concerning land-use issues in Germany in response to the WFD

Yr: 2004 EU Water Framework Directive vs. Integrated Water Resources Management: The Seven Mismatches:

Rahaman, Muhammad Mizanur, Varis, Olli and Kajander, Tommi:

Paper Synopsis

The aim of this paper is to analyze how the EU Water Framework Directive complies with the international principles concerning Integrated Water Resources Management (IWRM) agreed in major conferences. The outcomes of the International Conference on Water and Environment (Dublin, 1992), the Second World Water Forum (The Hague, 2000), the International Conference on Freshwater (Bonn, 2001), and the World Summit on Sustainable Development (WSSD) (Johannesburg, 2002) were compared with the EU Water Framework Directive. Seven notable mismatches were found, even though several EU countries have played a leading role in those conferences. The question arises whether the outcome of these conferences is not efficient enough to influence EU policies?do the conferences just produce collections of idealistic buzzwords or is there a requirement for different principles regarding IWRM for developing countries and developed countries?

Annotation

The authors from the Water Resources Laboratory, Helsinki University of Technology, Finland, in this article have challenged the dominant perception that EU WFD is the template for Integrated Water Resources Development (IWRM). To support this, it analyzes and compares the EU WFD with other international water-related conferences whose contributions remain the key ideational elements of the IWRM—in particular, Dublin 1992: the International Conference on Water and Environment, the Second World Water Forum (The Hague, 2000), the International Conference on Freshwater (Bonn, 2001), and the World Summit on Sustainable Development (WSSD) (Johannesburg,

2002). The comparison demonstrates the seven key areas of mismatch between the IWRM principles emerging from these international water conferences and the EU WFD framework. These mismatches were observed in the realm of gender issues, local participation, management style, decentralization, gender issues, the role of the private sector, and how different sectors coordinate for improved water management.

Based on this evidence, the authors have further argued about the degree to which international events influence EU policies for water management, even though several EU countries played a leading role in those conferences. The article ends by evoking a critical research question on whether IWRM as a universal framework should be reimagined based on the distinct context of developing and developed nations.

Yr: 2004 Transposition of the Water Framework Directive in France:

Muller, Éric:

Tag

WFD, France, Transposition, Governance, River basin.:

Annotation

Éric Muller is Engineer in charge of water planning and implementation of the Water Framework Directive in the French Ministry for the Environment.

This paper discusses how the transposition of Water Framework Directive takes place in France. French law incorporated the Water Framework Directive through the enactment of Law 2004-338 on 21 April 2004. Subsequent to this legislation, a series of implementing texts will be introduced to delineate the specific details of how the Directive is to be implemented. In France, the management of water quality and quantity relies on the Water Framework Directive, national legislation, the utilization of suitable tools, and the engagement of pertinent stakeholders, both at the institutional and local levels.

This article examines institutional water management in France, along with the emerging trends in the French system subsequent to the incorporation of European water management principles. Existing French institutional, stakeholders have evolved to align with the expectations outlined in the Water Framework Directive.

Instead of challenging French water policy, the Water Framework Directive affirms and strengthens the approach to water management that has been formulated in France. The Water Framework Directive necessitates adjustments and modifications to the existing French policy in certain aspects. It introduces three key principles, forming the foundation of a more organized approach to long-term water development policy. These principles include: (i) establishing environmental objectives, (ii) fostering public participation, and (iii) incorporating socio-economic considerations.

Yr: 2004 Water for Europe: The Creation of the European Water Framework Directive*:

Kaika, Maria:

Paper Synopsis

When the French politician Clemenceau visited Athens in 1899, he was taken on a tour of the city and briefed on the social, political, and economic problems facing both the city and the young Greek state. Afterwards, he addressed the local political and intellectual elites, starting his speech by exclaiming: 'The best politician amongst you shall be the one who will bring water into Athens' (Clemenceau 1899, cited in Gerontas and Skouzes 1963: in). Indeed, water supply was one of the most important and intricate political and social issues of the nineteenth century. Although water supply and management is today often presented as a purely technological and engineering problem, it remains, as we shall see, a deeply political issue, implicated in relations of social power (Reisner 1990; Postel 1992). Indeed, today, more than a century onwards from Clemenceau's comment, his aphorism still holds true. Despite the fact that Western economies have undergone a period of 'fierce modernization' during the twentieth century, and despite technological advances and innovation, water supply and management remain major socio-technical issues at the heart of the political agenda (Bank 1992). Whilst contemporary Europe is not faced with severe water shortages (although many areas, particularly but not exclusively in the European South still face disruptions in water supply during dry months (ETC/IW 1996; ICWS 1996)), water supply and management remain amongst the most important political issues at the European and international level (Hundley 1992; Faure and Rubin 1993; Gleick 1993). Today, if anything, the political ecology of water has become more complex, and more important politically than in the nineteenth century. With the increasing internationalization and complexity of water resource management, with the emergence of an increasingly larger number of actors and institutions involved in this process, with the newly vested economic interests in water supply, and with the increasing concern and sensitivity towards environmental protection, if Clemenceau were alive today, he would probably maintain his aphorism—rephrasing it for the contemporary era: 'The best politician amongst you shall be the one who will bring clean water into Europe, while keeping happy all the parties involved in water supply, use, and management, at the local, regional, national, and European level.'

Annotation

Water for Europe: The Creation of the European Water Framework Directive gives a critical analysis of the negotiation and consensus-building process leading up to the EU WFD. In parts, the article briefly discusses the history of the EU WFD and illustrates the rapidly changing political, economic, and social structure in Europe that made it imperative to reform EU water legislation. The dynamics of change were then analysed using three parameters: multiplicity of actors, power centres, and scales of decision-making that were emerging in European water governance towards the end of the 20th century.

The parameters help to unpack in detail the changes in actors, institutions, and social relations in European politics and their incompatible agendas that were responsible for conflicts at multiple scales. The author in particular shows the diverging viewpoints of the key stakeholders—ranging from water suppliers; the chemical and fertilizer industry; the agricultural sector and farmer unions; specific NGOs, such as the European Environmental Bureau (EEB); regulators; and the water industry in countries with privatized water services—and the implications of their lobbying capacity and political influence in setting the agendas during WFD consultations.

The other part of the chapter dissects the major contestation between the European Parliament and the European Council (Council of Ministers) and how changes in the EU decision-making process—most notably, the Amsterdam Treaty altered the power relationship between the EU Parliament and the Council—enabling a consensus on the adoption of the WFD as an umbrella legislation for water quality management. The section is, to a significant extent, based on archival research to highlight the compromises that were agreed upon by the various parties to arive at a common text for the EU WFD. As shown, the thorny issues were pertaining to the implementation period, legally binding objectives, full-cost pricing, and priority hazardous substances.

The chapter ends by evoking some important observations— the role of the private water and wastewater agencies located within the neoliberal market settings vis à vis the state's financial support and regulatory framework in balancing the industrial development and environemental protection that remain key to the success of the EU WFD.

Yr: 2004 Rhine and Salmon 2020:

ICPR:

Tag

ICPR, Rhine 2020, Salmon 2000,Flora-Fauna-Habitat (FFH) directive, Rio de Janeiro Convention, EU Water framework directive (WFD):

Annotation

The document outlines the progress and future goals of the "Salmon 2000" initiative, now part of the "Rhine 2020" program by the International Commission for the Protection of the Rhine (ICPR). The four visions set the stage for the evaluation of the program's success, focusing on increasing salmon population, ensuring uninterrupted migration, achieving self-sustaining stocking, and ultimately establishing a stable wild salmon population in the Rhine by 2020.

The introduction contextualizes within the framework of the ICPR's efforts, highlighting the success of previous initiatives, such as the Rhine Action Programme and "Salmon 2000," in restoring migratory fish populations, particularly salmon, to the Rhine. The need for a new target is emphasized, emphasizing the development of stable salmon populations capable of natural reproduction and maintenance without human intervention, aligning with the EU Water Framework Directive (WFD) objectives.

The document underscores the importance of the Rhine 2020 program in promoting ecological health and diversity in the Rhine system. It addresses key targets, including habitat patch connectivity, ecological patency of the Rhine, and the preservation of biological diversity encompassing various plant and animal species. The Flora-Fauna-Habitat (FFH) directive and its role in preserving European natural heritage and endangered species within strictly protected areas are also discussed. The historical perspective on salmon fishery along the Rhine highlights its significance dating back to Roman times. The decline of salmon due to pollution and industrialization in the 19th and 20th centuries led to the foundation of the ICPR and subsequent successful initiatives like "Salmon 2000."

The life cycle of Atlantic salmon is detailed, emphasizing their remarkable journey from hatching in brooks to returning upstream for spawning. The document then assesses the success of the Rhine 2020 program, citing achievements such as the increase in returning adult salmon, natural reproduction in tributaries, successful fish passages like Iffezheim, and ongoing monitoring efforts. The actions outlined in the Rhine Salmon 2020 program encompass habitat restoration, floodplain activation, river structure improvement, and obstacle removal to facilitate free migration, contributing to the overall enhancement of the Rhine ecosystem.

However, challenges persist, including the impact of weirs and barrages, turbine-related mortality, deficiencies in nursery grounds, and the need for more monitoring stations. The acknowledgment that stable salmon populations have not yet been achieved, necessitating continued stocking exercises, reflects the ongoing commitment to improvement.

In conclusion, the document emphasizes the need for additional measures, including the construction of more fish passages, "salmon ladders" for tributaries, and the cleanup of nursery grounds. It underscores the urgency of equipping hydroelectric power plants with protective measures to reduce fish mortality and calls for enhanced monitoring efforts. The ultimate goal remains the establishment of a self-sustaining wild salmon population in the Rhine by 2020.

Yr: 2004 The EC Water Framework Directive – AnInstrument for Integrating Water Policy:

Grimeaud, David:

Annotation

In this article by David Grimeaud, the focus is on the European Commission's Water Framework Directive (WFD) of 2000 and its role as a pivotal instrument in shaping and integrating EU water policy. The introduction highlights the challenges faced by Member States in implementing and enforcing EU environmental laws, particularly within the realm of water legislation, which accounted for a significant portion of non-compliance cases in 2002.

The author addresses the implementation hurdles and enforcement actions faced by Member States, shedding light on the 2000 WFD as one of the least implemented EU environmental directives. This lack of

implementation has led to legal actions against Member States, emphasizing the need for improved compliance with EU water legislation to protect the environment and human health.

The article delves into the threefold phenomenon impacting water law implementation. Firstly, Member States often encounter difficulties due to social, administrative, political, and economic costs associated with EU environmental legislation. Secondly, concerns arise regarding the adequacy and effectiveness of EU environmental law, including water legislation, with critics pointing to legislative integration issues and regulatory complexities. Thirdly, despite implementation challenges, there are indications of improved European water quality over the past decade.

The main focus of the article is on the innovative features of the 2000 WFD, which goes beyond setting water quality objectives and regulating contaminant discharges. It establishes an integrated water policy and management scheme, requiring Member States to adopt an encompassing approach to water issues. The author discusses the normative consolidation brought about by the WFD, replacing multiple pre-existing water directives with a single legislative act.

The environmental objectives pursued by the WFD are outlined, emphasizing the 'good status' standard for aquatic bodies. Exemptions for Member States are discussed, highlighting conditions under which states may deviate from WFD environmental objectives.

The article further explores the instruments provided by the WFD to facilitate holistic and integrated water policy implementation. This includes the obligation to identify river basins and districts, set monitoring programs, and establish river basin management plans. The EU water-based chemical policies, as outlined in Articles 16 and 17 of the WFD, are examined, with a focus on their nature and scope for both surface and groundwater.

Lastly, the article touches on economic instruments, particularly national water-pricing policies, as outlined in Article 9 of the WFD. The role of pricing policies for water sustainability is discussed, along with EC Commission guidelines.

The conclusion reflects on the integrative and innovative features of the WFD, replacing fragmented EC water legal instruments with a subsidiarity-based water management system. The article acknowledges concerns about the interpretation and implementation of key provisions and highlights the need for further assessment of the WFD's effectiveness over time.

Yr: 2004 The Evolution of European Water Policy:

Aubin, David and Varone, Frédéric:

Paper Synopsis

Depletion of water resources in Europe has been a continuous process for forty years. Human water uses have increased throughout the period, with no consideration for a resource that was initially imagined to be self-purifying.

Observations of the consequences of anthropocentric use were conducted starting in the 1960s, made possible by the development of science. Emerging scientific knowledge in the environmental field appeared with the concept of ecosystems (Delort and Walter, 2001). Since then, the environment progressively started to enter the arenas of decision-making at all levels. A series of measures being taken in order to improve the quality of surface water, are based on the assumption that if we dilute sufficiently polluted substances, then the self-purification capacities will restore the water. This initial idea is supplemented by a prohibition/regulation of emissions of hazardous substances, e.g. heavy metals, which cannot be diluted or absorbed by the environment. Since then, environmental legislation has developed according to a process of trial and error in parallel with quality assessment methods and data collection. Assessment reports continuously demonstrate that we are failing to reach our initial objectives, despite much improvement. "In spite of the introduction of water quality objectives in the EU and the attention given to water quality in the ecological action program for the central and eastern European countries, no global improvement of the quality of water bodies has been observed since 1989/90. The European countries refer to different evolutions without any coherent geographical structure. However some improvements are observed in the most polluted water bodies since the 1970s".1 Nowadays we observe that additional measures are necessary to halt the depletion of the water resource.2

Annotation

Based on the European research project EUWARENESS, this book explores the evolution of water management in the Netherlands, Belgium, France, Spain, Italy, and Switzerland. The authors analyze institutional systems, water governance, and property rights using a theoretical framework. Over nearly 200 years, the development of national water resource systems has been detailed (1800–2000). The reader can identify the circumstances that make a regime shift and paradigm change conceivable, thanks to the long-term viewpoint. Along with a comparative examination and analysis of regime development in the six participating nations, the book also offers a critical critique of how the European Union formulates policy.

The chapter on the Evolution of European Water Policy in particular unpacks the evolution of the water policy by providing a brief history of the European water policy and tracking the development and conditions for the adoption of the EU WFD.

In the brief history that is divided into sections, the chapter well articulates the various steps of the EU water policy, focusing on the quality aspects, in other words, the first and second generations of the directives, and explains how the first generation of directives, which were based on immission logic (quality objectives for designated types of water, such as bathing water, drinking water, and fishing water), were transformed and upgraded by the adoption of emission standards (for urban wastewater, nitrates from the agricultural sector, and diffused pollution from the industrial sector) in the second generation directives. The work provides critical

information on the policy design of the successive generations of the EU water directives—by analyzing the logic of intervention across generations (WFD is termed the third generation of the EU water directives)—as well as how the definition of 'water bodies', water uses, objectives, instrument mix, actors of implementation, target groups, and final beneficiaries differed across these generations. This transformation had unequal implementation, and the chapter evaluated the level of enforcement of the main EU water directives in five EU countries.

In addition, the work provides a succinct account of how European water policy draws heavily from various international conventions—OSPAR, the Convention of Oslo and Paris, and others—and how environmental and water agendas are dealt with at the EC/EU level. These accounts show the interplay of multi-level and multi-scale institutions each with its distinct objective that influenced and reinforced EU water policy—in particular the qualitative aspects.

The policy-relevant work also provides an extensive explanation of the contexts and conditions that necessitated a new water management framework (read' WFD") and the adoption of the WFD Project. The section of this chapter is a good reference point for understanding the 'principles and content of the WFD' and the challenges faced by the member states in its implementation. On the flip side, it unpacks how the European Commission supported and anchored the adoption of the WFD and its implementation. The chapter ends with thought-provoking questions on the prospects and research scope of this new water management framework currently in place in Europe.

Yr: 2003 Sustainable water resource management: River basin management and the EC Water Framework Directive:

Teodosiu, Carmen, Barjoveanu, George and Teleman, Daniela:

Paper Synopsis

Due to the continuous deterioration of water quality, as well to the intensive and unbalanced usage of water in different regions and industries, not correlated enough with the adoption of coherent recycling and reuse practices, the future availability of water is threatened in many regions. Because of that, at the dawn of the third millennium, water may be considered a strategic resource as well as a trade good, and sustainable water management programs must be implemented at local, regional, national and international scale. Such sustainable solutions can only be found by considering both management and technological practices, in the context of well-defined national and international associated environmental policies and legislation. This study presents the actual trends of the European water resources management, with particular attention given to the EC Water Framework Directive (EC WFD) that integrates, for the first time, all issues related to an improved protection and management of all of Europe's water resources and aquatic environments The integrated river basin management is considered to be an essential part for the implementation of the EC WFD and a case study concerning the Prut river basin is discussed.

Annotation

This paper, authored by Carmen Teodosiu, George Barjoveanu, and Daniela Teleman (of Technical University of Iasi, Romania), emphasize the contemporary challenges posed by the continuous deterioration of water quality and the imbalanced usage of water resources in various regions and industries. Recognizing water as a strategic resource and a trade commodity, the study advocates for sustainable water management programs at local, regional, national, and international scales.

The paper provides an overview of the current trends in European water resources management, emphasizing the significance of the EC WFD, which comprehensively addresses issues related to the protection and management of water resources and aquatic environments across Europe. The study explores the integrated river basin management approach as an essential component for implementing the EC WFD, using a case study of the Prut river basin to illustrate practical considerations. A case study is presented to illustrate the initial steps toward integrated river basin management, highlighting the challenges and the importance of stakeholder involvement and public participation.

The paper traces the historical evolution of water utilization from ancient civilizations to the industrial revolution, highlighting its impact on water quality and quantity. It addresses the environmental consequences of inadequate control of human activities, particularly in the industrial sector, and emphasizes the need for coherent recycling, reuse practices, and future-oriented sustainable solutions. The EC WFD is emphasized and its shift from pollution prevention and control to the sustainable use of water resources. The study discusses challenges associated with the application of the WFD, including individualized approaches to water management, varying solutions for water use, legal and socio-economic disparities among European states, and the effective transposition of WFD principles into national laws.

The integrated river basin management approach is explored as a means to achieve the "good ecological status" of water bodies, transcending political boundaries and involving all stakeholders within a river basin. The paper outlines four interdependent elements of integrated river basin management: legislative-institutional frame, planning, operational management, and analytical support. The authors conclude by underlining the significance of public engagement as a crucial step in implementing the EC WFD and achieving sustainable water resources management.

Yr: 2003 Conflict and co-operation in international freshwater management: A global review:

Mostert, Erik:

Paper Synopsis

In the past decades much has been written about international freshwater management. Many writers have predicted that the wars in the 21st century will be over water. More recently, the idea that water can act as a catalyst for peace has gained currency. This article reviews developments in international freshwater management, based on 35 case studies.

Many international agreements have been concluded and many river basin commissions have been established, despite conflicts of interests. The most common and most effective strategy to reach agreement has been the desire to develop or maintain good relations. Moreover, the cases show that international freshwater management should involve local governments, NGOs and individual water users if it is to be effective. The article concludes that the old water management paradigm ? national water resources development ? is gradually being replaced by a new paradigm: integrated river basin management across all levels, national, international and subnational.

Tag

River basin management; international agreements; conflict; cooperation; institutions; integration; water resources.:

Annotation

Erik Mostert - RBA Centre, Delft University of Technology, Stevinweg, Delft, The Netherlands

This article provides the findings of a literature review regarding the conflicts and co-operation in international freshwater management. The initial section outlines the theoretical framework and research methodology employed in the study. The subsequent section delves into the characterization of the 35 included cases. Following this, an evaluation is conducted on the various strategies employed to reach agreements, the organizational frameworks instituted, the involvement of non-state parties, and, lastly, the matter of public participation.

Numerous international agreements have been forged, and numerous river basin commissions have been established despite conflicts of interest. The prevailing and highly effective strategy for achieving consensus has consistently been the shared goal of cultivating or preserving positive relations. This approach underscores the significance of fostering cooperative and amicable relationships as a key driver in overcoming differences and facilitating agreements in the complex arena of international water management.

In conclusion, the article posits that a significant paradigm shift is currently taking place in international water management. This shift is reflected in the evolving strategies, organizational structures, and stakeholder involvement approaches observed across the cases studied.

Yr: 2003 The EU Water Framework Directive: Part 1. European Policy-making and the changing topography of lobbying:

Kaika, Maria and Page, Ben:

Paper Synopsis

This paper is a history of the making of the European Union's Water Framework Directive (WFD). It will be followed by a second paper, which analyses the relationship between the innovations of the WFD and a range of different interest groups. This directive is of particular interest to commentators on EU

policy-making because it was created through the co-decision process, in which the Council of Ministers and the European Parliament have joint influence over the

final text. Following substantive differences in position between the two bodies the WFD was finalized through a conciliation process in June 2000. This change in the practice of European decision-making has allowed non-governmental organizations new opportunities to participate in water policy-making and to have a greater influence on EU directives. It is argued that the environmental lobby has adapted swiftly to these changes and used them to considerable advantage in pursuit of its own goals. The passage of the legislation between 1998 and 2000 is described, paying careful attention to who participated in the process of amending the draft directive and what major amendments were made. Copyright © 2003 John Wiley & Sons, Ltd and ERP Environment.

Annotation

There are two parts to this paper, where the authors from the University of Oxford and UCL demonstrate the dynamics and influence of lobbying activities in European policymaking by taking the example of the EU WFD—it traces the history of the European Union's WFD by carefully documenting the passage of the EU WFD legislation between 1998 and 2000. In particular, the paper presents a narrative of the WFD legislation process and how it was produce and reproduce—to politically accommodate multiple viewpoints and contestations from the various participants—from environmental NGOs to the European Parliament.

The work depicts the various phases that the WFD legislation process encountered—by considering the broad positions taken by the 3 important EU entities (Council of Ministers, Commission, Parliament) on 4 key issues: 'full cost pricing, the legally binding character of the directive, the binding commitment to end releases of hazardous substances into the marine environment (OSPAR), and the implementation period for the directive (excluding the 18-year extension period)'. The positionality of the EU entities diluted the original draft through amendments during the first phase (January 1999)—for instance, on "those relating to consultation, those relating to the legal status of the incorporation of the Esbjerg declaration, those relating to the process of identifying priority hazardous substances, and those relating to the process of setting quality standards for drinking water sources.".

The second set of compromises was formalized again through amendments between May and June 2000 relating to the legal enforceability (where it was agreed that "in relation to the legal enforceability of the WFD, it was agreed that, although member states will only have to 'aim' to achieve good water status (as the Council desired), there will be a series of subsidiary phrases that state that member states 'shall' protect different kinds of water, prevent water quality deterioration, and enhance water bodies"), the binding nature of the WFD (environmental objectives of the WFD became binding on member states).

The paper concludes with the observation of the emerging influence of the environmental lobby in shaping European water policy.

Yr: 2003 The Water Framework Directive: A New Directive for a Changing Social, Political and Economic European Framework:

Kaika, Maria:

Paper Synopsis

This article examines the intricate process of developing the European Union's Water Framework Directive. It sees the Directive as a response to recent economic, political and social changes related to

water management, including the shift from government to governance, the liberalization of water markets and the emergence ofa new set of institutions, actors, etc. and their respective relations (i.e. social capital). The article focuses on the key points ofdisagreement between the Council ofMinisters and the European Parliament that threatened to prevent the Directive from being materialized and interprets this controversy as the culmination of conflicting interests between different actors at the local, national and European levels. Finally, it asserts the increasingly important role ofthe nation state in the decision-making and implementation ofthe Directive and sets this against recent arguments about the death of the State.

Annotation

Maria Kaika is a professor and a senior researcher at the University of Manchester and has written extensively on the water governance paradigm under EU WFD.

The article examines the various contestations between institutions and actors across various levels of government —–from national to European levels in arriving at a consensus on the adoption of the EU Water Framework Directive. In particular, the article highlights the key conflict of interest between the Council of Ministers(nations) and the European Parliament.

The paper introduces a brief history of the European water policy and discusses chronologically the development of European legislation and its various phases that eventually produced the EU WFD— which unified and harmonized various existing legislations on water quality standards and management. In the next phase, the paper draws on various scholarly and archival works to dissect the various parameters in the context of water management that forms the theoretical framework for understanding the various contestation in adoption of the EU WFD– these parameters that have been analyzed in this context are mainly multiplicity of actors, power centers, and the changing water management and politics to respond to the increasing environmental sensibilities.

This framework brings forward a renewed understanding of EU WFD and European water legislation by analyzing the broader social, political, and economic forces within which the decision to change European Union water policy was made. It further dissects the multiple conflicting agendas among the various actors and institutions and specific changes that were negotiated and the subsequent compromise — from the draft stage to the final adoption of the WFD. In addition, this work briefly

discusses the challenge of praxis in 'translating' WFD— a regional agenda into national legislation of the member states.

The article concludes with a caution on the complexity of the multi-scalar and layered governance system of WFD to produce an equitable and sustainable outcome for Europe.

Yr: 2003 Rhine Case Study:

D., Frijters Ine and Jan, Leentvaar:

Annotation

This comprehensive text, by Ine D. Fritjers and Jan Leentvaar of UNESCO, delves into the intricacies of the Rhine River, spanning its geographical, ecological, and geopolitical dimensions, offering a thorough understanding of the challenges and collaborative efforts in managing this critical European waterway. The Rhine, flowing through Switzerland, France, Germany, and the Netherlands, serves as a linchpin for various essential functions, including navigation, industry, agriculture, energy generation, and as a natural habitat for diverse species.

The document illuminates the distinct ecosystems along the Rhine, highlighting the environmental significance of regions such as the High Rhine in Switzerland, the Upper Rhine adversely impacted by flood mitigation measures, and the Middle Rhine with its unique landscape. It underscores the ecological imperative of extending alluvial areas through initiatives like the "Salmon 2000" Action Program, aiming to protect ecosystems and restore habitats for dependent flora and fauna.

Crucially, the Rhine's status as Europe's most densely navigated shipping route underscores its pivotal role in industrial, municipal, and agricultural water needs. This intricate web of functions requires collaborative governance, and the text introduces three key organizations: the Central Commission for Navigation on the Rhine (CCNR), the International Commission for the Hydrology of the Rhine Basin (CHR), and the International Commission for the Protection of the Rhine (ICPR). Each plays a vital role in ensuring navigation freedom, sustainable development through hydrological measures, and combating pollution. The narrative extends beyond organizational structures to delve into conflict prevention and resolution methods, recognizing the diverse causes of conflicts, including pollution, water scarcity, and economic factors. The mention of methodologies such as the Rhine alarm model, policy analysis, and system analysis highlights the complexity of decision-making in the face of multifaceted challenges.

International agreements, such as the Aarhus Convention and the EU Framework Directive, are discussed in the context of enhancing public participation and environmental rights. The historical evolution of the Rhine's water quality issues and the establishment of the ICPR in 1950 to address pollution concerns, especially industrialization's impact, demonstrates the proactive approach taken to safeguard this vital resource. The text culminates in discussions on the Rhine Action Programme, initiated in 1987, reflecting a commitment to transboundary cooperation, ecological enhancement, and safeguarding drinking water production. Despite

successes, challenges persist, notably in managing diffuse sources of pollution and mitigating the threat of salt intrusion from the North Sea.

In essence, this paper encapsulates a holistic view of the challenges and collaborative strategies in managing the Rhine River, emphasizing the need for integrated water resource management to achieve sustainability within the framework of the European Water Framework Directive.

Yr: 2003 The EU water framework directive: Part 2. Policy innovation and the shifting choreography of governance:

Ben, Page and Maria, Kaika:

Paper Synopsis

This paper is an analysis of the policy innovations of the European Union's Water Framework Directive and their relationship to a range of economic and geographical interests. It follows a previous paper describing the process of the making of the WFD in relation to the new EU co-decision process. This paper argues that the innovative aspects of the policy reflect a context in which the broader governance arrangements for water management in Europe are shifting in dramatic ways. The paper identifies the aspects of the WFD that are innovative by comparing it with previous European directives related to water management legislation. The paper then describes the state of Europe's freshwater resources as a

basis for understanding the regional geography of interests in the policy-making process and examines the contrasting interests of state, market and civil society institutions and their impact on the final draft. The paper ends by bringing the history of the WFD up to date by looking at the initial responses of the key actors to the final WFD and at recent developments in relation to implementation. © 2003 John Wiley and Sons, Ltd and ERP Environment.

Tag

WFD, Rhine, EU Water Policy, Historical Overview.:

Annotation

Ben Page - Department of Geography, UCL, UK and Maria Kaika - School of Geography and the Environment and St. Edmund Hall, University of Oxford, UK.

This paper highlights the innovative features of the Water Framework Directive by comparing it with earlier stages in the evolution of European water policy. This paper contends that the distinctive features of the policy are a response to a changing landscape in which overarching governance structures for water management in Europe are undergoing significant transformations. By contrasting it with prior European directives on water management, the paper identifies the innovative elements of the Water Framework Directive. The assessment of Europe's water resources serves as a foundation for outlining the regional distribution of lobbying interests among nation-states.

Additionally, it delineates the condition of Europe's freshwater resources to establish a foundation for comprehending the regional

distribution of interests in the policymaking process. Also, the historical overview of the WFD concludes by examining how key actors responded to the final draft directive and shedding light on recent developments in the implementation of the WFD. It investigates the divergent interests of state, market, and civil society institutions and their influence on the final draft of the policy.

Yr: 2002 The EU Water Framework Directive - A key to catchment-based governance:

Holzwarth, Fritz:

Paper Synopsis

The principles of good water governance require an effective water policy with a clear legal framework and institutional structure for managing river basins and aquifers. Integrated water resources management is essential and decision-making processes must be participatory and transparent. The development of the European Union's Water Framework Directive is outlined, and it is shown how it can serve as the basis of catchment-based governance for the successful management of water quality and quantity in transboundary river basins.

Annotation

This text, authored by Dr. Fritz Holzwarth (of Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety in Bonn, Germany), illuminates the pivotal role of the EU Water Framework Directive (WFD) in establishing effective catchment-based governance for transboundary river basins. The abstract sets the stage by underlining the principles of good water governance, advocating for a clear legal framework and institutional structure to oversee river basins and aquifers. The paper then outlines the development of the EU's WFD, portraying it as a cornerstone for successful catchment-based governance, with a specific focus on managing both water quality and quantity.

The introduction, accentuates the global importance of transboundary waters and the imperative for cooperative water regimes. Drawing on Europe's extensive experience in transboundary cooperation, with notable examples like the Rhine, the text navigates the intricacies of formulating comprehensive and coherent water legislation within the EU.

The lessons learned from the Water Framework Directive become a central theme. The text highlights the directive's flexibility, allowing member states to tailor solutions based on the specificities of diverse river basins. The paper emphasizes the legal binding nature of the directive within EU member states, underscoring the significant commitment required for successful implementation, including the imposition of substantial penalties for non-compliance. Subsequent sections extrapolate valuable lessons applicable beyond the EU context, addressing sustained political commitment, fostering a spirit of cooperation, crafting effective legal frameworks, and promoting cross-sectoral policies and planning.

The role of stakeholders and public participation is underscored, advocating for the active involvement of experts,

community-based organizations, and non-governmental entities. The paper highlights the essential nature of reliable data and monitoring programs for successful cooperation, emphasizing the significance of information exchange and knowledge sharing.

The text concludes by underlining the EU-WFD's experiences as a guiding principle for catchment-based governance. Dr. Holzwarth envisions water as a catalyst for cooperation rather than a potential source of conflicts, adding a hopeful perspective to the field.

Yr: 2002 Europe's Rhine River Delta and China's Pearl River Delta: Issues and Lessons for Integrated Water Resources Management:

Francesch, Maria:

Paper Synopsis

People cannot survive if they manage their water incorrectly. All over the world countries have undertaken management initiatives, both at the national and the international levels. In this article water management initiatives regarding two catchments are compared, viz. the Rhine and the Pearl River. Both catchments are roughly similar in size and in the number of inhabitants, though differences do exist. The analysis focuses on catchment characteristics, perceived issues, and relevant legal and administrative instruments. It also covers the question of the effectiveness of the initiatives to-date. In the conclusion, attention is paid to factors thai can contribute to a more integrated water resources management scheme.

Annotation

This article, by Maria Francesch, explores the water management initiatives in two major catchments, namely the Rhine River Delta (RRD) in Europe and the Pearl River Delta (PRD) in China. The analysis compares their catchment characteristics, perceived issues, legal and administrative instruments, and the effectiveness of their water management initiatives.

The paper emphasizes the critical importance of proper water management for the survival of communities worldwide. The article aims to compare the water management strategies of the Rhine and Pearl River catchments, despite their geographical and contextual differences. It touches upon the impact of economic reforms in China, leading to significant global market penetration and local policy shifts in production. The article introduces the concept of IWRM, emphasizing a shift from sectoral approaches to an integrated, management-based strategy. The IWRM approach considers natural aspects, sectoral interests, stakeholders, spatial and temporal variations, policy frameworks, and institutional levels.

The study evaluates the water management in the Rhine River Delta, highlighting the improvements achieved through initiatives and current programs. It notes challenges related to industrial and agricultural use, energy generation, municipal wastewater disposal, and the resultant impacts on water quality, river ecology, and flooding. The legislative measures in the European context, such as the Water Framework Directive, are outlined, showcasing a shift towards integrated water resources

management (IWRM). The study highlights the success of the Rhine Action Plan in integrating ecological and water quality goals, emphasizing the importance of clear ecosystem goals for successful river management. The RAP's open and effective assessment system, along with quality objectives for key assets, serves as a model for integrated water management.

The next section transitions to the Pearl River Delta, emphasizing its dynamic economic growth but also the negative environmental consequences, including pollution, resource pressure, and habitat loss. The analysis focuses on the Dongjiang, a vital drinking water source for millions, and reviews existing water policy programs. The article acknowledges challenges in policy implementation, emphasizing the need for a cross-sectoral approach to address economic, social, and environmental considerations comprehensively.

Contrasting with the success in the Rhine, the article identifies challenges in the PRD, including pollution from rapid industrial development, population growth, and inadequate wastewater management. It points out shortcomings in legislation and policy implementation, hindering effective water resources management. Francesch suggests measures for the PRD, including stepping up research efforts, adopting an integrated approach to water management, prioritizing sustainability, establishing a joint political or administrative body, implementing effective legislative systems, and using market mechanisms to reflect the true cost of water.

The article concludes by emphasizing the need for integrated water management globally and the potential benefits of learning from successful initiatives like the Rhine Action Plan. It calls for seizing the initiative in the current political climate to ensure long-term benefits for the global environment and its citizens.

Yr: 2002 Beyond the river: the benefits of cooperation on international rivers:

Claudia, Sadoff and David, Grey:

Paper Synopsis

International rivers can elicit cooperation or conflict. The choice between the two will in large part be determined by perceptions of their relative benefits. In this paper, we explore the dynamics that drive the choice between conflict and cooperation, and present a simple framework for examining the extent of potential benefits that could underlie these choices. The paper seeks to broaden the range of perceived benefits, as some are obvious and some are much less apparent. The framework categorizes four types of cooperative benefits. First, cooperation will enable better management of ecosystems, providing benefits to the river, and underpinning all other benefits that can be derived. Second, efficient, cooperative management and development of shared rivers can yield major benefits from the river, in increased food and energy production, for example. Third, cooperation on an international river will result in the reduction of costs because of the river, as tensions between co-riparian states will always be present, to a greater or lesser extent, and those tensions will generate costs. And finally, as international rivers can be catalytic agents, cooperation that yields

benefits from the river and reduces costs because of the river can pave the way to much greater cooperation between states, even economic integration among states, generating benefits beyond the river. While each of these four types of benefits could potentially be obtained in all international river basins, the extent and relative importance of each type will vary greatly between basins, reflecting a wide range of political, geographic, economic and cultural circumstances. In some cases, the scale of benefits may not justify the costs of cooperative actions, in others the sum of benefits could be very high. The paper concludes that identifying and understanding the range of often inter-related benefits derived from the cooperative management and development of international rivers is central both to better management of the world's rivers, and to relations among the nations sharing those rivers.

Tag

Inter-linking Rivers, cooperation, World Bank, International Rivers.:

Annotation

Claudia Sadoff was the first Executive Managing Director of CGIAR, the world's largest publicly funded research organization committed to the sustainable and equitable transformation of food, land and water systems. David Grey is a Sr. Knowledge and Learning at the World Bank.

This paper delves into the intricate dynamics influencing the decision between cooperation and conflict over international rivers, emphasizing that this choice hinges significantly on the perceived advantages involved. The study proposes a straightforward framework designed to assess the potential benefits underlying these decisions, aiming to expand the scope of recognized advantages, encompassing both obvious and less apparent ones.

The framework identifies four categories of cooperative benefits. Firstly, cooperation is seen as essential for improved ecosystem management, thereby benefiting the river and forming the basis for other potential advantages. Secondly, collaborative efforts in the effective management and development of shared rivers are deemed capable of yielding substantial benefits, such as increased food and energy production. Thirdly, international river cooperation is viewed as a means to reduce costs associated with inevitable tensions among riparian states, which may vary in intensity. Finally, recognizing international rivers as catalysts, cooperation leading to benefits and cost reduction can pave the way for broader state cooperation, potentially even fostering economic integration, resulting in benefits extending beyond the river.

The paper underscores that while these four types of benefits could be applicable to all international river basins, their extent and relative significance depend on diverse political, geographic, economic, and cultural factors. The scale of benefits may not always justify cooperative actions' costs in some instances, while in others, the cumulative benefits could be substantial. The conclusion highlights the pivotal role of identifying and comprehending the range of interconnected benefits arising from cooperative management and development

of international rivers, not only for enhanced river management but also for fostering amicable relations among nations sharing these vital waterways.

Yr: 2002 The Rhine: An Eco-Biography, 1815–2000:

Cioc, Mark:

Paper Synopsis

The Rhine River is Europes most important commercial waterway, channeling the flow of trade among Switzerland, France, Germany, and the Netherlands. In this innovative study, Mark Cioc focuses on the river from the moment when the Congress of Vienna established a multinational commission charged with making the river more efficient for purposes of trade and commerce in 1815. He examines the engineering and administrative decisions of the next century and a half that resulted in rapid industrial growth as well as profound environmental degradation, and highlights the partially successful restoration efforts undertaken from the 1970s to the present. The Rhine is a classic example of a multipurpose river -- used simultaneously for transportation, for industry and agriculture, for urban drinking and sanitation needs, for hydroelectric production, and for recreation. It thus invites comparison with similarly over-burdened rivers such as the Mississippi, Hudson, Colorado, and Columbia. The Rhines environmental problems are, however, even greater than those of other rivers because it is so densely populated (50 million people live along its borders), so highly industrialized (10% of global chemical production), and so short (775 miles in length). Two centuries of nonstop hydraulic tinkering have resulted in a Rhine with a sleek and slender profile. In their quest for a perfect canal-like river, engineers have modified it more than any other large river in the world. As a consequence, between 1815 and 1975, the river lost most of its natural floodplain, riverside vegetation, migratory fish, and biodiversity. Recent efforts to restore that biodiversity, though heartening, can have only limited success because so many of the structural changes to the river are irreversible. The Rhine: An Eco-Biography, 1815-2000 makes clear just how central the river has been to all aspects of European political, economic, and environmental life for the past two hundred years.

Annotation

The book by Marc Cioc engages with the environmental history of Europe by producing a comprehensive account of the transformation of the Rhine River from the state of ‘anarchy’ to today’s celebrated instance of a ‘restored river’ and commercially the most important one in the entire Europe.

The book begins with one of the most important observations—where the author portrays the Rhine as “an offspring of the French and industrial revolutions. The statement partly explains at once both the political importance of the Rhine in contemporary European history and international relations and the ecological problems associated with it. In particular, the book presents the detailed history of the Tulla rectification project that shaped the river significantly through a series of rectification works for flood control,

navigational improvement, land reclamation, or hydroelectric power generation. On the flip side, the increased international competition and cooperation to maximize the benefit of trade and commerce over the Rhine impacted the downstream nations and the overall ecological health of the river. The role of institutions such as the Central Commission for the Navigation of the Rhine (CCNR) and its influence over the Rhine have also been illustrated.

The various chapters, through extensive archival research, document the various influential actors. contributing to the Rhine Pollution—from chemical, hydroelectric power, petrochemical, and nuclear industries to dam associations and water cooperatives for commercial purposes. These instances eventually led to the chapter on the decline in biodiversity on the Rhine that culminated in the 'collapse' of the fish stocks during the 1950's.

Cioc's analysis of the multiple Rhine Phases further links the Rhine to the various pulls of the broader processes of nation-building, the advent of global capitalism, environmental exploitation, and finally cooperation for river restoration. The book is also a good reference to understand the dynamics of the multiple institutions—each with its own unique goals, objectives, and influence—that shaped the river's hydrology and politics in the various phases.

The written book will prove valuable for both scholars and students of environmental and modern European history.

Yr: 2001 Ecological rehabilitation of the Dutch part of the River Rhine with special attention to the fish:

Raat, Alexander J.P.:

Paper Synopsis

The River Rhine has suffered severely from pollution and stream regulation over the last two centuries. Industrial effluents and municipal wastewater have imposed pollutant loads, and major engineering works for drainage and navigation have changed the ecological condition of the river. Only during the last three decades has the rehabilitation of the river system been a topic of concern. The present fish fauna is dominated by eurytopic cyprinids. Rheophilous species have declined in numbers, and anadromous fish have become scarce or extinct. Various forms of ecological rehabilitation in the Dutch Rhine are identified: floodplain development; optimization of migration routes with emphasis on the entrance of migrating species from the sea into the river; and restoration of spawning and nursery areas. Ecological restoration of the Rhine is an international effort. The present socio-economic functions of the river pose serious constraints on the feasibility of ecological targets.

Annotation

This comprehensive article by Alexander J.P. Raat (*Organisatie ter Verbetering* 6*an de Binnen*6*isserij)* delves into the critical issue of ecological rehabilitation in the Dutch segment of the River Rhine, with a focus on the aquatic ecosystem and the

challenges posed by historical pollution and stream regulation. Over two centuries, the Rhine has been subjected to severe environmental stressors, including industrial effluents and municipal wastewater, resulting in heightened pollutant loads. The adverse impact of major engineering projects aimed at drainage and navigation has further altered the river's ecological conditions. The author notes that only in the last thirty years has there been a concerted effort to address the rehabilitation of the Rhine.

The article highlights the decline of rheophilous species and the alarming scarcity or extinction of anadromous fish. Key initiatives for ecological rehabilitation are identified, encompassing floodplain development, optimization of migration routes, and the restoration of spawning and nursery areas. It is emphasized that the ecological restoration of the Rhine is a complex, international endeavor, with the Rhine Action Programme being a pivotal response to a catastrophic incident in 1986, where 10–30 tons of plant-protecting agents were discharged, causing a massive fish kill, particularly of eels. The author discusses the Rhine Action Programme's objectives, spanning sustainable development of the entire Rhine ecosystem, ensuring safe Rhine water for drinking purposes, improving sediment quality, and enhancing the North Sea's environmental conditions.

The article sheds light on the socio-economic challenges complicating the feasibility of ecological targets. The Rhine's crucial role in sustaining economic activities, such as drinking water production, navigation, and sediment management, poses serious constraints on restoration efforts. Hydrography and historical development of the Lower Rhine are explored, providing insights into the river's natural state in the early Middle Ages and subsequent alterations due to agricultural development, dyke construction, and

floodplain enclosure.

A detailed examination of water quality discusses the composition of river bottoms, sediment transport, and the persistence of pollutants, such as micropollutants, toxins, and heavy metals. The ecological quality of the Dutch part of the Rhine is critically assessed, highlighting the lingering contamination in sediments despite reductions in surface water pollutants.

Fish-related research and management strategies are discussed, including habitat improvement, fish migration facilitation, and the need for international collaboration to rehabilitate spawning and nursery grounds for migrating species like Atlantic salmon and sea trout. In conclusion, the article provides a nuanced exploration of the multifaceted challenges and efforts associated with the ecological rehabilitation of the Dutch part of the River Rhine.

Yr: 2001 Situation Structure and Institutional Design: Reciprocity, Coercion, and Exchange:

Mitchell, Ronald B. and Keilbach, Patricia M.:

Paper Synopsis

[States experiencing negative externalities caused by other states' behaviors have

incentives to devise international institutions to change those behaviors. The institutions states create to counter incentives to defect vary in whether and how they expand institutional scope to accomplish that goal. When facing symmetric externalities, states tend to devise narrow institutions based on issue-specific reciprocity. When facing asymmetric externalities, or upstream/downstream problems, states tend to broaden institutional scope using linkage strategies. When victims of an externality are stronger than its perpetrators, the resulting institutions, if any are devised, are likely to incorporate the negative linkage of sanctions or coercion. When victims are weaker, exchange institutions relying on the positive linkage of rewards are more likely. We illustrate the influence of situation structure on institutional design with three cases: international whaling, ozone-layer depletion, and Rhine River pollution.]

Annotation

This article Unpacks the Rhine Chloride Pollution Issues from the point of view of the assyemmetric upstream downstream relations. It argues how navigation and trade interdependencies created enabling conditions and has the potential to tranform assymetrical externalities towards coopertion. For instance, prohibition of navigation that hurts both states is one of the rare non-coercive ways of developing up/downstream treaties, as was evident on the Rhine Choloride pollution case.

Yr: 2001 The EU water framework directive: measures and implications:

Kallis, Giorgos and Butler, David:

Paper Synopsis

The new EU water framework directive is concisely and critically presented. The directive institutionalises ecosystem-based objectives and planning processes at the level of the hydrographic basin as the basis for water resource management. Whereas fulfillment of the ultimate objective of a "good" overall quality of all waters is questionable in terms of the high costs entailed and the lack of adequate legal enforceability, the directive will transform water institutions and planning processes, generate information and ensure no further deterioration of waters. The directive, affecting 27 countries, marks an important trend towards an ecosystem-based approach for water policy and water resource management.

Tag

EU water policy, Water framework directive, Water legislation:

Annotation

This paper, co-authored by Giorgos Kallis (of University of the Aegean, Greece) and David Butler (of Imperial College of Science, Technology & Medicine, London), conducts a thorough examination of the European Union Water Framework Directive (WFD), providing a critical analysis of its objectives, measures, criticisms, prospects of implementation, and broader implications. The WFD

signifies a substantial shift in EU water policy, introducing an ecosystem-based approach to water resource management with a focus on hydrographic basins as the foundational unit for planning

The WFD represents a significant shift in EU water policy, introducing an ecosystem-based approach to water resource management. The directive emphasizes hydrographic basins as the foundational unit for planning and sets out to achieve a ''good'' overall quality of all waters, reflecting a commitment to preventing further deterioration of water quality.

The paper is structured to address specific aspects of the WFD. Section 2 provides a historical overview of EU water policy, revealing the limitations of previous directives and the need for a more integrated framework. The subsequent sections delve into the details of the WFD, outlining its goals and measures, such as the focus on river basin planning, pollution-control measures, and the aim to attain a ''good'' ecological and chemical quality status for surface waters and groundwater.

Issues of concern are highlighted, including the regulation of hazardous substances and groundwater protection. The conciliation negotiation between the European Parliament and Council brought these issues to the forefront, and criticisms are outlined, particularly concerning the disjointed approach to water resource management and potential weakening of existing groundwater standards. The text acknowledges the importance of the directive in promoting ''sustainable water use'' but points out the lack of explicit targeting of ''quantitative'' aspects of water resource management, raising concerns about the directive's effectiveness in addressing water quantity.

A significant portion of the paper is dedicated to the costs, enforceability, and prospects of implementation. The text anticipates high financial costs in administrative, monitoring, and intervention-related categories, with a specific focus on the challenges in countries with limited monitoring capacity. The enforceability of the directive is scrutinized, noting legislative loopholes that could be exploited by unwilling Member States to avoid implementation and reduce expectedly high costs. The changing political context of EU politics and the emphasis on subsidiarity and decentralization are recognized as influential factors in the implementation of such an ambitious directive.

The directive's institutional significance is underlined, describing it as a milestone in water resource management that institutionalizes ecosystem objectives as the prime consideration for policy decisions. The paper acknowledges the potential transformation in water management practices, with conservation options benefiting from a broader consideration of costs and benefits, including environmental criteria. However, the wide derogations maintained raise questions about the practical impact at the ground level.

The paper concludes by summarizing the broader implications of the directive, including its influence on EU Member States and pre-accession countries. It emphasizes the institutionalization of ecosystem-based objectives, the revival of

the river basin approach, the prioritization of environmental efficiency, and the evolving trend towards ''user-pays'' regimes for water cost recovery. The potential for the WFD to serve as a reference for other countries in reforming their water policies and institutions is highlighted, contributing to wider international developments in water resource management.

Yr: 2001 Development of Flood Management Strategies for the Rhine and Meuse Basins in the Context of Integrated River Management:

Asselt, M. B. A., Middelkoop, Hans, Deursen, W. P. A., Haasnoot, M., Kwadijk, Jaap, Buiteveld, H., Konnen, G. P., Rotmans, Jan, Gemert, N. and Valkering, P.:

Annotation

The report outlines the development of flood management strategies for the Rhine and Meuse basins within the context of integrated river management. The initiative is part of the IRMA-SPONGE Umbrella Program, a comprehensive effort involving over 30 European scientific and management organizations. Managed by the Netherlands Centre for River Studies (NCR), the program aims to enhance knowledge supporting flood risk management.

The overarching goal is to develop integrated and robust water management strategies, considering uncertainties arising from climate change, socio-economic factors, and modeling intricacies. The report emphasizes the need for strategies that remain valid even if underlying assumptions change. This approach, termed robust, explicitly incorporates uncertainty analysis into the formulation of flood management strategies.

The project adopts the Perspectives Method as a structured framework for analyzing uncertainties. This method categorizes viewpoints into Egalitarian, Hierarchical, and Individualistic perspectives, providing insights into worldviews and management styles. Egalitarian management is deemed the most robust, emphasizing safety and nature but at a higher cost. Hierarchist management aims for win-win situations but may face challenges in a changing environment. Individualistic management is characterized as high-risk, cost-efficient in the short term but vulnerable to external uncertainties. Utopias and Dystopias associated with each perspective are explored, considering potential future pathways and mismatches between worldviews and management styles.

The report underscores the importance of an integrated approach, combining social sciences with environmental sciences and involving stakeholders in scenario development. It evaluates current water management practices in the Netherlands, Germany, and Belgium, highlighting the limited availability of comprehensive surveys for long-term future developments in the latter two countries. The analysis reveals that the Netherlands predominantly follows a Hierarchist management style, while Germany and Belgium exhibit characteristics of an Individualistic style.

Conclusions and recommendations highlight the complexity of flood risk management, emphasizing the necessity of integrating water management and spatial planning. The report advocates for ongoing

evaluation, adaptation, and a conscious combination of expert sessions, participatory processes, and model experiments. It acknowledges the political nature of choosing management styles and the need for further research to address interdisciplinary challenges.

Yr: 2000 Transboundary cooperation in shared river basins: experiences from the Rhine, Meuse and North Sea:

Pieter, Huisman, Joost de, Jong and Koos, Wieriks:

Tag

Institutions, Laws/Treaties/Agreements, Governance, Political Aspect, Transboundary Cooperation:

Annotation

This paper outlines eight key lessons learned based on experiences of international transboundary cooperation in the Rhine, Meuse, and the North Sea. The authors – which include one former Secretary General of the International Commission for the Protection of the Rhine (ICPR) and one, at the time of writing, sitting Secretary General of the ICPR – present these lessons as statements which they then substantiate with historical and practical examples. They begin the paper by providing a brief geographical and demographic overview of the Rhine, Meuse, and the North Sea. They also briefly touch upon the history of transboundary cooperation in the region going back to when international cooperation on the Rhine started in 1815 on navigation to the adoption of the Rhine Action Programme (RAP) and the North Sea Action Plan (NAP) in 1987 and 1988 respectively.

The key lessons learnt which the authors highlight are as follows: voluntary decisions are crucial in creating sustainable cooperation on an international level; the promotion of individual and sectoral interests adversely impacts other interests and may cause considerable damage to the entire ecosystem as was seen in the case of the Rhine where the focus on navigation and hydropower negatively impacted the fish population, particularly salmon, in the basin; any cooperation in transboundary river basins is "a time-consuming process of small steps" which can only be sustained by mutual confidence; disasters with international impacts are an opportune moment for strengthening transboundary cooperation as experienced by the Rhine basin states in the aftermath of the Sandoz spill of 1986; transboundary policies for river basins should also be harmonised with the policies for the protection of the recipient seas; legal frameworks aid in tackling transboundary problems and to structure common activities; agreement over and adoption of standardised measurement methods is critical for achieving the reduction of pollution in shared waters; and lastly, periodical assessment of plans provides an opportunity to adapt objectives and measures to the changing conditions and public opinions. The authors corroborate all these lessons with historical and practical examples from the Rhine, Meuse, and the North Sea.

This paper is useful for a quick study of the historical trajectory of international transboundary cooperation in the Rhine, Meuse, and the North Sea with more focus

on the Rhine and it can help to "recognise and analyse the situation in other transboundary river basins and seas." It is also useful in understanding the role of the ICPR in this process and it provides an organogram of the ICPR as well to better understand its structure and day-to-day functioning.

Yr: 2000 Successes in the international cooperation in the rhine catchment area:

Carel, Dieperink:

Paper Synopsis

The regime to control the water quality of the river Rhine is widely rated as successful. This article reviews the history of the riparian cooperation. This cooperation was promoted by the policies of the downstream Dutch government, the activities of NGOs, the efforts of upstream riparian states, and by the activities of the International Rhine Commission. The gradual improvement of the water quality also assisted in the progressive regime development. The case of the river Rhine illuminates the importance of an appealing strategic vision to promote international river catchment management.

Tag

Institutions, Governance, Treaties/Agreements, Political Aspect, Climate Change, Coordination between upstream and downstream riparian states, Role of the Dutch government, Presence/Creation of an organisation like IRC, National research organisations working together:

Annotation

This article, authored by a Professor at Utrecht University, The Netherlands, and based on the author's Ph.D. research, discusses the factors which lead to the development of an international regime for the Rhine while centering the role of the Dutch government and Dutch environmental groups in the process. It also acknowledges the contributions of the upstream riparian states and the activities of the International Rhine Commission (IRC) which aided cooperation on the Rhine.

The conversation around the water quality of the Rhine had been ongoing since the late 19th century and the main reason for this was the decline of the salmon population in the catchment area of the river. This was due to "overfishing, the construction of dams in the region of the Alsace, and the decline of water quality." The decline of the water quality and the increasing levels of pollution pushed the Dutch drinking water companies to initiate contact with the upstream riparian states which resulted in the beginning of informal consultations. These consultations acquired a formal structure through the Treaty of Bern of 1963 as this Treaty outlined the "composition and jurisdiction of the IRC." Subsequent negotiations within the IRC lead to the Rhine Chemicals Treaty and the Rhine Salt Treaty. Both these treaties were the result of protracted negotiations and compromises between the downstream and upstream riparian states. The Dutch government, being the downstream riparian and at the receiving end of the adverse impact of the pollution caused by the upstream riparian states, played a pivotal role in the negotiation for these treaties and

the development of a progressive international regime. Along with the Dutch government, the Dutch interest groups also played a critical role in the creation of the Rhine regime, particularly RIWA and Reinwater – both of which initiated several lawsuits against the French potassium mines in the 1980s.

The author also acknowledges the role of Germany and Switzerland in starting legislative initiatives, implementing clean-up measures, and carrying out research to restore the water quality of the Rhine. The initiatives of the Dutch government followed in the footsteps of these two progressive riparian states. The pivotal role played by the IRC is also given due credit by the author. Dieperink attributes the development and exchange of knowledge concerning the water quality of the Rhine to the IRC and its Secretariat which filled in the gaps in the knowledge base and provided a forum to discuss and strategise solutions.

Overall, this paper provides a useful trajectory for the factors which lead to the successful development of an international Rhine regime. It is particularly helpful to understand the Dutch perspective and contribution in the improvement of the water quality of the Rhine.

Yr: 1999 Anarchy, hegemony, cooperation: international control of the Rhine River, 1789–1848:

Spaulding, Robert Mark:

Annotation

Robert Mark Spaulding is a Professor University of North Carolina Wilmington who specialises on Germany; European Political Economy; Global Trade. His work on the historical and institutional evolution of the Central Commission for the Navigation of the Rhine (CCNR) and its influence on European integration are well archived in the official CCNR website.

The author here traces the contexts and conditions under which the governance pertaining to navigation on Rhine were deeply fractured and by 1789 and river commerce was severely restricted on account of various tolls and other barriers owing to the monopolies of the major cities along the Rhine over trade matters - the author terms it as 'the phase of anarchy'. In the subsequent phase the French domination under Napolean largely transformed the trade regime over Rhine. Under the 'hegemonic' French power the in 1804 'Octroi of the Rhine' was signed between French and the German Empire that reformed the previous 'anarchic' state of the Rhine by rationalizing the complex toll and other barriers and further administered by an innovative model of joint Franco-German institution covering Rhine from the Switzerland to the Dutch border. These reforms elevating Rhine's trade and commerce eventually set the precedent for a consensus and collective action towards maintaining a 'unified' regulatory system during the negotiations of Congress of Vienna by other sovereign states the author documents in detail the various positions and power relations among the states during negotiations over Rhine navigation during the congress- in particular the decisive role played by the erstwhile Prussian diplomat Wilhelm von Humboldt in furthering the unified regime

for Rhine. The phase following year with the victory of the allied power also marks the starting phase of the 'cooperation' that eventually culminated into the formation of CCNR.

The article discusses the international development of three distinct and inter-related phases that made it crucial and ineveitable for the great European powers to cooperate on the Rhine Navigation.

Yr: 1999 The Modern Bequest of a Dying Empire : The Rise of Joint Management of the Rhine River:

Spaulding, Robert Mark:

Tag

Joint River Management, Rhine, commercial regime:

Annotation

Robert Mark Spaulding teaches in the Department of History at the University of North Carolina at Wilmington.

This article provides a concise analytical narrative tracing the evolution of the commercial regime along the Rhine River from the 17th century to the mid-19th century, with a particular focus on the transformative period from 1798 to 1815. During these years, the states bordering the Rhine underwent significant changes in the rules and institutions governing commerce on the river. It mentions 3 sections i.e., firstly, a discussion of the topic within the context of recent suggestions for future research on the Napoleonic era; secondly, a brief analytical overview of the institutional developments on the Rhine; and thirdly, the application of conclusions drawn from the Rhine case to broader questions concerning the Napoleonic experience in the "Third Germany."

Yr: 1999 A watershed on the Rhine: Changing approaches to international environmental cooperation:

Marco, Verweij:

Paper Synopsis

Since the 1950s, the governments of the riparian countries of the Rhine have attempted to protect the ecosystems of the river basin through international cooperation. Before 1987, their relations were unproductive and antagonistic. International programs for the protection of Rhine were far less effective than domestic policies. From 1987 onwards, international cooperation on the protection of the Rhine has been exemplary, and has led the way in domestic and international water protection policies. Many existing frameworks of international relations are not able to offer an adequate account of this wholesale change. In this article, an attempt is undertaken with the help of grid-group theory.

Tag

Institutions, Treaties, Governance, Political Aspect, IR Theories, International Cooperation, Grid-Group Theory, Cultural Theory, Rhine:

Annotation

The author begins this article by posing a

puzzle wherein he explores the reason behind the sudden shift in the intergovernmental relations concerning the environmental protection of the Rhine from being hostile and uncooperative to being friendly and extensive. He attempts to solve this puzzle by using the theoretical framework of cultural or grid-group theory as he believes traditional theories of international relations such as neorealism and neoliberalism incapable of fully explaining this shift.

Verweij takes 1987 as the watershed year which marked the shift in the intergovernmental cooperation on the Rhine. As a start, he gives a brief history of the Rhine and the causes which lead to the environmental degradation of its ecosystems. He then goes on to focus on the international cooperation on the Rhine in two phases – before and after 1987. He felt that before 1987, the Rhine basin states were trying to solve a transboundary problem domestically and, in the process, failing to arrive at any conclusive international agreements. The International Commission for the Protection of the Rhine (ICPR) had been established but it did not have any power to enforce any of its suggestions and the clauses of various international treaties went through protracted negotiations and once signed, were stuck in the process of ratification and implementation. At the same time, the Rhine basin states were faring quite well on the domestic front in dealing with the pollution of the Rhine. The author believes these contrasting developments at the international and domestic level are poorly explained by traditional approaches to study international relations. Therefore, he uses an alternative approach – grid-group theory – to examine this dichotomy.

Grid-group theory distinguishes among four different ways of life upon which social groups can rely – hierarchy, individualism, egalitarianism, and fatalism. Verweij argues that the shift in the international cooperation on the Rhine can be perceived as "a shift from a hierarchical approach to international cooperation to an individualistic approach." Before 1987, the hierarchical approach favoured by the involved government ministries, and the obstacles it created for international cooperation, stand in stark contrast to the events since the occurrence of the infamous Sandoz accident in November 1986. The Sandoz accident forced the Rhine basin states to act with a sense of urgency and provided an impetus to arrive at a working solution to the protection of the Rhine. It spurred the Dutch government to hire a team of consultants from McKinsey-Amsterdam to outline "a comprehensive international agreement on the restoration of the Rhine basin, and to build up the necessary intergovernmental support for this plan." This plan prepared by McKinsey was endorsed at a Ministerial Rhine Conference in 1987 and was adopted by the governments under the name "Rhine Action Programme (RAP)." This programme proved to be hugely successful and changed the course of the international cooperation on the Rhine. Verweij believed that a large part of its success can be attributed to its unique and individualistic approach to international cooperation.

In the case of the Rhine, the two contrasting approaches to international cooperation – hierarchical and individualistic – are clearly illustrated by its history. Before 1987, the hierarchical approach held sway among the involved parties but after the Sandoz

accident, the plans to protect the Rhine were a successful mix of hierarchical plans at the domestic level and practical and individualistic plans at the international level and Verweij concludes that grid-group theory is better suited to explain this shift and both the domestic and international behaviour of the involved actors.

Yr: 1999 Evolution of EU water policy: a critical assessment and a hopeful perspective:

Kallis, Giorgos and Nijkamp, Peter:

Tag

U Water Policy, Evolution, Directives, Governance, Implementation.:

Annotation

Giorgos Kallis - Universitat Autònoma de Barcelona, Institute of Environmental Science & Technology (ICTA), Faculty Member.

Peter Nijkamp - Dutch economist, Professor of Regional Economics and Economic Geography at the Vrije Universiteit, Amsterdam, the Netherland.

This paper aims to critically explore the evolution and ongoing debates surrounding the EU's water policy, shedding light on the diverse and sometimes conflicting forces and principles that influence the formulation of EU environmental policy. The historical development of EU water policy is traced, and major issues from each period are analysed. The discussion then shifts to the current proposed framework directive for water, serving as a benchmark for the European Union's environmental policy approach in the early 21st century. The directive is examined by analysing the complex interplay of issues and actors at the European level and how they manifest in the chosen regulatory approach. The paper concludes by assessing the prospects of the directive. The objectives are threefold: first, to provide a comprehensive overview of the state and nature of the EU's water policy; second, to analyse the representation of various issues and philosophies within it; and third, to illustrate how this policy is formulated in the political arena of European institutions, thereby enhancing understanding of its character, effects, and limitations.

The European Commission's new model of environmental policy, as outlined in the framework directive, appears, at least on paper, to present an innovative and intelligent redefinition of the EU's role. The EU now takes on the responsibility of establishing general objectives to be met by its Member States and devises common mechanisms for their achievement, refraining from specifying exact standards unless they are critical for public health purposes. This approach successfully combines subsidiarity and environmental protection through decentralized, tailor-made actions at the local level. However, past implementation experiences do not instill optimism regarding the actual outcomes of such an approach, particularly considering the reluctance, especially among poorer Member States, to bear the full costs of necessary environmental improvements when the time comes.

Yr: 1999 The European Union Water Framework Directive: Taking European Water Policy into the Next Millennium†:

Blöch, H.:

Paper Synopsis

The European Union is currently thoroughly restructuring its water policy. A proposal by the European Commission for a Water Framework Directive is currently being negotiated at the European Parliament and the Council of Ministers. This legislation will have the following main objectives:• expanding the scope of water protection to all waters, surface waters and groundwater• achieving "good status" for all waters by a certain deadline• water management based on river basins• "combined approach" of emission limit values and quality standards• getting the prices right• getting the citizen involved more closely• streamlining legislationThe progress on negotiating the future European water legislation seems to indicate a final adoption in 1999.

Annotation

The author H. Bloch, Directorate General (Environment) of the European Commission, briefly explains in the article the objectives of the restructuring of the EU Water Policy and negotiations at the European Parliament and the Council of Ministers regarding the adoption of the EU WFD.

The document in parts gives a brief introduction to: 1. The 'first wave' of European environmental legislation that set binding water quality standards for drinking water. 2. The "second wave' focused on controlling emissions from urban wastewater (Urban Waste Water Treatment Directive) and reducing agricultural pollution (Nitrate Directorate).

The initial two 'waves' of legislation, however, were limited in their outcomes, and there was increased pressure from the various European actors to fundamentally rethink the 'community' (European Community) water policy. The European Commission—the executive wing called for extensive consultation with all stakeholders—the notable being the Water Conference in May 1996, hosted by EU Environment Commissioner Ritt Bjerregard and attended by 250 delegates comprising representatives of Member States, regional and local authorities, enforcement agencies, water providers, industry, agriculture, and, not least, consumers and environmentalists.

The article attempts to briefly present the objectives that were considered by the EC after extensive consultation. In conclusion, the DG Environment of the EC suggested the importance of seizing the political opportunity that emerged during the deliberation for the adoption of the EU WFD for a complete transformation of the EU's water management.

Yr: 1998 From open sewer to salmon run: lessons from the Rhine water quality regime:

Carel, Dieperink:

Paper Synopsis

The international regime for the River Rhine is widely considered to be unique. In this article, the author draws some lessons from

the regime's development. These are related to two distinct strands in the literature. The first can be summarized under the heading of regime theory. It comprises studies dealing with the development of international regimes concerning water quality. These studies view the evolution of any such regime as determined by features of the issues in the light of relevant societal values and the role of transnational interest groups, scientific analysis and progress and the potential for interstate interaction. The second strand comprises aspects of negotiation theory. Its relevance suggests that there are options for trade-offs and that those options can have a positive impact. In addition, this literature helps to identify tactics that may be available to the negotiating parties. Most of these factors have had a positive impact. On the basis of an analysis of the historical development of the Rhine regime, this study elaborates upon three conditions that have had a positive impact on the development of the regime: the presence of an alert, creative and convincing party downstream; the existence of good international relations throughout the catchment area; and the presence of an international river commission, which could generate and disseminate information as well as facilitate negotiations among the riparian states.

Tag

Institutions, Governance, Political Aspect/IR, Regime Theory, Negotiation Theory, Transboundary Conflict, Creation/presence of a neutral organisation:

Annotation

Carel Dieperink, (of Utrecht University), explores the unique and successful international regime governing the River Rhine's water quality. The paper identifies three crucial conditions that have positively influenced the Rhine regime's progress: the presence of an active and convincing downstream party, good international relations across the catchment area, and the existence of an international river commission facilitating negotiations among riparian states. Dieperink emphasizes how these factors align with regime and negotiation theories, contributing to the success of the Rhine regime.

The article explores the complexities and dynamics of negotiations over the Rhine's water quality, highlighting the Dutch government's role in seeking a strict regime and the flexibility demonstrated due to improved water quality. It discusses factors that slowed down the regime's progress during specific periods, emphasizing the importance of problem symmetry, societal values homogeneity, and options for trade-offs.

The conclusion underscores the importance of downstream governments being active and well-equipped, homogeneity among riparian states, and the role of a catchment area organization in promoting successful regime development. Hence, this article provides a comprehensive analysis of the lessons learned from the development of the Rhine water quality regime, offering insights into the factors influencing successful transboundary water management.

Yr: 1997 Integrated water management for the Rhine river basin, from pollution prevention to ecosystem improvement:

Koos, Wieriks and Anne, Schulte-Wülwer-Leidig:

Paper Synopsis

The river Rhine has been in humanity's use for many centuries for a variety of activities. However, in our time, considerable changes in the course and the natural conditions of the river and the increasing use of the river for the discharge of wastewater has caused serious floods and major ecological problems. Since 1950, the International Commission for the Protection of the Rhine (ICPR) acts as the coordination point between the states bordering the Rhine for the development of programmes for river protection. The Sandoz disaster in 1986 was a turning point in the approach of the ICPR and the starting point for the present strategy of integrated riverbasin management. Recent developments have indicated the success of the current approach.

Annotation

The paper, by Koos Wieriks and Anne Schulte-Wulwer-Leidig, explores the historical and contemporary challenges faced by the Rhine River, emphasizing the crucial role of the International Commission for the Protection of the Rhine (ICPR) in coordinating collaborative efforts among the riparian states for sustainable water management.

The authors provide a comprehensive historical context for the Rhine, portraying it not just as a waterway but as a fundamental element in European development. The river's evolution from a vital shipping route and source of sustenance to a hub for industrialization sets the stage for understanding the multifaceted challenges it faces today, particularly due to wastewater discharge, resulting in floods and ecological imbalances that necessitated a coordinated international response.

Established in 1950, the ICPR emerges as a pivotal entity in the quest for effective river basin management. Despite initial challenges and a slow start, the ICPR gained momentum over the years, evolving structurally and functionally to become a key coordinator between the riparian states**. The incorporation of the European Commission in 1976 further strengthened the ICPR, positioning it as a collaborative force against Rhine pollution.

The Sandoz disaster in 1986 serves as a catalyst for change, prompting swift political attention and the formulation of the Rhine Action Programme (RAP) in 1987. The RAP, presented as a transformative strategy, marks a departure from conventional approaches by prioritizing integrated water management over reactionary solutions. It highlights how RAP aimed not only to tackle water quality issues but also to introduce ecological goals, as exemplified by the ambitious 'Salmon 2000' project.

The 'Salmon 2000' project's success becomes a testament to the effectiveness of international collaboration in translating political will into tangible ecological improvements. This success underscores the significance of integrating quantitative

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aspects into river management, broadening the scope from water quality to comprehensive water management.

The floods serve as a poignant reminder of the need for an integrated approach at the river basin level. The authors stress the necessity for ICPR to expand its institutional base to address contemporary challenges adequately. The imminent introduction of a new Rhine Convention is positioned as a crucial step in providing a legal framework for the evolving integrated water management approach.

In conclusion, the paper provides a detailed and insightful exploration of the Rhine River's journey from historical significance to contemporary challenges, highlighting the importance of flexibility, openness, and public support in shaping effective and sustainable water governance strategies. The narrative emphasizes the transformative role of ICPR, particularly through initiatives like RAP and 'Salmon 2000,' offering a valuable blueprint for international river basin organizations worldwide.

Yr: 1996 Federalism and the European Union: The Scope and Limits of the Treaty of Maastricht:

Wincott, Daniel:

Paper Synopsis

The Treaty of Maastricht should be understood as a political compromise in the process of European integration, rather than as a definitive legal document. This article analyzes the integrative and fragmenting elements of the Treaty and concludes that, on balance, it contains more of the latter than the former. In particular the Treaty may exacerbate the problems increasingly faced by the European Court of Justice, by forcing it to decide politically controversial cases. Nevertheless, the ability of the European institutions, particularly the Commission, to turn crises to their advantage means that the future of Europe remains uncertain. /// Le traité de Maestricht est un compromis sur le chemin de l'intégration européenne plutôt qu'un document législatif définitif. L'article distingue les aspects intégratifs et les aspects désagrégateurs du traité et conclut que, dans l'ensemble, ce sont les premiers qui dominent. Le traité risque d'exacerber les problèmes qui se posent à la Cour de justice en l'obligeant à prendre parti sur des sujets politiques de plus en plus controversés. Cependant, la Commission a toujours la possibilité de retourner à son avantage les crises occasionnées par ces sujets controversés. Les enjeux restent ouverts et les aboutissements sont encore incertains.]

Tag

European integration, Maastricht Treaty

Annotation

Auhor: Daniel Wincott is the Blackwell Law and Society Chair at Cardiff Law School, a position he has held since September 2008.

This article talks about the importance of the Scope and the limits of the Treaty of Maastricht which helps in establishing federalism in the EU. It gives an opinion that the Treaty of Maastricht, like all the treaties that have constituted and altered the European Community/Union, is a political compromise. This article aims to

differentiate aspects of the Treaty with integrative potential from those that may lead to the fragmentation of the Community. The primary conclusion drawn from this analysis is that, overall, the Treaty, along with developments in the two to three years following its agreement, appears fraught with challenges for the Community/Union system.

The Treaty of Maastricht, like its predecessors that have shaped and transformed the European Community/Union, is fundamentally a political compromise. It encapsulates elements from various and conflicting visions for the future of Europe, and it should be viewed as a step in an ongoing process of integration rather than a definitive representation of the Union's character. This article aims to identify aspects of the Treaty that foster integration and those that might contribute to the fragmentation of the Community.

Upon analysis, the primary conclusion is that, on balance, the Treaty, along with developments in the years following its agreement, presents challenges for the Community/Union system. The Court of Justice appears to confront particularly severe difficulties, potentially being tasked with adjudicating on politically sensitive issues in a manner that could compromise its judicial credibility. However, it would be premature to assert that some form of fragmentation within the Community is inevitable. Throughout history, European institutions have demonstrated adeptness in finding acceptable solutions to complex challenges. Whether they can continue this trend remains an open question.

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Yr: 1996 The River Rhine: from Equal Apportionment to Ecosystem Protection:

Nollkaemper, André:

Tag

Customary International Law, Sandoz, treaty regime, Failure.:

Annotation

André Nollkaemper is a Professor of Law BA, Antioch College; JD, University of California, Berkeley School of Law; PhD, University of Westminster.

The article talks about the development of the Rhine River Basin, the development of laws for pollution prevention, rehabilitation of ecosystems & the way to a new treaty that was signed in 1999. This article examines how far the current legal regime for the river Rhine has progressed in its transformation to a regime based on ecosystem protection. It discusses recent developments relating to pollution prevention and ecosystem restoration and identifies some unanswered questions to be faced in developing the new treaty.

Concerns over pollution's impact on human health and agriculture in the Netherlands and Germany prompted a revision of the Rhine River's regulatory framework. In 1950, riparian states established the informal International Commission for the Protection of the Rhine against Pollution (ICPR) to investigate pollution causes and effects. By 1963, they formalized the ICPR through a treaty and established a permanent secretariat. Over the decades, the ICPR has played a pivotal role in

addressing Rhine River pollution through international legal developments. Recent developments have further enhanced its effectiveness in protecting the Rhine's ecosystem and the interests of riparian states.

The Rhine River has faced persistent pollution challenges from industrial and agricultural sources, including direct discharges, accidents, pesticides, and nutrients, leading to complex and contentious legal efforts to address these issues, with chloride pollution being a particularly contentious problem.

The transformation from a free use of the Rhine to a more ecosystem-oriented approach has been strengthened by legal developments outside the framework of the ICPR. The most ambitious aspect of the Rhine ecosystem rehabilitation efforts involved reintroducing migratory fish species, such as salmon, sea trout, allice shad, sea lamprey, and sturgeon, to create a suitable habitat in the river by the year 2000, supported by the 1994 Ecological Master Plan known as 'Salmon 2000.'

The 11th Ministerial Conference recognized the need to transition from the non-legally binding Rhine Action Program (RAP) to a legally binding treaty to provide robust legal protection for the Rhine ecosystem. This Conference adopted 4 guidelines for the preparation of the treaty that are based partly on the Helsinki Convention

Yr: 1996 Western Europe's Artery: The Rhine:

De Villeneuve, Carel H. V.:

Paper Synopsis

This article covers the century-long attempts to come to terms with the pollution of the Rhine river by dangerous chemicals, chlorides and other adverse human impacts on its quality. It demonstrates how, little by little, the combined efforts of the adjacent countries have succeeded, even though there is still much to be done. It also addresses how the International Commission for the Pollution of the Rhine gradually extended—and is still extending—the scope of its activities from mere pollution control to an ecosystem approach of the catchment and to a more integrated management of water quality and quantity. It illustrates how, in 1986, decennia-long stagnation changed virtually overnight due to the Sandoz accident near Basel. Finally, it asserts the value of working with non-legally binding international policy agreements along with comprehensive regulatory standards.

Annotation

This article by Carel H.V. De Villeneuve examines the century-long efforts to address pollution in the Rhine River, focusing on dangerous chemicals, chlorides, and various human-induced impacts on water quality. It traces the collaborative endeavors of the riparian countries and the International Commission for the Protection of the Rhine (ICPR) in managing and restoring the ecological balance of the river. The narrative highlights pivotal moments,

such as the Sandoz incident in 1986, which catalyzed a paradigm shift in environmental policies.

The characterization of the Rhine as western Europe's largest river sets the stage for understanding the multifaceted challenges it faced post -World War II. The impacts of urban and rural wastewater, industrial effluents, and canalization are detailed, emphasizing the need for concerted international efforts to restore ecological harmony. The article underscores that individual riparian states could not independently address the complex interplay between human activities and ecological requirements.

Cooperation among Rhine states is explored, revealing a historical focus on specific issues like navigation and hydroelectric power. The establishment and evolution of the ICPR in 1963 emerge as a key turning point, formalizing collaboration and broadening the scope of activities beyond singular concerns. The inclusion of the European Economic Community (EC) in 1976 further strengthens the ICPR's influence, aligning with the EC's environmental legislation.

The article delves into specific challenges, such as chloride pollution, examining the protracted discussions and agreements that sought to mitigate its impact. The complex negotiations involving France, Germany, and the Netherlands, particularly in relation to acceptable water quality standards, demonstrate the intricate nature of transboundary environmental management.

The ICPR's role in addressing chemical pollution is scrutinized, with the Chemical Agreement of 1976 laying the foundation for supervising and reducing discharges of hazardous substances. The transformative moment of the Sandoz incident in 1986 serves as a catalyst for change, prompting the Rhine Action Programme. The article explores the ecological repercussions of the incident, the belated implementation of warning procedures, and the subsequent measures taken to restore the river's health. The Ministers' Conference decisions in the aftermath of the Sandoz incident, including the adoption of an "Ecological Master Plan," illustrate a comprehensive approach to river basin management.

The article outlines programs such as "Salmon 2000" and emphasizes the restoration of the main stream and protection of ecologically important river corridors. The article concludes cooperation, highlighting new mandates entrusted to the ICPR, including addressing high water problems and revising the Agreement to align with contemporary developments in international water cooperation. The narrative emphasizes the shift toward a more integrated view of river basin management and underscores the value of agreements based on shared policy views over stringent legal obligations. Thus, this article provides a detailed account of the historical, legal, and ecological dimensions of international cooperation in managing the Rhine River.

Yr: 1995 Ecological rehabilitation of the River Rhine: Plans, progress and perspectives:

van Dijk, G. M., Marteijn, E. C. L. and Schulte-Wülwer-Leidig, A.:

Paper Synopsis

The River Rhine has suffered because of numerous drastic environmental changes ? for example, the regulation of the river bed and the construction of weirs and dams. Furthermore, discharges of agricultural, industrial and municipal wastewater have caused a deterioration in the water quality. This problem became particularly acute in the 1960s and 1970s. After the Sandoz accident in Basle in November 1986, the states bordering the River Rhine agreed the Rhine Action Programme for its ecological rehabilitation. This programme has the following four aims, which should be realized by the year 2000: (1) to create conditions which will enable the return of higher species (such as salmon); (2) to safeguard Rhine water as a source for the preparation of drinking water; (3) to abate the contamination of sediments due to toxic compounds; and (4) to fulfil the requirements of the North Sea Action Plan, as the River Rhine flows into the North Sea. Water quality criteria have been developed for about 50 contaminants or contaminant groups and for phosphorus and ammonium. Early signs of the ecological recovery of some aquatic communities in the River Rhine have been observed, but eutrophication and pollution by micropollutants, in particular polychlorinated biphenyls found in suspended matter, sediments and biota, still form a serious threat. In addition to further improving the water quality, river habitats must be improved, reversing the artificial river control measures taken in the past for the return of a number of characteristic riverine organisms such as migratory fish. The ?Ecological Master Plan for the River Rhine? aims to restore the mainstream, along with the main tributaries, as habitats for migratory fish (e.g. salmon). This involves protecting, preserving and improving ecologically important reaches of the River Rhine and the Rhine valley. The first steps for realizing the hydrological and morphological modifications have been taken, starting with the development of a specific ecological network focusing on the most important floodplain areas along the Rhine. Habitat improvement measures started later than the pollution abatement measures and, so far, relatively few studies on the effectiveness of the ecological rehabilitation techniques concerning habitat improvements in the Lower Rhine have been published. A major task for research programmes will be to identify the detailed quantifiable and verifiable ecological objectives (e.g. water quality criteria, hydrological and morphological targets) to guarantee the actual ecological rehabilitation of the River Rhine.

Tag

Morphology, hydrology, ecology, water quality, Rhine Action Programme, river management:

Annotation

G.M. van Dijk (of National Institute of Public Health and Environmental Protection) , E.C.L. Marteijn (of

Institute for Inland Water Management and Waste Water Treatment) , and A. Schulte-Wulwer-Leidig (of International Commission for the Protection of the Rhine) address the historical and contemporary challenges faced by the Rhine, ranging from hydrological and morphological modifications to the severe degradation of water quality due to industrial, agricultural, and municipal discharges.

The pivotal moment in the river's history, marked by the Sandoz accident in 1986, prompted the states bordering the Rhine to collaboratively establish the Rhine Action Programme in 1987. This program set ambitious goals to be achieved by the year 2000, including the restoration of conditions for higher trophic level species, safeguarding water for drinking, reducing sediment contamination, and meeting the requirements of the North Sea Action Plan.

The article discusses the progress made in terms of water quality improvement, especially in the Netherlands Lower Rhine and its tributaries. The paper emphasize the importance of tackling eutrophication and micropollutant pollution, particularly polychlorinated biphenyls (PCBs), which continue to pose significant threats. The ecological recovery, including the reintroduction of species like salmon, is analyzed, providing insights into the changing fish communities over the years.

The authors also delve into habitat improvement measures and the challenges associated with integrating ecological objectives with other functions like navigation and flood control. They discuss the "stepping stone" concept, advocating for local management projects along the river at regular intervals to create a connected chain of favorable conditions for the ecosystem.

The article touches upon the AMOEBA approach, a method for setting detailed ecological objectives, and the importance of an integrated and comprehensive ecological approach. The article concludes by addressing the perspectives and challenges for the future, highlighting the need for continued research and efforts to achieve the ecological rehabilitation of the entire Rhine basin.

Yr: 1995 Living with water: Rhine River basin management:

Ruchay, Dietrich:

Paper Synopsis

Protecting the River Rhine always means dealing with a complex international system of environment, economic and transport policy problems. About 50 million people live and work in the Rhine catchment area. Since 1950 the governments of Switzerland, France, Germany, Luxembourg and The Netherlands have co-operated in the International Commission for the Protection of the Rhine against Pollution (ICPR). So far, three phases characterize this co-operation. During the first phase up to the mid-seventies joint work was developed and organised, learning processes about national efforts took place and the first inventory of the hot spots was conducted. The second phase comprises the period from the signing of the Convention on the Protection of the Rhine against Chemical Pollution to the fire at the Sandoz

warehouse at the end of 1986. It was characterized by efforts to determine international threshold values for extremely hazardous substances. The third phase will be terminated at the same time as the Rhine Action Programme in 1999. Its most important target is the return of higher species, such as the salmon, to the Rhine. In December 1994 the Conference of Rhine Ministers has to decide about the next phase. It is expected that its beginning will be marked by a new improved Bern Convention.

Tag

Rhine Action Programme, ecosystem, international co-operation, water quality:

Annotations

This paper, authored by the then President of the International Commission for the Protection of the Rhine against Pollution (ICPR), provides an overview of the achievements of the ICPR since its inception till the year of the publication of this paper. The paper traces the trajectory of the formation of the ICPR and lists basic geographical and demographic facts of the Rhine catchment area, but it does not engage critically with the factors which lead to its formation or the circumstances during which such an organisation came into existence and to its continued success. It reads more like a pamphlet which highlights the key achievements of the ICPR and the proposed way forward. It is helpful in introducing the ICPR and the work it does to any individual unfamiliar with the key institution instrumental in contributing to the Rhine rejuvenation.

Yr: 1995 Preconditions for successful cross-border cooperation on environmental issues : historical, theoretical and analytical starting points:

Scherer, Roland:

Tag

Cross-border cooperation, Environmental issues, Region, Trans-national Environmental Policy.

Annotation

Roland Scherer, Joachim Blatter and Christian Hey - EURES Institute for Regional Studies in Europe, Freiburg, Germany.

This paper aims to identify impediments to cross-border collaboration on environmental issues and articulate the prerequisites for achieving successful cooperation. The study specifically focuses on cross-border cooperation at a regional level, where "region" denotes a level situated below national states and above municipal entities. The term "cross-border" pertains to activities that transcend national borders. The primary focus of the investigation is the intersection of two distinct policy realms: cross-border collaboration at a sub-national level and environmental policy. Both these policy domains share several common characteristics.

The primary aim of this study is to discern the conditions conducive to successful cross-border cooperation in environmental protection. This will be achieved through an analysis of past initiatives in regional cross-border environmental protection, focusing on identifying both positive and negative

influencing factors. The central theme of this paper revolves around pinpointing the knowledge and interests relevant to these factors. Building upon this understanding, the paper will explore strategies to mitigate the impact of negative factors, such as language barriers, and enhance the promotion of positive factors, such as fostering a common cross-border identity. Additionally, the paper will delve into ways to transform negative characteristics associated with these influencing factors, such as organizational inadequacies, into positive attributes.

Yr: 1995 The international financing of environmental protection: Lessons from efforts to protect the river Rhine against chloride pollution:

Bernauer, Thomas:

Annotation

This scholarly article by Thomas Bernauer, critically examines the effectiveness of international financing in addressing transboundary environmental problems using the case study of efforts to protect the river Rhine against chloride pollution. The key argument challenges the prevailing notion that international financing is a more efficient instrument than alternatives like issue-linkage, differential regulation, or grace-periods.

Bernauer begins by highlighting the assumption that international financing can facilitate collaboration among countries with heterogeneous preferences in addressing environmental challenges. The Coase theorem, which posits that externalities can be resolved through negotiations between the polluter and affected party, is discussed as a theoretical basis. However, the article emphasizes the importance of considering transaction costs in international negotiations.

The chloride pollution issue in the Rhine serves as a case study, illustrating how high transaction costs associated with negotiating financial exchanges for pollution reduction can undermine the efficiency of international financing. Bernauer argues that these transaction costs arise from distributional conflicts, the need to monitor and enforce agreements, and information problems related to uncertainties about the consequences of specific actions.

The article explores the history of the Rhine pollution problem, detailing the involvement of France, Germany, the Netherlands, and Switzerland. It describes specific instances of international financing, such as France paying funds to a potash mine for chloride reduction. The variations in preferences and bargaining power among the riparian countries are analyzed, considering factors like the marginal cost of pollution reduction and the nature of water supply systems.

The concept of a coordination game with distributional conflict is introduced to explain the incentive structure behind the exchange of international financing for pollution reductions. The negotiation strategies employed by the countries involved, such as accepting small reductions and linking the environmental issue to other concerns, are discussed.

The paper evaluates the outcomes, examining the implementation of agreed measures and their environmental impact.

While reductions at a potash mine have been effective, the article raises concerns about the non-retrievable investments represented by transaction costs. It argues that these costs may compound inefficiencies and lead to path-dependence, where initial choices constrain subsequent decisions.

In terms of policy implications, the article suggests that negotiators should invest more time and effort in assessing transaction costs before engaging in full negotiations. A careful analysis of optimal bargaining strategies and institutional arrangements to minimize transaction costs is recommended. Additionally, the design of bargaining processes should consider minimizing exit costs to avoid path-dependence, emphasizing accountability and openness to alternative solutions.

Yr: 1993 European Community Water Law:

Macrory, Richard:

Tag

Water Quality, Pollution, Directives

Annotation

Richard Macrory is a Barrister-at-law; and Denton Hall Professor of Environmental Law, at Imperial College, Centre for Environmental Technology.

This article talks mainly about the Community water pollution laws under four headings, i.e., Water Uses and Water Quality Objectives; Pollution Discharges Including Dangerous Substances; Specific Processes; and product Standard *\

It discusses four Community laws that impose water quality objectives mainly the 1975 Surface Water for Abstraction of Drinking Water Directive which mandates Member States to establish and adhere to specific standards for surface water used for drinking, consisting of approximately 50 parameters with obligatory and recommended values, allowing Member States to implement even stricter standards if desired.

The 1976 Quality of Bathing Directive outlines specific chemical parameters for surface water quality, categorizing them into minimum and guideline values, permitting Member States to provide derogation and requiring notification, with its adoption on December 10, 1975. 1978 Quality of Water for Freshwater Fish Directive and the 1979 Quality of Water for Shellfish Directive - Both Directives share a similar structure, establishing water quality criteria with mandatory T values and recommended guideline 'G' values for various physical and chemical parameters, with the first Directive focusing on freshwater environments supporting freshwater fish and the second targeting coastal and brackish waters supporting shellfish.

1976 Framework Directive on Discharge of Dangerous divides the regulated substances into two lists i.e., Blacklist & Grey List. Dangerous Substance Subsidiary Directives prescribed limit values for 13 List I substances, of which several are pesticides. 1980 Protection of Groundwater Against Pollution Caused by Dangerous Substances Directive seeks specifically to protect groundwater. Still, it follows the 1976 Framework Discharge Directive in dividing

substances into a blacklist and a grey list, although the lists attached to the two directives do not precisely match. 1991 Nitrate directive seeks to protect waters from nitrate pollution from agricultural sources. It represents a significant advance in Community water pollution policy in that it targets a non-industrial and indirect source of pollution.

1991 Urban Wastewater Treatment Directive contains requirements for the discharge of sludge and for the collection, treatment, and discharge of urban wastewater and biodegradable wastes from certain industrial sectors. Product Standards — 1980 Drinking Water Quality Directive establishes standards applicable to all waters supplied for direct human consumption (drinking water) or for use in the food industry.

The paper talks about the directives' implementation problems as British pollution control during this period was characterized by a framework of pollution controls without specific standards, where environmental goals were primarily determined by local authorities with guidance from central government ministries.

The last part talks about the International and regional agreements where the European Community is not yet truly federal and does not possess exclusive legal competence in all areas of environmental policies. It's been concluded that implementing Community law within members is primarily a responsibility for Member States, "but ensuring that this takes place is a key task for the Commission".

Yr: 1991 Legal Aspects of International Water Management: The Rhine:

Goppel, J. M.:

Paper Synopsis

In the second half of the 19th century, considerable changes in the ecosystem of the Rhine became evident. As water pollution increased due to the steadily growing industry along the river the number of fish species decreased.About 40 years ago, Switzerland, France, Germany, the Netherlands and Luxemburg joined together in the International Commission for the Protection the Rhine against Pollution (ICPR), the European Community became a member in 1976.Two approaches to preventive and curative water protection have been practised within the ICPR: on the one hand internationally binding conventions on chemical pollution, on pollution by chlorides and on thermal pollution and on the other hand the Rhine Action Programme.The Convention on chemical pollution aims at elaborating, adopting and implementing limit values for the so-called black-list substances listed in Annex I to the Convention. By August 1990, limit values according to only two out of nine recommendations on which the ICPR and reached the required unanimity had been formally accepted by all of the Riparian States and the European Community.Equally, the implementation of the chlorides conventional has so far been most disappointing. Due to national problems in France, the first stage of the 1976 Chlorides Convention did not become effective before 1987. Negotiations in the past years have shown that the member countries have extreme difficulties in

finding an agreement on the implementation of the second stage of this Convention, the required decision is still pending. As far as the drafting of a convention on thermal pollution is concerned, the member countries have decided to postpone the negotiations and to treat other more important questions first.The second ICPR-approach to water protection consists in the Rhine Action Programme (RAP) and is considerably more pragmatic. This comprehensive programme is a political agreement by means of which all parties hope to achieve greater improvements of the Rhine ecosystem than what has been the case so far. The necessity of such programme became evident after the fire at the Sandoz warehouse in November 1986, which had a disastrous effect on the Rhine and its ecosystem. The implementation of the RAP was meant to complement rather than to replace on-going negotiations within the already existing convention. However, experience has shown that there is a tendency to concentrate more on work within the RAP than on that within the Conventions.Even though little progress has been made with the implementation of the two Conventions, they present an international legal setting for private legal actions against the companies causing important ecological damages the Rhine. The out-of-court settlements achieved in some cases also prove that the companies concerned are most aware of how controversial their discharges are.

Tag

Rhine, ICPR, Commission, Conferences of Ministers:

Annotation

J. M. Goppel is an Executive Secretary of, the International Commission for the Protection Of The Rhine Against Pollution.

This article discusses the Commission for the Protection of the Rhine against Pollution, which was established in 1963 with the aim of addressing pollution issues in the Rhine River. The Commission's main tasks include conducting research on Rhine pollution, evaluating the results of such research, preparing treaty elements for governments involved in protecting the Rhine, and proposing measures to protect the river against pollution. The document also mentions the presence of 23 groups of experts within the Commission, as well as the coordination of its work by the technical-scientific secretariat in Koblenz, Germany. Conferences of Ministers of the Riparian States of the Rhine have also been held since 1972 to discuss pollution concerns. The last conference took place in November 1989 in Brussels.

Within the ICPR, two approaches to preventive and curative water protection have been employed. Firstly, there are internationally binding conventions addressing chemical pollution, pollution by chlorides, and thermal pollution. The Convention on chemical pollution aims to establish and implement limit values for substances. However, as of August 1990, only two out of nine recommendations with required unanimity had been formally accepted by all Riparian States and the European Community.

The second ICPR approach to water protection is the Rhine Action Programme (

RAP), which is more pragmatic. This program, a political agreement, aims to achieve greater improvements in the Rhine ecosystem. The need for such a program became evident after the Sandoz warehouse fire in November 1986, which had a disastrous effect on the Rhine. The RAP was intended to complement ongoing negotiations within existing conventions, but there is a tendency to focus more on work within the RAP than the conventions.

Despite limited progress in implementing the two conventions, they provide an international legal framework for private legal actions against companies causing significant ecological damage to the Rhine. Out-of-court settlements in some cases indicate that the companies involved are acutely aware of the controversial nature of their discharges.

Yr: 1989 The Sandoz Spill: The Failure of International Law to Protect the Rhine from Pollution:

Schwabach, Aaron:

Tag

Customary International Law, Sandoz Spill, treaty regime, transboundary.:

Annotation

Aaron Schwabach is a Professor of Law BA, Antioch College; JD, University of California, Berkeley School of Law; PhD, University of Westminster.

This article laid emphasis on the principles of international law applicable to transboundary river pollution and describes in detail the treaties governing pollution of the Rhine. Also, the failure of the Rhine treaty regime to protect the river from pollution and its inability to provide adequate means of compensating victims of transboundary pollution.

The article discusses the Environmental Effects of the Sandoz Fire like the Contamination of the Rhine, the effects of the spill on Rhine Fauna, and water supplies, and the effects of the accident on the air. It also discusses the Cleanup and Provisions for the Prevention of Future. It talks about the reaction to the spill by the residents as the reaction of those living near the Rhine was vehement, if not violent. International criticism of Switzerland and Sandoz focused on that Switzerland delayed more than twenty-four hours before notifying the downstream countries of the spill.

Both customary international law and a treaty regime has provision to address accidents like that at the Sandoz Plant. Under Customary International law, the 'absolute territorial sovereignty theory'- holds that a riparian state is free to do as it chooses with the water within its territory, without regard for the effects on the downstream or co-riparian. The 'absolute territorial integrity theory' holds that a downstream riparian state may demand the continuation of the full flow of the river from an upper riparian state, free from any diminution in quantity or quality. The 'limited territorial sovereignty theory' holds that making use of the waters flowing through its territory to such use does not interfere with reasonable use of water stream states. The 'community theory' holds that the water should be managed as a unit, regardless of national boundaries. It also

shows the failure of the treaties governing the Rhine like the Berne Convention, the Rhine Chemical Convention, etc.

Yr: 1985 The Protection of the Rhine Against Pollution:

Kiss, Alexandre:

Annotation

The article, by Alexandre Kiss, explores the historical and contemporary efforts to address pollution in the Rhine River, a vital waterway for Western Europe. The Rhine Basin, with a population of around forty million, spans multiple countries and is integral to the economic activities of industrialized nations in the region. The article traces the evolution of international agreements and organizations aimed at mitigating pollution in the Rhine.

The first international regulations related to the Rhine focused on issues such as salmon fishery and the transport of hazardous substances. However, the main problem of liquid and solid waste dumping became apparent after 1948. The article highlights the establishment of the International Commission for the Protection of the Rhine Against Pollution in 1963 as a significant step towards addressing the pollution challenges. Despite the growing awareness of the environmental degradation of the Rhine, concrete improvements took time.

The pollution statistics from 1973-75 underscore the severity of the issue, with significant amounts of toxic substances being discharged into the river. The article discusses the efforts to combat pollution, including the development of sewage water purification systems, the management of thermal pollution, and the establishment of an international warning and alarm system for emergencies.

One of the major focuses is on the Convention for the Protection of the Rhine Against Chemical Pollution, signed in 1976. This convention, inspired by European and international frameworks, aimed to control and prevent chemical pollution in the Rhine. The article details the provisions of the convention and its impact on improving water quality. However, it also notes the challenges and ongoing efforts to combat specific types of pollution, such as chlorides.

The article delves into the issue of chloride pollution in the Rhine, particularly its impact on the Netherlands. The Netherlands faced environmental and economic challenges due to increased salinity in the river, affecting agriculture and water supply. The Chloride Convention signed in 1983 aimed to address this specific concern, but the article suggests that pollution continued despite international agreements.

Furthermore, the author discusses legal actions taken by individuals and organizations to hold polluters accountable. An action brought before the District Court of Rotterdam illustrates the complexities of addressing pollution through national legal systems. The article emphasizes the necessity of international cooperation and institutions in addressing transboundary pollution effectively.

In conclusion, the article provides a comprehensive overview of efforts to

protect the Rhine against pollution, highlighting both successes and challenges. It emphasizes the importance of international cooperation, institutional frameworks, and legal mechanisms in addressing environmental issues that transcend national boundaries.

Yr: 1978 Who can clean up the Rhine: the European Community or the International Rhine Commission?:

Kamminga, Menno T.:

Paper Synopsis

After 30 years of negotiations, the Rhine river is still very polluted. Although the concentration of some pollutants has diminished during the past few years, the quantity of other harmful substances is still increasing. This lack of progress can be explained to a large extent by a set of peculiar circumstances which seems to be unique for the Rhine. The most important of these circumstances is the international dimension of the situation. The main stem of the Rhine flows through the sovereign territories of Switzerland, the Federal Republic of Germany, France and the Netherlands. Its drainage area, moreover, also covers Italy, Austria, Luxemburg and Belgium. Obviously, no anti-pollution policy can hope to be effective until at least the most directly concerned of these eight States have reached agreement on common objectives and common measures. Reaching agreement, however, is complicated by the problem of conflicting uses which may be more intricate for the Rhine than for any other international river.

Annotation

The paper was prepared by an official with the Netherlands Ministry of Public Health and the Environment during the 1977 session of the Research Centre of the Hague Academy of International Law. The paper was published in 1978, at a time when the European Economic Community (EEC) was at its nascent stage in terms of its competence and jurisdiction over environmental matters. The paper brings forward key insights on the role to be played by the International Rhine Commission and the European Economic Community, respectively.

The paper seeks to answer the question in three parts: first, by giving a comparative perspective on the contributions of two overlapping yet different institutions, the International Rhine Commission and the European Community. In the first instance, it highlights the political attention received on rhine pollution from the Dutch government after World War II, when ICPR was still non-existent. The Dutch raised the issue under the existing framework of the CCNR and the Salmon Commission. The substantial point raised by the Dutch Government eventually led to the constitution of a commission—albeit an informal one—through an exchange of letters between the governments of Switzerland, the Federal Republic of Germany, France, Luxemburg, and the Netherlands. It took a decade to finally establish the International Commission for the Protection of the Rhine against Pollution in 1963. However, during the initial phase, the power of ICPR was limited as decisions required unanimity and there were no provisions for conflict resolution. The year

1972 marked a decisive moment for the Rhine when the Dutch government took the initiative in organizing the first ministerial conference on the pollution of the Rhine—the conference had far-reaching consequences—and in 1976, the landmark Convention on the Protection of the Rhine against Pollution with Chlorides and Chemical Substances was signed. The author in this section has argued that although the ICPR during the initial phase was a 'framework arrangement' and faced significant 'procedural constraints, economic interests, and technical difficulties' on the standard setting for chemical pollution, The paper further ascertains that the adoption of the Rhine Chemical Convention should also be attributed to a similar instrument that was passed by the Council of the European Communities a few months earlier—communities that included most of the Rhine Basin countries.

In the second section, the author introduced the institutional framework of the EEC and its achievements in the European Environmental Law. This was particularly important since the rationale of the EEC Treaty (signed in 1957) was skewed towards economic growth and free competition. Yet he argues that over time—on November 10, 1973, a decade after the establishment of the ICPR—the Council of Ministers (in the EEC) adopted the "first environmental action program" that specified 'the objectives and principles of an EEC environmental policy and the actions to be undertaken in the areas of water, air, and noise pollution." Against this backdrop, the Council passed several directives on the quality of surface water for drinking water, bathing water, and the 'discharge of dangerous substances into the aquatic environment'.

In the last section, the author unpacks the legal problems pertaining to the participation of the EEC in the ICPR. In 1976, the Rhine Minister signed an agreement to include EEC as a member of the ICPR. The inclusion of the EEC in the ICPR had to encounter multiple legal and diplomatic challenges, especially due to its position in the ICPR (since the same member of the EEC was also part of the ICPR) and the EEC's competence in environmental matters. For the latter, the crucial question was regarding how "the implementation of the Rhine Chemical Pollution Convention could "affect" the existing Community rules. In other words, could the adoption of standards for the Rhine that are different from EEC standards affect those EEC standards?" — These ambiguities, however, were carefully considered as the "Directives on the Prevention of Water Pollution, which have so far been adopted by the European Community, explicitly refer to the possibility of laying down more stringent standards at a national level."

The paper, through its legal analysis, gives a solid understanding of the various legal ambiguities that institutions such as ICPR and EEC faced in terms of the implementation of the water quality standard. As a matter of fact, a lot of these initial lessons were ultimately carried forward during the revision of the subsequent EU treaties as well as the functioning of the ICPR.

Yr: 1977 Rhine River Pollution:

LeMarquand, David G. :

Tag

ICPR, IAWR, RIWA, EEC, UNECE, AWR:

Annotation

The book by LeMarquand is an influential book on the various dynamics of the international decision making process for reaching an agreement on the international rivers. The author meticulously delves into some of the largest and most complex river basins—Colorado, Columbia, and the Rhine.

The book uses a conceptual and analytical framework to identify conditions that influences international river cooperation or impede cooperation. In Part I of the book, the author develops a conceptual lens to identify the 3 key element that impacts treaty formation— i. The Hydrologic-Economic Incentive that includes Public Goods , Common Pool Resources, Integrated Development Opportunities and Upstream-Downstream Conflict. ii. Foreign Policy that includes Image, International Law, Linkage, Reciprocity, and Sovereignty iii. Domestic Policy Making and Consensus Formation involving- Bureaucratic Policy Formation, Executive Policy Formulation, Non-Executive Policy Formulation, Distributive Politics, Regulatory Politics, Redistributive Politics

The conceptual understanding feeds into the second part of the book to develop an analytical framework that could be used to unpack the various intricacies on the decision and agreement process , respond to the uniqueness of river basin, and also provides a basis for comparing disparate issues in a number of basins. The analytical framework in particular incorporate- 1. Service (the net economic benefit expected for international or national development) 2. Externalities(cost considerations and the distribution of externalities for international agreement) 3. Linkage (net economic or political benefit expected from the in other areas of cooperation among the co-riparian) 4. Political Demands(strategic factors to assess the perceptions of the decision-makers) 5. Foreign Policy 6. Information Uncertainty 7. Exogenous Uncertainty(This variable represents the uncertainty for those issues where critical decisions are made outside the control of the national decision-makers such as independent international institution)

The chapter on the Rhine Pollution use these conceptual lens and analytical framework to extensively discuss the institutional arrangements for coping with pollution on the Rhine River. The chapter gives a good introduction to the pollution profile of the Rhine during 1970'sand how it affected each member states and the influence and impact of international organizations such as EEC, OECD, UNECE, and NATO in setting an environmental agenda of for the Europe. Concomitantly, the role of transnational and domestic actors such as IAWR, RIWA, Arbeit gemeinschaft Wasser- werke Bodensee-Rhein (AWBR) and Arbeit gemeinschaft Rhein Wasser Werke (ARW) has also been discussed. The introduction is also substantiated with a detailed account on ICPR, Annual Rhine Environmental Ministers Meeting, the various national

policies and law of the Rhine basin states.

The book and the chapter on the Rhine is an invaluable resource for anyone to begin the complex problematics of the Rhine pollution issue and the gradual evolution of the diplomatic effort and national consensus towards institutionalization of pollution abatement effort until the 1977.

Yr: 1972 The Rhine Regime in Transition- Relations between the European Communities and the Central Commission for Rhine Navigation:

Collinson, Dale S.:

Tag

Rhine, Central Commission, Navigation, Transition, European Community.:

Annotation

Dale S. Collinson - Associate Professor of Law, Stanford University.

This article aims to examine and dissect the evolution of the relationship between the Central Commission for Rhine Navigation and the European Communities. Given the current significance and historical relevance of the Rhine regime, there is a compelling need to scrutinize these events independently. Furthermore, this exploration aspires to yield insights that extend beyond the specific case, providing a basis for generalizations about interactions between international economic organizations. The intention is that such generalizations can prove valuable for future analyses of international economic integration.

This article concludes that the relations among international economic organizations may be expected to be governed by the general laws of political action. Such organizations will seek to maximize their decision-making authority, even at the expense of other similar organizations, and other political actors will use struggles between international economic organizations to serve their ends. Often these conflicts over basic questions respecting the allocation of decision-making authority will delay substantive action, and this in general reduces the effectiveness of the political system.

Yr: 1967 The River Basin in History and Law:

A., Teclaff Ludwik:

Tag

River Basin, Legal Unity, Basin-wide Development.:

Annotation

Ludwik A. Teclaff was a scholar, a patriot, a warrior, and a man of faith. He was born in Czestochowa, Poland on November 14, 1918, just before Poland emerged as a newly independent Nation.

The book talks about the importance of access to fresh water, which stands as one of humanity's most crucial requirements. How water is distributed within river basins significantly shapes the planning of water resource development to meet the ever-growing demand. Despite their diverse characteristics, river basins share a common physical trait: each serves as a

self-contained unit where all surface and, in part or whole, ground waters constitute an interconnected and interdependent system. The implications of this interdependence are extensive, affecting issues such as pollution control, flood management, resource allocation, and relationships between upstream and downstream riparians.

The book discusses navigation and the river basin as the basis of water control. It also emphasized the importance of inter-Basin links and basin unity. The book appropriately raises the question of whether the adoption of the river basin unit is a temporary reflection of the current state of technology, administrative practices, and legal and economic thinking on water resources development or if the enduring influence of the river basin's physical unity will persist in the future.

The book details out the conditions that impeded and promoted Rhine Navigation.

Yr: 1923 The Regime of the International Rivers: Danube and Rhine:

Chamberlain, J.P.:

Tag

Rhine, legal instruments, Jurisdiction, Navigation.:

Annotation

J.P. Chamberlain was a British statesman who was first a radical Liberal, then a Liberal Unionist after opposing home rule for Ireland, and eventually served as a leading imperialist in coalition with the Conservatives.

This book provides a comprehensive exploration of the regulatory framework surrounding the significant water bodies. The book delves into the intricate mechanisms and challenges associated with managing international rivers, offering valuable insights into the governance structures that have evolved. The author adeptly navigates through the historical, legal, and geopolitical aspects that have shaped the governance of the Rhine River. The book offers a detailed examination of the evolving legal structures and international agreements specific to the Rhine, providing a nuanced understanding of the complexities involved in managing this international waterway.

The Book's strengths lie in its analysis of how collaborative approaches and legal frameworks have been pivotal in addressing environmental concerns, ensuring sustainable usage, and mitigating conflicts related to the Rhine. The Author effectively illustrates the role played by various stakeholders, such as governments, international organizations, and local communities, in shaping the governance dynamics of the Rhine River. The inclusion of case studies enhances the practical relevance of the book, offering readers tangible examples that underscore the challenges and successes in managing the Rhine.

Yr: Maastricht And The Environment: The Implications For The EC's Environment Policy Of The Treaty On European Union:

Wilkinson, David:

Tag

Maastricht Treaty, EC policy, EFTA, environmental legislation:

Annotation

David Wilkinson is a Senior Fellow at the Institute for European Environmental Policy, London.

This article talks about the Maastricht Treaty, while bringing significant changes to EC policy and environmental legislation decision-making, faces ambiguity in its agreed text and will take time to manifest practical effects; regardless of its ratification, amending the EC treaty is anticipated to be a prominent agenda item in the 1990s, with a potential review in 1996, possibly accelerated due to the anticipated accession of EFTA countries to the Community.

The new European Community Treaty builds upon the substantial modifications introduced five years earlier by the Single European Act. The SEA marked a significant milestone by establishing an explicit legal foundation for the Community's environmental policy and emphasizing the integration of environmental considerations into other EC policies. However, the SEA was drafted hastily and with limited discussion, leaving room for further treaty reforms. The Maastricht Treaty, while bringing important changes to the underlying principles of EC policy and the decision-making process for environmental legislation, shares some of the limitations of its predecessor. The agreed-upon text is often unclear, and the practical implications will take time to unfold. Regardless of its eventual ratification, it is evident that amending the EC treaty will remain a prominent agenda item for the Community throughout the 1990s. Member States have committed to revisit treaty changes in 1996, with the possibility of advancing this timeline to accommodate the anticipated early accession of several countries from the

Yr: Europe's Water Framework Directive: discovering hidden benefits:

Tyson, J. M. and Riley, C.:

Paper Synopsis

The water utility companies in the UK are regulated by the economic regulator to ensure that they do not abuse their monopoly powers and operate under high efficiency targets to minimise costs to their customers. The requirements for improved environmental performance are set by the Environment Agency and, once agreed, incorporated in a five-year plan. Prior to the Water Framework Directive the companies had little choice but to meet a rigorous programme to achieve higher discharge standards as end-of-pipe solutions. The catchment-based approach of the WFD, coupled with the requirement to achieve 'good status' for receiving waters and the requirement for stakeholder involvement, has introduced much needed flexibility into the process which is expected to lead to better and more cost effective solutions to water quality problems.

Tag

Asset management plan, Ribble pilot, river basin management plan, stakeholder, WFD:

Annotation

C.Riley – Mersey Basin Campaign, Manchester, UK and J.M. Tyson – United Utilities plc, Warrington, UK.

This paper explores the potential economic and broader benefits and opportunities that the European Water Framework Directive presents for water companies and other organizations in England and Wales. It highlights how this new directive diverges from traditional European water regulations by emphasizing extensive stakeholder participation. The paper elucidates how this distinction is pivotal in uncovering latent advantages for stakeholders and instrumental in attaining enhanced environmental water quality and water management, surpassing the outcomes of previous regulatory frameworks. Drawing on the experience of United Utilities, the regional water company for the Northwest of England, the paper illustrates how hidden benefits are already manifesting and anticipates sustained success and accomplishments in the long term.

All European Union member states are embarking on a new and promising era in the realm of water management. Governments and those tasked with implementing the Water Framework Directive are currently establishing the essential tools, techniques, and guidelines that will underpin the WFD's execution and measure its success. In the UK, a pilot project was conducted to assess and recommend methods of stakeholder participation, emphasizing techniques that facilitate the involvement of various stakeholders. Stakeholder mapping was proposed as an effective approach to identify and engage stakeholders, regardless of their scale. Ironically, it appears that stakeholder mapping might not be fully utilized across England and Wales, as the UK Government has indicated concerns about the potential costliness of this technique.

Yr: European Community Environmental Policy and Law:

Freestone, David:

Annotation

David Freestone is a Senior Lecturer, at Law School, University of Hull, Hull HU6 7RX England.

This article discusses how the European Community Environmental Policy and Law has evolved over time and has become one of the more successful policies of the European Community. It is considered an essential objective of the Community and has gained popular support. The policy originated from the Stockholm Conference in 1972, which highlighted the need for environmental protection. Since then, over 100 legal instruments have been enacted by the Community in this area. The European Court of Justice has played a role in interpreting and enforcing environmental legislation. The policy is subject to negotiations and compromises within the Council, and the European Parliament and the Commission also play important roles in shaping and implementing the policy. The scope of the policy covers a wide range of activities, but specific details are not

provided in the context.

The environmental policy of the European Community, like its national counterparts, has recently gained prominence, now demanding attention on par with other sectoral policies and being considered in their development. The Commission, aligning with European public opinion, acknowledges the imperative integration of environmental policy with other policies. This integration is gradually being recognized in sectoral policies like the common fisheries policy, albeit belatedly, but has yet to substantially impact the common agricultural policy. There's a valid skepticism that environmental concerns may be overshadowed in the pursuit of completing the single market.

Despite potential challenges, the fact that environmental policy operates in conjunction with other Community policies implies that the system of cross-sectoral compromises and trade-offs could work both to its advantage and disadvantage. Significant proposals, such as the Commission's recent concept of a carbon tax, will necessitate negotiations within the Council alongside other issues, like an EC policy on carbon emissions for the climate convention negotiation.

Yr: Integrative river basin management: challenges and methodologies within the German planning system:

Evers, Mariele:

Paper Synopsis

Integrated river basin management (IRBM) is recently fostered in the European Union mainly by two framework directives which were established in order to realise sustainable and effective river basin management and aiming for integrated approaches on a river basin scale. One is the water framework directive which objective is to assess water quality and achieve a good status for all water bodies. The other one is the flood risk management directive on the assessment and management of flood risks. This paper discusses the potential synergies of the two directives against IRBM in general and describes European experts' views which were formulated as recommendations. The status of the water bodies and water governance system in Germany are described and critically reflected against the experts' recommendations. Potential methodological approaches which were developed and tested in German case studies are presented and discussed in the light of IRBM with focus on identifying and using crosssectoral synergies. The analysis reveals shortcomings in IRBM approaches in Germany and potentials for identification and use of synergies if certain framework, concept approaches and methodological approaches would be used.

Tag

Integrated river basin management, Cross-sectoral synergies:

Annotation

Mariele Evers is working in the Geography Department, University of Bonn, Meckenheiemr, Allee 166, 53115 Bonn, Germany.

This article laid emphasis on investigating

the possibility and effectiveness of coordinating both directives in a cohesive manner for integrated river basin management (IRBM), to evaluate the application of IRBM in Germany, and to propose scientific approaches for IRBM. It talks about a brief overview of the WFD and Floods Directive, highlighting potential synergies, identification of requirements and recommendations for a coordinated approach based on European expert perspectives, an analysis of the German river basin management (RBM) situation in relation to the WFD, FD requirements, and expert recommendations, presentation of methodological approaches for IRBM, and a summary and discussion on potential research directions and needs.

River basin management involves the coordinated planning and administration of water resources, sustainable development, and strategies at the river basin level. In the European Union, the management of river basins is primarily shaped by two directives: the Water Framework Directive (WFD) and the Floods Directive (FD). There is clear evidence of synergies between these directives, as identified through an examination of literature, documents, expert opinions gathered via questionnaires, and discussions during a conference session on this topic.

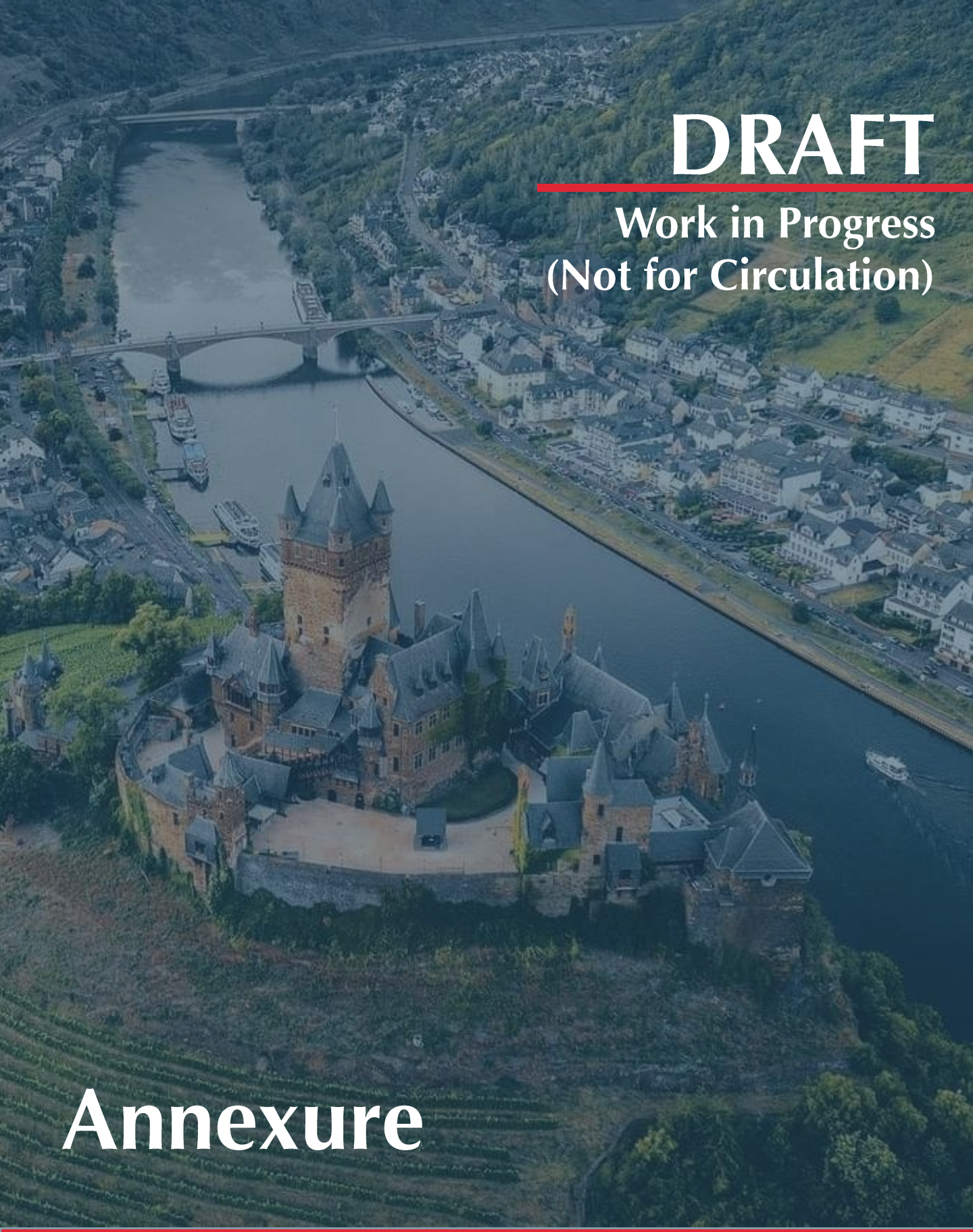
Despite the recognized synergies, the successful implementation of measures outlined in the Water Framework Directive to achieve its goals faces challenges in Germany. These challenges include a lack of sufficient financial and personnel resources, limited acceptance, and difficulties in allocating available and suitable areas for implementation.

Yr: European Overview - Implementation of planned Programmes of Measures and New Priority Substances:

European, Commission:

Annotation

This report gives insight into the implementation of directives in European member countries. The Member States have advanced in the implementation of the initial programs of measures (PoMs), these measures have not been fully executed. The persistent challenge of inadequate financing is likely to hinder the implementation of the second PoMs (2015-2021), with as much as 64% of River Basin Districts (RBDs) yet to secure funding for all relevant sectors, Although most Member States have made some headway in identifying the gap to achieve good status for each significant pressure and determining the level of implementation required, further refinement is necessary for the third PoMs (2021-2027). For those Member States that have pinpointed additional pressures, measures are already in place to address them. The gap to good status has generally been recognized, and indicators have been developed to assess the level of implementation needed to attain good status.



DRAFT

Work in Progress
(Not for Circulation)

Annexure

NAMAMI GANGE

TREADS
TRANSBOUNDARY RIVERS ECOLOGIES AND DEVELOPMENT STUDIES

	Title of the Article/Book	Author(s)	Institutions	Institutional Affiliation of Author(s)
1	Transboundary river basin management in Europe Legal instruments to comply with European water management obligations in case of transboundary water pollution and floods	Andrea M. Keessen, Jasper J.H. van Kempen & Helena F.M.W. van Rijswick	1. ICPR	Andrea Keessen is a University Lecturer and Researcher, Jasper van Kempen is a PhD Candidate, and Marleen van Rijswick is a Professor of European and Dutch Water Law, all three authors work at the Centre for Environmental Law and Policy/NILOS, Utrecht University (Netherlands).
2	Europe: international water law and the EU Water Framework Directive	Reichert Götz	1. ICPR	Götz Reichert is the Head of the Department on Environment, Energy, and Climate Change at the Center for European Policy, Germany.
3	European Community Water Law	Richard Macrory	1. ICPR	Richard Macrory is a Barrister-at-law; and Denton Hall Professor of Environmental Law, at Imperial College, Centre for Environmental Technology.
4	The Sandoz Spill: The Failure of International Law to Protect the Rhine from Pollution	Aaron Schwabach	1. ICPR	Aaron Schwabach is a Professor of Law BA, Antioch College; JD, University of California, Berkeley School of Law; PhD, University of Westminster..
5	European Community Water Policy	Paulo Canelas de Castro	1. ICPR	Paulo Canelas de Castro is a Professor of Law and coordinator of the master's Program in European Union Law, International Law, and Comparative Law, at the University of Macau..
6	The River Rhine: from Equal Apportionment to Ecosystem Protection	André Nollkaemper	1. ICPR	André Nollkaemper is a Professor of Law BA, Antioch College; JD, University of California, Berkeley School of Law; PhD, University of Westminster..
7	Legal Aspects of International Water Management: The Rhine	J. M. Goppel	1. ICPR 2. CCNR	J. M. Goppel is an Executive Secretary of, the International Commission for the Protection Of The Rhine Against Pollution.
8	The Regime of the International Rivers: Danube and Rhine	J.P. Chamerlain	1. ICPR 2. CCNR	J.P. Chamberlain was a British statesman who was first a radical Liberal, then a Liberal Unionist after opposing home rule for Ireland and eventually served as a leading imperialist in coalition with the Conservatives.
9	Preconditions for successful cross-border cooperation on environmental issues : historical, theoretical and analytical starting points	Roland Scherer, Joachim Blatter and Christian Hey		Roland Scherer, Joachim Blatter and Christian Hey - EURES Institute for Regional Studies in Europe, Freiburg, Germany.
10	The Rhine Regime in Transition--Relations between the European Communities and the Central Commission for Rhine Navigation	D. S. Collinson	1. ICPR 2. CCNR	Dale S. Collinson - Associate Professor of Law, Stanford University
11	Federalism and the European Union: The Scope and Limits of the Treaty of Maastricht	Daniel Wincott	1. ICPR	Daniel Wincott is the Blackwell Law and Society Chair at Cardiff Law School, a position he has held since September 2008.
12	Maastricht And The Environment: The Implications For The Ec's Environment Policy Of The Treaty On European Union	David Wilkinson	1. ICPR	David Wilkinson is a Senior Fellow at the Institute for European Environmental Policy, London.
13	The EU Water Framework Directive: From great expectations to problems with implementation	Nikolaos Voulvoulis, Karl Dominic Arpon, &, Theodoros Giakoumis	1. ICPR	Nikolaos Voulvoulis, Karl Dominic Arpon, Theodoros Giakoumis – all of them works at Centre for Environmental Policy, Imperial College London, London, UK.
14	The remarkable restoration of the Rhine: plural rationalities in regional water politics	Marco Verweij	1. ICPR	Marco Verweij - Department of Social Sciences and Humanities, Department of Political Science, Jacobs University, Bremen, Germany
15	The Congress of Vienna and its global dimension: 1814-2014 (Report)	Hans van der Werf, Secretary General CCNR	1. ICPR 2. CCNR	[Address by the Secretary-General, Mr van der Werf, at the Congress on "The Congress of Vienna and its global dimension: 1814-2014" (18 - 22 September 2014)]
16	Europe's Water Framework Directive: discovering hidden benefits	C. Riley and J.M. Tyson	1. ICPR	C.Riley – Mersey Basin Campaign, Manchester, UK and J.M. Tyson – United Utilities plc, Warrington, UK.
17	The governance of land use in river basins: prospects for overcoming problems of institutional interplay with the EU Water Framework Directive	Moss Timothy	1. ICPR	Timothy Moss - Institute for Regional Development and Structural Planning, Berlin, Germany.

18	Investigating the use of environmental benefits in the policy decision process: a qualitative study focusing on the EU water policy	T. Thaler, B. Boteler, T. Dworak, S. Holen & M. Lago	1. ICPR	T. Thaler - Flood Hazard Research Centre, Middlesex University, London; B. Boteler - Fresh-Thoughts Consulting, Vienna, Austria; T. Dworak & M. Lago – Ecologic Institute, Berlin, Germany; and S. Holen - Norwegian Institute for Water Research, Oslo, Norway.
19	The River Basin in History and Law	A. Ludwik Teclaff	1. ICPR	Ludwik A. Teclaff was a scholar, a patriot, a warrior, and a man of faith. He was born in Czestochowa, Poland on November 14, 1918, just before Poland emerged as a newly independent Nation.
20	The Modern Bequest of a Dying Empire : The Rise of Joint Management of the Rhine River	Robert Mark Spaulding	1. ICPR	Robert Mark Spaulding teaches in the Department of History at the University of North Carolina at Wilmington..
21	The Rhine and European Security in the Long Nineteenth Century: Making Lifelines from Frontlines	Joep Schenk	1. ICPR	Joep Schenk is a lecturer at the History of International Relations section at Utrecht University, Netherlands.
22	Networks of Cooperation: Water Policy in Germany	Wolfgang Rüdig & R. Andreas Kraemer	1. ICPR	R. Andreas Kraemer is the Founder and Director Emeritus, Ecologic Institute, and Wolfgang Rüdig is in the Department of Government, University of Strathclyde, Scotland.
23	River Basin Management Planning with Participation in Europe: From Contested Hydro-politics to Governance-Beyond-the-State	Marc Parés	1. ICPR	Marc Parés - School of Environment and Development, University of Manchester, Manchester, UK.
24	Transposition of the Water Framework Directive in France	Eric Muller	1. ICPR	Éric Muller is Engineer in charge of water planning and implementation of the Water Framework Directive in the French Ministry for the Environment.
25	The Rising Role of Regional Approaches in International Water Law: Lessons from the UNECE Water Regime and Himalayan Asia for Strengthening Transboundary Water Cooperation	Ruby Moynihan and Bjørn-Oliver Magsig	1. ICPR	Ruby Moynihan and Bjørn-Oliver Magsig are from the Faculty of Law, Victoria University of Wellington, New Zealand.
26	Conflict and co-operation in international freshwater management: A global review	Erik Mostert	1. ICPR	Erik Mostert - RBA Centre, Delft University of Technology, Stevinweg, Delft, The Netherlands.
27	The "WFD-effect" on upstream-downstream relations in international river basins ? insights from the Rhine and the Elbe basins	S. Moellenkamp	1. ICPR	S. Moellenkamp is from the Institute of Environmental Systems Research, University of Osnabrueck, Germany.
28	The Water Framework Directive and agricultural nitrate pollution: will great expectations in Brussels be dashed in Lower Saxony?	Britta Kastens and Jens Newig	1. ICPR	Britta Kastens & Jens Newig - University of Osnabrück, Institute of Environmental Systems Research, Germany.
29	Evolution of EU water policy: a critical assessment and a hopeful perspective	Kallis, G. and Nijkamp, P.	1. ICPR	Giorgos Kallis - Universitat Autònoma de Barcelona, Institute of Environmental Science & Technology (ICTA), Faculty Member.. Peter Nijkamp - Dutch economist, Professor of Regional Economics and Economic Geography at the Vrije Universiteit, Amsterdam, the Netherlands.
30	Aspirations and Realities Under the Water Framework Directive: Proceduralisation, Participation and Practicalities	William L. Howarth	1. ICPR	William Howarth - University of Kent.
31	European Community Environmental Policy and Law	David Freestone	1. ICPR	David Freestone is a Senior Lecturer, at Law School, University of Hull, Hull HU6 7RX England.
32	Integrative river basin management: challenges and methodologies within the German planning system	Mariele Evers	1. ICPR	Mariele Evers is working in the Geography Department, University of Bonn, Meckenheiemr, Allee 166, 53115 Bonn, Germany.
33	European Overview - Implementation of planned Programmes of Measures and New Priority Substances (Report)	European Commission	1. ICPR	COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT
34	Institutional design and regime effectiveness in transboundary river management – the Elbe water quality regime	I. Dombrowsky	1. ICPE	I. Dombrowsky, UFZ, Helmholtz Centre for Environmental Research, Leipzig, Germany

35	Accepting Father Rhine? Technological Fixes, Vigilance, and Transnational Lobbies as 'European' Strategies of Dutch Municipal Water Supplies 1900-1975	Disco Cornelisq	1. ICPR	Cornelis Disco - University of Twente Dept. of Science, Technology and Health Policy Studies School of Business, Public Administration and Technology, Enschede, The Netherlands.
36	Beyond the river: the benefits of cooperation on international rivers	Claudia W Sadoff and David Grey	1. ICPR 2. CCNR	Claudia Sadoff was the first Executive Managing Director of CGIAR, the world's largest publicly funded research organization committed to the sustainable and equitable transformation of food, land and water systems. David Grey is a Sr. Knowledge and Learning at the World Bank.
37	EU Environmental Policy Making and Implementation:Changing Processes and Mixed Outcomes	Henrik Selin and Stacy D. VanDeveer	1. ICPR	Henrik Selin, Frederick S. Pardee School of Global Studies, Boston University. Stacy D. VanDeveer, Department of Political Science, University of New Hampshire..
38	Studying the implementation of the Water Framework Directive in Europe a meta-analysis of 89 journal articles	Blandine Boeuf and Oliver Fritsch	1. ICPR	Blandine Boeuf and Oliver Fritsch - University of Leeds.
39	The potential limitations on its basin decision-making processes of granting self-defence rights to Father Rhine	Bettina Wilk, Dries L. T. Hegger, Carel Dieperink, Rakhyun E. Kim & Peter P. J. Driessen	1. ICPR	Bettina Wilk, Dries L. T. Hegger, Carel Dieperink, Rakhyun E. Kim & Peter P. J. Driessen Environmental Governance, Copernicus Institute of Sustainable Development, Utrecht University, the Netherlands.
40	International water negotiations under asymmetry, Lessons from the Rhine chlorides dispute settlement (1931–2004)	Carel Dieperink	1. ICPR 2. CCNR	Carel Dieperink - Copernicus Institute for Sustainable Development and Innovation, Utrecht University, Utrecht, The Netherlands
41	The EU water framework directive: Part 2. Policy innovation and the shifting choreography of governance	Ben Page and Maria Kaika	1. ICPR	Ben Page - Department of Geography, UCL, UK. Maria Kaika - School of Geography and the Environment and St. Edmund Hall, University of Oxford, UK.
	Rhine 2020 & Rhine 2040	ICPR Webiste		Rhine 2040: The "Rhine 2040" program is a comprehensive initiative aiming to establish a sustainably managed Rhine catchment area resilient to climate change, benefiting both nature and people. This program builds upon the evaluation of its predecessor, "Rhine 2020," and addresses unmet goals and emerging challenges. A key component of the program is the development of a climate change adaptation strategy by 2025, in alignment with national strategies and increased collaboration with user interest groups. The program prioritizes water quality, ecology, and considerations for high and low water. Ecologically, "Rhine 2040" sets ambitious goals for strengthening the functional capabilities of the Rhine ecosystem by 2040. Special emphasis
	Relationship between the "Rhine 2040" programme and the Sustainable Development Goals (SDGs) of the UN 2030 Agenda	ICPR Webiste		The "Rhine 2040" program, adopted in February 2020 by the Rhine Ministerial Conference, is a visionary initiative building upon its predecessor, "Rhine 2020." The primary objective is to create a sustainably managed Rhine catchment area resilient to the impacts of climate change, establishing valuable lifelines for both nature and people. Aligned with the United Nations 2030 Agenda's Sustainable Development Goals (SDGs), the program encompasses a range of measures with positive implications for various SDGs. The overarching principles of the "Rhine 2040" program are illustrated through newly developed pictograms by the International Commission for the Protection of the Rhine (ICPR). These principles are intricately mapped to the 17 SDGs, showcasing the program's potential to contribute to the global goals over

	ICPR	ICPR Webiste		The text provides an overview of the ecological objectives and organizational structure of the "International Commission for the Protection of the Rhine" (ICPR) along with the goals and achievements of the Rhine 2040 program, building on the previous Rhine 2020 initiative. The main ecological objective outlined is the restoration of habitat patch connectivity along the Rhine, establishing a network of habitats, and re-establishing the continuity of the main stream and tributaries covered by the migratory fish program. This underscores a commitment to enhancing biodiversity and ecological resilience. The Action Plan on Floods is highlighted as a crucial component, aiming not only to improve protection against floods for human safety and goods but also to enhance the floodplains of the Rhine. It emphasizes the examination of
15	Rhine and Salmon 2020	ICPR Webiste		The document outlines the progress and future goals of the "Salmon 2000" initiative, now part of the "Rhine 2020" program by the International Commission for the Protection of the Rhine (ICPR). The four visions set the stage for the evaluation of the program's success, focusing on increasing salmon population, ensuring uninterrupted migration, achieving self-sustaining stocking, and ultimately establishing a stable wild salmon population in the Rhine by 2020. The introduction contextualizes the brochure within the framework of the ICPR's efforts, highlighting the success of previous initiatives, such as the Rhine Action Programme and "Salmon 2000," in restoring migratory fish populations, particularly salmon, to the Rhine. The need for a new target is emphasized, emphasizing the development of stable salmon
16	The EU water framework directive: measures and implications	Giorgos Kallisa, David Butler,		The text provides a comprehensive examination of the European Union Water Framework Directive (WFD), offering a critical analysis of its objectives, measures, criticisms, prospects of implementation, and broader implications. The WFD represents a significant shift in EU water policy, introducing an ecosystem-based approach to water resource management. The directive emphasizes hydrographic basins as the foundational unit for planning and sets out to achieve a ''good'' overall quality of all waters, reflecting a commitment to preventing further deterioration of water quality. The paper is structured to address specific aspects of the WFD. Section 2 provides a historical overview of EU water policy, revealing the limitations of previous directives and the need for a more integrated framework. The subsequent sections delve into the details of
17	The EC Water Framework Directive – An Instrument for Integrating Water Policy	D. Grimeaud		
18	The EU Water Framework Directive - A key to catchment-based governance (NA)	F. Holzwarth		

19	The Water Framework Directive: Redesigning the Map of Europe?	D. Liefferink, M. Wiering and P. Leroy		The paper explores the European Union's (EU) Water Framework Directive (WFD) and its profound impact on reshaping the conceptualization and management of water resources across Europe. The narrative contends that the EU, through the WFD, accommodates these varied viewpoints by promoting a vision of Europe as interconnected hydroecological networks rather than bounded territories. The chapter traces the historical evolution of water policies within the EU, emphasizing the WFD's emergence in 2000 as a pivotal moment that elevated ecological concerns to the forefront of political discourse. The directive encourages integrated water-basin management, challenging traditional administrative structures and prompting a reevaluation of competencies among administrative levels. It highlights the tension
20	Sustainable water resource management: River basin management and the EC Water Framework Directive	C. Teodosiu, G. Barjoveanu and D. Teleman		
21	Unesco Rhine Case Study	Ine D. Fritjters and Jan Leentvar		This comprehensive text delves into the intricacies of the Rhine River, spanning its geographical, ecological, and geopolitical dimensions, offering a thorough understanding of the challenges and collaborative efforts in managing this critical European waterway. The Rhine, flowing through Switzerland, France, Germany, and the Netherlands, serves as a linchpin for various essential functions, including navigation, industry, agriculture, energy generation, and as a natural habitat for diverse species. The document illuminates the distinct ecosystems along the Rhine, highlighting the environmental significance of regions such as the High Rhine in Switzerland, the Upper Rhine adversely impacted by flood mitigation measures, and the Middle Rhine with its unique landscape. It underscores the ecological
22	The EU approach for integrated water resource management: transposing the EU Water Framework Directive within a national context – key insights from experience. (NA)	Marleen van Rijswick Keessen Andrea		
23	Successes in the International Cooperation in the Rhine Catchment Area	Carel Dieperink	International Rhine Commission (IRC), Institute for Inland Water Management and Waste Water Treatment (RIZA), State Institute for Health and Environmental Hygiene (RIVM), State Institute for Fisheries Research (RIVO), RIWA, Reinwater, Provincial Water Management Agency of the province of North Holland (PWN), IAWR, European Environmental Bureau (EEB), International Rhine Group	Assistant Professor of Geosciences at the Copernicus Institute of Sustainable Development at Utrecht University, The Netherlands
24	Water quality in international river basins	Deborah F. Shmueli	ICPR	Department of Geography, University of Haifa, Mount Carmel, Haifa, Israel
25	Europe's Rhine power: connections, borders, and flows	Vincent Lagendijk	CCNR, Union for the Coordination of the Production and Transport of Electricity (UCPTE), Netherlands Organization for Scientific Research (NWO)	Maastricht University, Maastricht, The Netherlands
26	A watershed on the Rhine: Changing approaches to international environmental cooperation	Marco Verweij	ICPR	Professor of Political Science, Constructor University, Bremen, Germany

27	Reducing Pollution of the River Rhine: The Influence of International Cooperation	Thomas Bernauer and Peter Moser	ICPR, International Asssociation of Waterworks in the Rhine Basin (IAWR), Delft Technical University	Thomas Bernauer - Professor of Political Science, Swiss Federal Institute of Technology (ETH) Zurich, Switzerland; Peter Moser - Research Associate, Center for International Relations, Federal Institute of Technology, Zurich, Switzerland at the time of publication
28	Explaining success and failure in international river management	Thomas Bernauer		Professor of Political Science, Swiss Federal Institute of Technology (ETH) Zurich, Switzerland
29	Understanding Water Regime Formation - A Research Framework with Lessons from Europe	Stefan Lindemann	ICPR	Research Fellow, German Advisory Council on the Environment (SRU)
30	Transboundary cooperation in shared river basins: experiences from the Rhine, Meuse and North Sea	Pieter Huisman, Joost de Jong, Koos Wieriks	ICPR, CCNR, International Commission for the Hydrology in the Rhine Basin, International Salmon Commission	Pieter Huisman - Associate professor of integrated water management in the University of Technology of Delft and senior water management engineer in the National Institute on Inland Water Management and Waste Water Treatment. Former Secretary General of the International Commission for the Protection of the Rhine against pollution; Joost de Jong - Director of information and knowledge in the chief directorate of the Ministry of Transport, Public Works and Water Management and professor of integrated water management in the University of Technology in Delft; Koos Wieriks - Secretary General of the International Commission for the Protection of the Rhine at the time of publication
31	Developments in the International Protection of the River Rhine	Barbara Mielnik	ICPR, EEC, International Commission for the Hydrology of the Rhine Basin (CHR), Rhine Action Programme Coordinating Group, Coordinating Committee for the Rhine	University Professor, Department of International and European Law, Faculty of Law, Administration and Economics, University of Wrocław
32	The EU Water Framework Directive: A multi-dimensional analysis of implementation and domestic impact	Duncan Liefferink, Mark Wiering, Yukina Uitenboogaart	Rijkswaterstaat (The Netherlands), Water Agency (France), Danish Agricultural Advisory Group	Netherlands Environmental Assessment Agency (PBL); Liefferink, Wiering, Uitenboogaart - Institute for Management Research, Department of Geography, Planning and Environment, Radboud University, Nijmegen, The Netherlands
33	Implementing the Water Framework Directive: How to Define a "Competent Authority"	Colin Green and Amalia Fernández-Bilbao	UNECE, Environment Agency (UK), Department for the Environment, Food and Rural Affairs (Defra - UK), Office of Water Services (UK), Department for Communities and Local Government (UK)	Universities Council on Water Resources; Colin Green - Flood Hazard Research Centre, Middlesex Univeristy, UK; Amalia Fernández-Bilbao - Collingwood Environmental Planning, London, UK
34	States, Markets and Beyond: Governance of Transboundary Water Resources	Joachim Blatter and Helen Ingram	ICPR, Regio Basiliensis	Joachim Blatter - European Centre for Comparative Government and Public Policy, Berlin, Germany; Helen Ingram - Professor, Warmington Endowed Chair, Urban and Regional Planning, Environmental Analysis & Design, Political Science, University of California, Irvine
35	The Link Between Polycentrism and Adaptive Capacity in River Basin Governance Systems: Insights from the River Rhine and the Zhujiang (Pearl River) Basin	André R. da Silveira and Keith S. Richards	ICPR, EEC, INTERREG	André R. da Silveira & Keith S. Richards - Department of Geography , University of Cambridge
36	Living With Water: Rhine River Basin Management	Dietrich Ruchay	ICPR, International Commission for the Hydrology of the Rhine, European Community/EU	President of the International Commission for the Protection of the Rhine against Pollution (ICPR) at the time of publication.
37	International co-operation on Rhine water quality 1945-2008: An example to follow?	Erik Mostert	ICPR, CCNR, Salmon Commission, EEC/EC/EU, Reinwater, RIWA, Association of Waterworks in The Netherlands (VEWIN)	Delft University of Technology
38	The EU Water Framework Directive: Part 1. European Policy-Making and the Changing Topography of Lobbying	Maria Kaika and Ben Page		Maria Kaika - School of Geography and the Environment and St. Edmund Hall, University of Oxford, UK; Ben Page - Department of Geography, UCL, UK

39	The Institutional Design of Riparian Treaties: The Role of River Issues	Jaroslav Tir and Douglas M. Stinnett	ICPR	
40	Climate change adaptation in European river basins	Patrick Huntjens, Claudia Pahl-Wostl and John Grin		
41	International Linkages and Environmental Sustainability: The Effectiveness of the Regime Network	Hugh Ward		
42	The Effectiveness of Negotiations over International River Claims	M. Brochmann and P. R. Hensel		
43	Situation Structure and Institutional Design: Reciprocity, Coercion, and Exchange	Ronald B Mitchell, Patricia M. Keilbach,		
	Chapter 6 - International Rivers: The Politics of Cooperation	David G. LeMarquand	ICPR, Council of Europe, European Economic Community (EEC), Organisation for Economic Cooperation and Development (OECD), UNECE, NATO/CCMS, International Rhine Navigation Commission, ALRR Germany), IAWR, RIWA (Netherlands), AWBR (Switzerland, France, Southern Germany), ARW (rest of Germany along the Rhine), Rijkswaterstaat (Netherlands)	
	The Evolution of European Water Policy	D. Aubin and F. Varone		
	The European Union Water Framework Directive: Taking European Water Policy into the Next Millennium†	H. Blöch		Despite the perceived success of the ICPR, Mostert does not believe it to be the only explanation for the improvement of the water quality of the Rhine. Various other factors, not independent from each other, such as the formation of the European Union and its binding directives, the growing environmental awareness and the work of environmental NGOs in the basin states, the participation of waterworks in the Rhine basin and the role of industry in the region, all contributed to the water quality improvement of the Rhine basin. The Rhine experience reinforces the importance of economic, social, and political context of river basin management and due to these contextual factors, the Rhine example cannot simply be emulated for other basins. It can definitely serve as an example to learn from and adapt as per the differing contexts in different basins
	The European Water Framework Directive at the age of 10: A critical review of the achievements with recommendations for the future	H. Daniel, B. Ángel,	European Commission, Joint Research Centre, Institute for Environment and Sustainability,	
	The politics of multi-scalar action in river basin management: Implementing the EU Water Framework Directive (WFD)	F. Hueesker and T. Moss		
	The Water Framework Directive: A New Directive for a Changing Social, Political and Economic European Framework	Maria Kaika		
1	Assessing Management Regimes in Transboundary River Basins: Do They Support Adaptive Management?		1. International Commission for the Protection of the Rhine 2. European Commission	1. Centre for River Basin Administration, Delft University of Technology 2. Ecologic - Institute for International and European Environmental Policy 3. InterSus - Sustainability Services 4.RWS Centre for Water Management

2	Beyond limits and efficiency, what? Assessing developments in EU water policy		1. European Commission (CEC and DG-Research) 2. European Council 3. European Environment Agency 4. General Assembly of France's Local Councils 5. IPPC (integrated pollution prevention and control) 6. European Parliament (STOA)	1.Energy and Resources Group, University of California
3	Contrasting stories on overcoming governance challenges: the implementation of the EU Water Framework Directive in the Netherlands		1. Dutch Ministry of Agriculture, Nature and Fisheries	1. Delft University of Technology 2. Australian National University
4	Coordination and Participation Boards under the European Water Framework Directive: Different Approaches Used in Some EU Countries		1. Environment Agency (EA) 2. European Commission 3. Federal State environmental agency 4 Länder Ministries for the Environment 5. LAWA 6. Ministry of Environment 7. Ministry of the Environment and Rural and Maritime Affairs (MMARM) 8. National Water Council (NWC) 9. Nature Agency (NA) under the Ministry of Environment (MoE) 10. RBDAs	1. Viale dell'Università, Italy
5	Development of Flood Management Strategies for the Rhine and Meuse Basins in the Context of Integrated River Management		1. International Commission for the Protection of the Rhine (ICPR) 2. IPCC 3. IRMA-SPONGE 4. KNMI 5. LAWA 6. Rijkswaterstaat 7. RIWA– International Association of River Waterworks 8. WL/Delft	1. Netherlands Centre for River Studies 2. IRMA - Contribution to the CHR
6	Ecological rehabilitation of the Dutch part of the River Rhine with special attention to the fish		1. International Commission for the Protection of the Rhine against Pollution 2. Rijkswaterstaat	Organisatie ter Verbetering van de Binnenvisserij (OVB)
7	Ecological rehabilitation of the lowland basin of the river Rhine (NW Europe)		1. Dutch Ministry of Transport and Public Works 2. European Union 3. International Commission for the Protection of the Rhine 4. International Rhine Commission 5. Ministries and Regional Agencies of the Environment, Nature and Water Management 6. RIWA– International Association of River Waterworks 7. State Commission on Water Management	1. Department of Environmental Studies, Faculty of Science, University of Nijmegen 2. 2RIZA Institute for Inland Water Management and Waste Water Treatment 3. MH Delft
8	Ecological rehabilitation of the River Rhine: Plans, progress and perspectives		1. Convention of the International Commission for the Protection of the Rhine (ICPR)	1. National Institute of Public Health and Environmental Protection (RIVM) 2. Institute for Inland Water Management and Waste Water Treatment (RIZA) 3. International Commission for the Protection of the Rhine (ICPR)

9	Europe's Rhine River Delta and China's Pearl River Delta: Issues and Lessons for Integrated Water Resources Management		1. 12th Conference of the Rhine Ministers 2. Conservancy Association 2000 3. European Commission 4. International Commission for the Protection of the Rhine (ICPR) 5. Ministry of Housing, Spatial Planning & the Environment 2000 6. Rhine Commission 7. State Environmental Protection Administration (SEPA) 8. World Commission on Environment and Development (WCED) 9. University of Delft 10.University of Freiburg 11. University of Bern	Centre for Comparative Public Management and Social Policy. City Univei sity of Hong Kong
10	Flood defense in the Netherlands: a new era, a new approach		1. Advisory Committee on Water Management 3. Commission for the Protection of the Meuse 4. Commission Luteijn 5. Directorate-General of Public Works and Water Management 9. European Commission 11. Flood Defense Task Force for the Meuse 14. International Commission on the Protection of the river Rhine (ICPR) 21. Secretary of State for Transport, Public Works and Water Management 22. Netherlands Center for River Studies (NCR) 23. Union of Water Boards	1. Ministry of Transport, Public Works and Water Management, Arnhem, The Netherlands 2. Radboud University 3. Institute for Inland Water Management and Waste Water Treatment - RIZA 4. Erasmus University 5. Waterboard Brabantse Delta in Breda 6. Dutch Ministry of Housing, Spatial Planning and Environment 7. Dutch Ministry of Transport, Public Works and Water Management
11	From a sewer into a living river: the Rhine between Sandoz and Salmon		1. Commission for the Hydrology of the Rhine Catchment (CHR) 2. European Economic Area (EEA) 3. ICPR-project group MIKRO 4. International Commission for the Protection of the Rhine (ICPR) 5. Rhine Commission	
12	From open sewer to salmon run: lessons from the Rhine water quality regime		1. Internationale Arbeitsgemeinschaft der Wasserwerke im Rheineinzugsgebiet (IAWR) 2. Bodensee and the Rhine (Arbeitsgemeinschaft Wasserwerke Bodensee±Rhein AWBR) 3. Commission for the Hydrology of the Rhine 4. Commission for the Protection of the Moselle and the Bodensee Committee 5. Deutscher GewaÈ sserschutz 6. Dutch Clean Water foundation 7. Dutch Rhine commission 8. European Environmental Bureau 9. federation for European water protection (Federation EuropaÈ ische GewaÈ sserschutz) 10. Foundation for Nature and the Environment (Stichting Natuur en Milieu) 11. German association for water protection 12. International Rhine Commission 13. International Rhine Group 15. Rhine waterworks (Arbeitsgemeinschaft Rheinwasserwerke ARW)	1. Utrecht University
13	From Planning to Implementation: Top Down and Bottom Up Approaches for Collaborative Watershed Management		1. European Commission 2. Ministry of Environment 5. state environmental agency NLWKN (Lower Saxony Land, Water, Coast, and Nature Protection agency).	1. The Ohio State University School of Environment and Natural Resources 2. University of Washington 3. Leuphana University 4. European Parliament

14	Germany's Light Version of Integrated Water Resources Management		1. Alliance for Environment and Agriculture 2. Department for Water and Soil 3. Ems Council (Emsrat) 4. Ems International Coordination Group 5. Ems International Steering Committee 6. Ems River Basin Association (FGG Ems) 7. European Commission 8. Federal Environment Ministry 9. Federal State Ministry for Environment 10. International Commission for the Protection of the Elbe 11. International Commission for the Protection of the Rhine 12. International Water Management Institute (IWMI) 13. LAWA 14. Lower Saxony State Agency for Water Management, Coastal and Nature Protection (NLWKN) 16. Mecklenburg-Vorpommern State Agency for Environment, Nature Protection and Geology (LUNG) 17. Ministry for Environment of Lower Saxony 18. Ministry of Agriculture, the Environment and	1. Leibniz Institute of Agricultural Development 2. Berlin–Brandenburg Academy of Sciences and Humanities
15	Heavy metal pollution in the Rhine Basin		1. International Commission for the Protection of the Rhine against Pollution 2. Organization for Economic and Cooperative Development (OECD)	1. Internntionol Institute for Applie Systems Analysis in Laxenburg, Austria. 2. Princeton University
16	Implementation and integration of EU environmental directives. Experiences from The Netherlands		1. European Commission 2. European Union	1. Wageningen University
17	Integrated water management for the Rhine river basin, from pollution prevention to ecosystem improvement		1. Commission of the European Community 2. European Commission 3. International Commission for the Hydrology of the Rhine 4. International Commission for the Protection of the Rhine (ICPR) 5. Rhine Commission	1. International Commission for the Protection of the Rhine
18	International Commission for the Protection of the Rhine			
19	Multi-level governance, policy implementation and participation: the EU's mandated participatory planning approach to implementing environmental policy		1 European Commission 2. European union (EU)	1. Leuphana University 2. Ohio State University
20	Protection of the Rhine River Against Pollution		1. International Commision for the Protection of the Rhine River Against Pollution. 2. Rhine commission 3. Rotterdam Waterworks	
21	Relationship between the "Rhine 2040" programme and the Sustainable Development Goals (SDGs) of the UN 2030 Agenda		1. ICPR	
22	Rhine 2020 and Rhine 2040			
23	Rhine and Salmon 2020		1. ICPR	

24	Rhine Case Study - UNESCO		1. Central Commission for Navigation on the Rhine (CCNR) 2. Congress of Vienna 3. Elbe Commision 4. International Commission for the Hydrology of the Rhine Basin (CHR) 5. International Commission for the Protection of the Rhine (ICPR) 6. International Hydrological Programme (IHP) of UNESCO 7. Lake Constance Commsion 8. Moselle and Sarre Commision	1. UNESCO
25	River-basin planning and management: the social life of a concept		1. Compagnie Nationale du Rhône (CNR) 2. Global Water Partnership 3. International Network of Basin Organizations (INBO) 4. Tennessee Valley Authority (TVA)	1. Institut de Recherche pour le Développement, France
26	Spatial Fit, from Panacea to Practice: Implementing the EU Water Framework Directive		1. Academy for Spatial Research and Planning (ARL) 2. Environment Ministry 3. European Commission 4. European Communities 2000 5. German Advisory Council 6. LAWA	1. Leibniz Institute for Regional Development and Structural Planning (IRS)
27	Sustainable water resource management: River basin management and the EC Water Framework Directive		1. European Commission for Environmental Protection 2. United Nations 3. World Water Council	1.Technical University of Iasi, Iasi, Romania
28	The EC Water Framework Directive – An Instrument for Integrating Water Policy		1. European Environment Agency (EEA) 2. EC Commission 3. EC Council on Environment 4. Council on the Protection of Groundwater Against Pollution	1. Institute of Transnational Legal Studies (METRO), Maastricht University
29	The EU Water Framework Directive - A key to catchment-based governance		1. European Commision 2. United Nations Economic Commission for Europe 3. Council of Environment Ministers	1. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
30	The EU water framework directive: measures and implications		1. STOA Unit of the European Parliament 2. Centre for Rural Economy	1. University of the Aegean 2. Imperial College of Science, Technology & Medicine

31	The implementation of the Water Framework Directive in The Netherlands: Does it promote integrated management?		1. Environmental Assessment Agency 2. Ministry of Agriculture, Nature and Food Quality (LNV) 3. Ministry of Environment and Infra structure (E&I) 4. Ministry of Housing, Spatial Planning and the Environment (VROM) 5. Ministry of Transport, Public Works and Water Management (V&W) 7. National Water Commission (NWO) 9. Rijkswaterstaat 10. STOWA (the foundation for applied water research of the water boards, provinces and the Ministry of Infrastructure and the Environment) 11. waterboard Brabantse Delta 12. Ministry of Infrastructure and the Environment 13. waterboard Hollands Noorderk wartier 14. waterboard Rijnlan	1. Delft University of Technology
32	The international financing of environmental protection: Lessons from efforts to protect the river Rhine against chloride pollution		1. Ijsselmeer 2. International Association of Waterworks in the Rhine Basin (IAWR) 3. International Commission for the Protection of the Rhine against Pollution (ICPR) 4. Ministry of Transportation and Public Works 5. Institute for Environmental Damages, Erasmus University, Rotterdam 6. Swiss Ministry of Foreign Affairs 7. Rijkswaterstaat, Delft, the Netherlands 8. internationale Arbeitsgemeinschaft der Wasserwerke im Rheineinzugsgebiet, IAWR, Amsterdam 9. German Ministry of the Environment 10. Swiss Office for the Environment 11. MdPA, Mulhouse, France	1. International Relations at the Swiss Institute of Technology (ETH) in Zurich
33	The Protection of the Rhine Against Pollution		1. Central Commission for the Navigation of the Rhine (CCNR) 2. Convention for the Protection of the Rhine Against Chemical Pollution 3. Council of Europe 4. European Economic Community (EEC) 5. Organization for Economic Cooperation and Development (OECD) 6. Protection of the Rhine Against Pollution by Chlorides 7. Internatioal Commission of Koblenz 8. Koblenz Commision 9. Moselle and Sarre Commision	1. Research, National Center for Scientific Research, France 2. European Council on Environmental Law
34	The Rhine River Basin		1. Central Commission for the Navigation of the Rhine (CCNR) 2. Convention on the Protection of the Rhine against chemical 3. Convention on the Protection of the Rhine against Pollution 5. International Commission for the Hydrology of the Rhine basin (CHR/IKHR) 6. Rijkswaterstaat Waterdienst, Arnhem 7. Dutch Ministerie van Verkeer and Waterstaat (Rijkswaterstaat) 8. Deutsche Forschungsgemeinschaft 9. Global Runoff Data Centre GRDC 10. Federal Office for the Environment 11. Federal Institute of Hydrology BfG in Koblenz 12. Landesumweltamt f€ur Nordrhein- Westfalen 13. Landesamt f€ur Umwelt 14. Wasserwirtschaft und Gewerbeaufsicht Rheinland-Pfalz	1. Swiss Federal Institute of Aquatic Science and Technology 2. University of Konstanz 3. Institute for Water and Wetland Research (IWWR), Faculty of Science, Radboud University 4. Institute for Zoology, University of Cologne,

35	The Water Framework Directive as an approach for Integrated Water Resources Management: results from the experiences in Germany on implementation, and future perspectives		1. European Commission 2. European Council 3. European Directives 4. Germany's Joint Task for the Improvement of Agricultural Structures and Coastal Protection (GAK) 5. International Commission for Protection of the Elbe 6. LAWA 7. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety 8. German Federal Environment Agency 9. German Federal Ministry for the Environment 10. Federal Institute of Hydrology	1. Helmholtz Centre for Environmental Research-UFZ 2. Umweltbundesamt, Wo¨rlitzer Platz 1,
36	The Water Framework Directive: Redesigning the Map of Europe?		1. (Länder) Ministry MUNLV 2. national water agency (Rijkswaterstaat) 3. Ministry of Transport and Public Works. 4. Bezirksregierung 5. British Environment Agency 6. Ministry of Agriculture 7. Flanders basin committees 8. Danish Ministry of Finance	1. Radbound University
37	Transboundary flood risk management in the Rhine river basin		1. European Economic Area (EEA) 3. International Commission for the Protection of the Rhine (ICPR) 4. International river basin district of the Rhine (IRBD) 5. Plenary Assembly	1. Secretariat of the International Commission for the Protection of the Rhine (ICPR), Koblenz, Germany
38	Transforming European Water Governance? Participation and River Basin Management under the EU Water Framework Directive in 13 Member States		1. European Commission 2. LAWA (Länderarbeitsgemeinschaft Wasser) 3. Ministry of Environment 4. National Council of Water Management 5. National Water Management Authority 6. Polish Regional Water Management Boards	1. Leuphana University 2. University of Exeter 3. James Hutton Institute 4. The Open University, Milton Keynes 5. Forschungszentrum Jülich, Institute for Energy and Climate Research 6. Universität Bonn 7. Centre for Social Innovation (CSI), Vienna 8. University of Leeds 9. DelPar Environment, Sweden 10. Leuphana University 11. Karlstad University 12. Universidad de Sevilla 13. TU Kaiserslautern 14. Open University of the Netherlands 15. VU University Amsterdam 16. University of Dublin 17. UNESCO Institute for Water Education, Delft 18. Memorial University of Newfoundland

39	Uncertainty management strategies: Lessons from the regional implementation of the Water Framework Directive in the Netherlands		1. De Dommel 2. Dinkel 4. European Commission 5. European Court of Justice (ECJ) 6. Ministry of Agriculture, Nature and Food Quality (ANF) 7. Ministry of Housing, Spatial Planning and the Environment (HSPE) 8. Ministry of Transport, Public Works and Water Management (TPW) 9. Noorderzijlvest 10. Regge 11. Vallei en Eem 12. Zeeuwse Eilanden	1. Division Transport and Mobility, The Netherlands 2. Utrecht University
40	Undermining European Environmental Policy Goals? The EU Water Framework Directive and the Politics of Exemptions		1. CIS Working Group on Water and Economics 2. CIS working groups 3. Council of the European Union 4. Environmental Action Programme (EAP) 5. European Commission	1. University of Leeds
41	Western Europe's Artery: The Rhine		1. Central Commission for Navigation on the Rhine (CCNR) 2. EC Commission 3. European Economic Community (EC) 4. International Commission for the Pollution of the Rhine 5. Moselle and Sarre Commision	1. Netherlands Ministry of Transport, Public Works and Water Management 2. Directorate General for Public Works and Water Management 3. General Directorate, International Policy Division
42	What participants do. A practice based approach to public participation in two policy fields		1. Department of Water Works of the Ministry of V&W 2,. European Commission 3. Ministry of Transport, Public Works, and Water Management 4. national employers' organization (VNO-NCW) 5. national organization for agriculture and horticulture (LTO) 6. Overlegorgaan Water en Noordzeeaangelegenheden (OWN)	1. Delft Technical University 2. Wageningen University
43	What Role for Public Participation in Implementing the EU Floods Directive? A Comparison With the Water Framework Directive, Early Evidence from Germany and a Research Agenda		1. European Commission 2. LAWA (Länderarbeitsgemeinschaft Wasser) 3. NLWKN	1. Leuphana University, Germany