



# Local governments and Integrated Water Resources Management in the Rhine River basin in Germany

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## **Executive Summary**

The Rhine River basin contains a total of nine countries and is the most important waterway for transporting goods in western Europe. The river basin has a long history of integrated management brought about through its importance for a range of economic activities and, more recently, through the need to improve the natural river environment and protect against flooding. In Germany, such integrated management has tended to be carried out at regional, national and international levels of government and on the whole the opportunities for local governments to contribute to planning decisions that are not confined to within their local boundaries has been rare.

This situation has in recent years been changing, as the importance of local water resources management on a regional scale is increasingly recognised. The introduction of new water policy, such as the European Union Water Framework Directive, has made it easier (and to some extent obligatory) for local governments in Germany to participate increasingly in the management of water resources. There are now a number of examples of local governments taking advantage of these developments as they see the benefits that can be gained by influencing higher level decision-making in water resources.

As well as being presented with opportunities to contribute more to water resources management beyond their local boundaries, local government are also in a unique position to interact with local stakeholders and the general public within their constituency. Stakeholder involvement in the development of local water bodies is becoming increasingly common and local governments are recognising the advantages of raising awareness among the general public of the importance of water and the need to protect local resources within the community.

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## Preface

The following report is an output of LoGo Water<sup>1</sup>, a research project aiming to improve the capacity of local governments to adopt IWRM, and thus contribute to the achievement of water-related Millennium Development Goals (MDGs). The project focuses on the region of the Southern African Development Community (SADC) and here particularly on the countries of the Limpopo river basin. It involves eight associated local governments from this basin in South Africa, Botswana, Zimbabwe and Mozambique<sup>2</sup>. In addition, the research draws lessons from experiences in several countries in the European Union (EU) and the potential relevance of these lessons in the African context.

Activities of the LoGo Water project include:

1. Reviewing existing knowledge and experience on the role of local governments in water resources management, especially in SADC countries and the EU.
2. Identifying an effective role for local government in IWRM in SADC countries.
3. Developing a strategy to support local governments in SADC countries to become involved in IWRM.

The project is carried out collaboratively by a consortium of African and European research institutes, resource centres and local governments<sup>3</sup>. Further information can be found at [www.iclei-europe.org/logowater](http://www.iclei-europe.org/logowater).

This report is part of the first activity listed above and investigates IWRM involvement by local governments in the German section of the Rhine basin. It is complimentary to the report '*Local Governance in Integrated Water Resources Management in the Netherlands*'<sup>4</sup> (J. Warner, S. Smits, M. Winnubst, J. Butterworth, 2006) that looks at the Dutch part of the Rhine basin.

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<sup>1</sup> LoGo Water: Towards effective involvement of local government in Integrated Water Resources Management (IWRM) in river basins of the Southern African Development Community (SADC) region, EC Contract 003717

<sup>2</sup> The associated local governments are: Selebi-Phikwe Town Council and Serowe/Palapye District Council in Botswana; the Municipality of Chokwé and the Municipality of Xai-Xai in Mozambique; Makhado Local Municipality and Tshwane Metropolitan Council in South Africa; and Beitbridge Rural District Council and the City of Bulawayo in Zimbabwe.

<sup>3</sup> The partners are: ICLEI - Local Governments for Sustainability, European Secretariat, Germany; Centre for Ecology and Hydrology (CEH), United Kingdom; Oxford University Centre for the Environment (OUCE), United Kingdom; Foundation for a New Water Culture (FNCA), Spain; IRC International Water and Sanitation Centre, The Netherlands; ICLEI - Local Governments for Sustainability, Africa Secretariat, South Africa; Institute for Natural Resources (INR), South Africa; Institute for Water and Sanitation Development (IWSD), Zimbabwe; International Union for Conservation of Nature (IUCN), Mozambique Office, and the Kalahari Conservation Society (KCS), Botswana.

<sup>4</sup> The Dutch report can be downloaded from [www.iclei-europe.org/logowater](http://www.iclei-europe.org/logowater)

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## Abbreviations, acronyms and German terminology

<i>Bund</i>	The German national state
<i>Bundesland</i>	Federal State (in Germany); plural: <i>Bundesländer</i> , ( <i>länder</i> for short)
<i>Bundeswasserstraßen</i>	Federal waterways
<i>Deutscher Städtetag</i>	German Association of Cities
DWA	<i>Deutschen Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V.</i> (German Association for Water, Wastewater and Waste)
EC	European Commission
EU	European Union
<i>Hochwassernotgemeinschaft</i>	Flood Urgency Action Association
<i>Hochwasserschutzzentrale</i>	Centre for Flood Protection
ICPR	International Commission for the Protection of the Rhine
IAWR	International Association of Waterworks in the Rhine
IWRM	Integrated Water Resources Management
LAWA	<i>Länderarbeitsgemeinschaft Wasser</i> (Federal Working Group on Water Issues)
MDG	Millenium Development Goals
<i>Nachbarschaftsverband</i>	Neighbourhood Association
NGO	Non Governmental Organisation
RAP	Rhine Action Plan
<i>Regierungspräsidium</i>	Regional Council (subdivision of <i>Bundesländer</i> , also referred to as <i>Regeierungsbezirk</i> )
SADC	Southern African Development Community
<i>Umweltbundesamt</i>	The Federal Environment Agency
VDG	<i>Vereinigung Deutscher Gewässerschutz e.V.</i> (Association for the Prevention of Water Pollution in Germany)
WFD	Water Framework Directive (of the European Union)
<i>Zweckverband</i>	Single-purpose inter-municipal association

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# 1 Introduction

The aim of this report is to present an overview of the involvement of local government in the management of water resources in the German Rhine basin. A central question has been how local government is able to influence decision-making on water resources issues at local as well as regional<sup>5</sup>, national and international level. Another key point of interest has been how local governments collaborate with each other in water resources management.

To better understand the opportunities and limitations faced by local governments in this sector, it is necessary to look at the current frameworks in which they operate, and the extent to which they can develop and set their own policies within these.

The overriding framework for all water management issues in the European Union (EU) is the EU Water Framework Directive (WFD). All EU countries have to comply with the WFD and local governments are also expected to participate in the implementation of objectives. The WFD still requires certain reforms within the current national and sub-national frameworks in Germany which could provide increased opportunities for local governments to take part in water resources management.

## 2 Methodology

This document is complimentary to the report entitled *Local Governance in Integrated Water Resources Management in the Netherlands*<sup>6</sup> (J. Warner et al., 2006) that looks at the Dutch Rhine basin. The authors have used a similar methodology to compile the basis of information.

For the literature review, the authors looked through electronic and printed publications such as official public documents, research papers and journal articles produced by the EU, German government agencies, river basin authorities and other regional water management institutions, NGOs and others.

Additional information was gathered from interviews with selected individuals having specialist knowledge of the key areas being looked at in the report. An attempt was made to contact experts from different levels of government and a range of organisations and institutions so as to get information from sources holding a variety of views and opinions. The focus of the interviews was largely on the involvement of local government in the management of the water resources in the Rhine basin. Particular emphasis was placed on determining the degree of collaboration that exists among local governments within the basin, as well as the cooperation between local governments and external stakeholders, such as the general public, higher level government organisations and institutions, and national and regional associations.

For a list of the persons interviewed, please see the acknowledgements on page vii.

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<sup>5</sup> This report uses the term 'regional' to refer to the sub-national level and not a multi-national grouping

<sup>6</sup> See [www.iclei-europe.org/logowater](http://www.iclei-europe.org/logowater)

### 3 Water resources in the German Rhine river basin

#### 3.1 Some facts and figures

The Rhine river basin covers an area of about 185,000 km<sup>2</sup> in North West Europe, features in 9 countries and contains a population of around 58 million people. The river itself is 1,320 km in length. Originating in the Swiss Alps, the Rhine flows north through France, Germany and the Netherlands where it splits into a large delta before discharging into the North Sea (see Figure 1).

The Rhine is the most important inland waterway for transporting goods in western Europe with a number of economic centres located along its length. It is navigable by ocean going vessels to Mannheim in Germany and by barge as far as Basel in Switzerland.

Due to the importance of the Rhine for navigation, industry, water supply and tourism, the river has in the past been severely exploited. High water demands led to unsustainable abstractions and the quality of the river suffered as increasing volumes of polluted flows were discharged to its waters. Its poor state eventually led to the foundation of the International Commission for the Protection of the Rhine (ICPR), which was established by Germany, Switzerland, Luxembourg, France and the Netherlands in 1963. Since then there has been a dramatic improvement in the river's health, most clearly indicated by the return of salmon in the late 1990s. Today the ICPR continues to play a major role for the Rhine basin and coordinates national efforts to tackle pollution, threats to the river's ecosystem and the risks of flooding (see Section 4.3).

In Germany, the Rhine flows for 865 km and has a catchment area of 105,000 km<sup>2</sup> that is host to 34 million inhabitants. The German portion includes some of the most intensive and diverse uses of the river within the basin. The river forms part of the national border with Switzerland and France in the South and flows through the heavily industrialised and densely populated areas of the Rhine-Neckar and Ruhr regions before entering the Netherlands downstream of Emmerich on the Rhine.

Potable water supplies in the German Rhine basin come predominantly from groundwater that tends to be of higher quality than other sources due to natural filtration processes. However, alternative sources such as direct surface water abstraction and bank filtrate<sup>7</sup> are required in certain areas such as the Ruhr region where coal mining has contaminated the groundwater supply and parts of Baden-Württemberg due to the local geology. In these cases the quality of the surface water in the Rhine and its tributaries has a direct impact on securing a reliable supply of drinking water for the local population without unreasonable treatment costs.

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<sup>7</sup> Bank filtrate is the abstraction of river water passed through riverbanks. This filtration process provides natural pre-treatment that improves the quality prior to conventional water treatment methods.



Figure 1: The Rhine basin (Source: The International Commission for the Protection of the Rhine, [www.iksr.org](http://www.iksr.org))

## 3.2 Water resources issues

The most common and significant issues affecting water resources in the German Rhine basin are related to water quality and flooding. The water scarcity is on the whole not an issue and dry periods rarely result in user restrictions or long-term environmental impacts.

### 3.2.1 Water quality

For many years the Rhine was subject to heavy pollution from the chemical and metallurgic industry, food producing industries, mines and domestic wastewater and by

the 1970s the river was virtually biologically dead. Following a 1986 fire at the Sandoz chemical plant in Basel in which large amounts of detergent entered the river resulting in massive fish kills, the ICPR developed the Rhine Action Plan (RAP) that was accepted by the riparian states and the European Commission (EC). The RAP set a number of targets to reduce pollution and increase biodiversity in the river that have largely been met through decreases in traditional pollutants. The Rhine now compares favourably against other German rivers when assessing the likelihood of failing the WFD water quality objectives (see Figure 2). However, despite these achievements the Rhine is still receiving large amounts of pollutant substances, many of which are linked to agricultural and urban run-off. To ensure that improvements continue to be made and are maintained in the future, a sequel to the RAP has been produced by the ICPR entitled “Rhine 2020 Programme for the Sustainable Development of the Rhine” (2001).

Environmental issues are of relatively high concern in Germany. High profile pollution events such as the Sandoz disaster have done a lot to raise awareness of the need to protect the Rhine and improve its water quality. It is therefore likely that political pressure from environmental NGOs and other interest groups will result in further water quality and ecological improvements in the Rhine over the coming years.

River basin	Percentage results for good water status			Percentage results for good ecological status			Percentage results for good chemical status		
	NAR	PAR	AR	NAR	PAR	AR	NAR	PAR	AR
Danube	21%	24%	55%	22%	23%	55%	91%	8%	1%
Eider	0%	5%	95%	0%	5%	95%	99%	0%	1%
Elbe	12%	25%	63%	15%	22%	63%	70%	24%	6%
Ems	2%	52%	46%	2%	13%	85%	8%	87%	5%
Maas	0%	18%	82%	0%	18%	82%	17%	64%	19%
Oder	13%	12%	75%	14%	12%	73%	84%	15%	1%
<b>Rhine</b>	<b>16%</b>	<b>22%</b>	<b>62%</b>	<b>17%</b>	<b>21%</b>	<b>62%</b>	<b>55%</b>	<b>38%</b>	<b>7%</b>
Sclei/Trave	6%	3%	91%	6%	3%	91%	99%	0%	1%
Warnow / Peene	20%	-	80%	12%	-	88%	55%	-	45%
Weser	19%	48%	33%	21%	49%	30%	33%	48%	19%
Number of water bodies assessed	Approximately 9,800			Approximately 9,800			Approximately 7,700		

**Key:** NAR = not at risk of failing the WFD objectives; PAR = possibly at risk of failing the WFD objectives; AR = at risk of failing the WFD objectives

Figure 2: Inventory results for rivers and surface waters in German river basins (Source: Environmental Policy, Water Framework Directive – Summary of river basin district analysis 2004 in Germany, *Umweltbundesamt* 2005)

### 3.2.2 River floods

The Rhine is partly fed by snowmelt from the Alps in the upper reaches. In spring, when the snow starts to melt and precipitation is still high, peak discharges occur giving rise to floods. The natural risk of flooding on the Rhine has been further increased by hydraulic alterations to the rivers natural course, intensive construction and land use development on the flood plains and a lack of integration between water management, transport policy

and nature conservation objectives. On the upper Rhine, the straightening of the river channel between Basel and Karlsruhe in the mid 19<sup>th</sup> century has reduced the natural floodplain by 60%.

Due to the focus on water quality, flood management on the Rhine was of limited interest in Germany until the floods of 1993 and 1995 dramatically forced the issue into the public arena. With the inundation of many cities, towns and villages along the Middle and Lower Rhine occurring twice in quick succession, the need for improved flood prevention and protection measures became obvious. This need has since been further emphasised by the threat of climate change with forecasts predicting future increases in the magnitude and frequency of flooding events.

Responses to the threat of flooding at the river basin level include the ICPR coordinated “Action Plan for Floods” which was adopted in 1998 with the aim of improving precautionary flood protection and risk awareness. Furthermore, a “Rhine Atlas” was developed in 2001 in order to highlight areas most at risk from flooding. In Germany, flood management has included *Bundesland* (federal state) level programmes such as the flood risk and damage limitation strategies developed by the state of Baden-Württemberg which examine flood control measures through the conservation and restoration of the natural river ecosystem. Groups that cooperate across *Bundesland* boundaries have also been developed at the local level such as the *Hochwassernotgemeinschaft* (Flood Urgency Action Association) which provides information on flood response and is involved in flood prevention and mitigation planning across *Bundesländer* (federal states) boundaries.

## 4 The governance of water resources management in Germany

The roles and responsibilities for water resources management are divided among the national, *Bundesland* and local levels of the German federal government structure (see Figure 3). Standards and regulations at each level are set within the overarching framework of EU legislation of which the Water Framework Directive is the most significant.

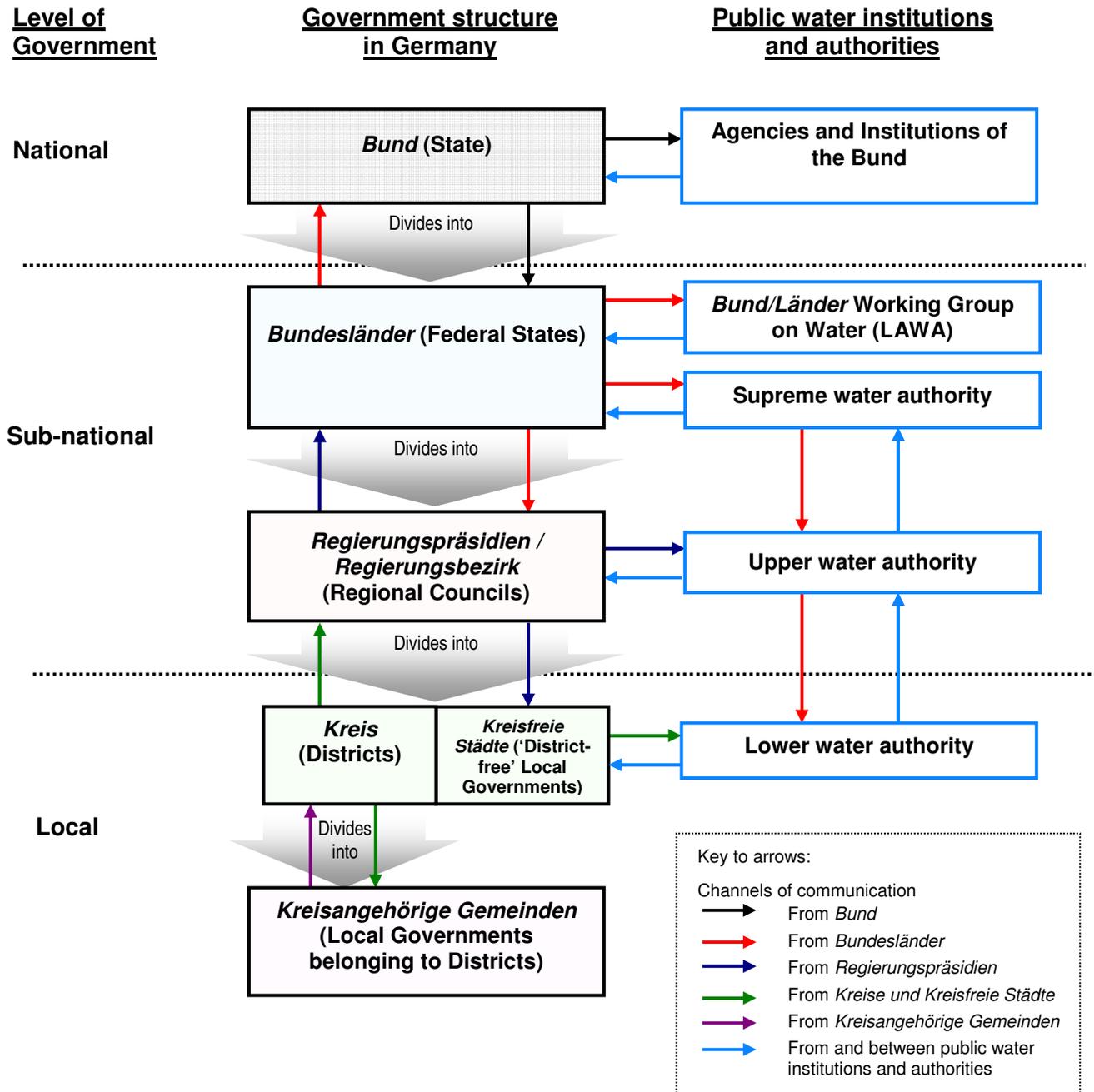


Figure 3: Diagram of the German federal government structure and how this interacts with public water institutions and authorities

## 4.1 The overall framework set by the European Union

The EU sets the overall water policy framework to which national legislation enacted by member states must conform. This framework is predominantly made up of the following three directives:

- The Urban Waste Water Treatment Directive 91/271/EEC (1991)
- The Drinking Water Directive 98/83/EC (1998)
- The Water Framework Directive 2000/60/EC (2000)

Of these three directives, the Water Framework Directive (WFD) is the most important EU water policy and sets the objectives for the sustainable management of water in all 25 EU countries. The WFD aims to:

- prevent and reduce pollution;
- promote sustainable water use;
- protect the aquatic environment;
- improve the status of aquatic ecosystems; and
- mitigate the effects of floods and droughts.

Meeting the aims of the WFD is legally obligatory and thus drives decision-making in current EU member states. They are required to give a detailed account of how the directive objectives will be entered into national legislation and ultimately met at regional and local level. This must be demonstrated through the development of river basin management plans which, depending on the hydrological boundaries, may have to cross national and regional borders.

The different levels of the German water management structure raise questions over the allocation of responsibilities for the implementation of the WFD. The WFD requirement for river basin management across national and state borders by means of a coordinated approach is at odds with the political-administrative boundaries that currently apply to water management in Germany. There is therefore a need to reform the existing water management structure so that it complies with both the federal system of government and the WFD requirements. This is a considerable challenge yet the legal mechanisms to transpose the management objectives of the WFD into both German national and *Bundesland* law has been initiated through amendments to the Water Acts at national level and the Water Acts and other relevant legislation at *Bundesländer* level.

At *Bundesland* level, the LAWA (*Länderarbeitsgemeinschaft Wasser* – the Federal Working Group on Water Issues) (see Section 4.4) has produced national WFD guidelines for use by the competent authorities of each *Bundesland*. However, due to the high level of autonomy enjoyed by the *Bundesländer*, these guidelines deliberately provide plenty of scope to allow *Bundesländer* to interpret them as they see fit. This is particularly the case with public participation in river basin management decision-making, a key requirement of the WFD, in which involvement differs widely between the different German *Bundesländer*.

Additional developments at *Bundesland* level also include the setting up of regional fora to allow consultation with relevant parties and provide opportunities for the exchange of information on the WFD.

#### **4.1.1 The EU Water Framework Directive and Local government**

Although the WFD addresses national states, local government is expected to play a role in its implementation. Paragraph 14 of the WFD states that: “The success of this Directive relies on close cooperation and coherent action at Community, Member State and local level as well as on information, consultation and involvement of the public, including users”. As such, all interested parties are encouraged to be involved in the creation of river basin management plans and local governments will therefore need to be provided with the opportunity to contribute fully to ensure that local issues and needs are addressed.

The WFD requires River Basin Districts to be established that will follow hydrological boundaries. In Germany the role of local governments must therefore be reconsidered as in many *Bundesländer* these have traditionally been responsible for the conditions of the local water bodies within, and not beyond, their local boundaries. The *Deutscher Städtetag* (German Association of Cities), which exists at *Bundesland* and national level and assists local government to get involved in higher level water management decision-making that is likely to influence local responsibilities, has been given the task of advising local governments on compliance with the WFD. It is, however, a challenge to raise awareness of the larger scale water management issues the WFD needs to address with the main local actors due to the lack of interaction that in many cases exists between neighbouring local governments and the different levels of government.

## **4.2 The different levels of government**

### **4.2.1 The national level: Federal Government**

The national government is responsible for the national legislation and the definition of national tasks of water management as well as transboundary cooperation. The Federal Water Act is the most important piece of legislation for the management and planning of river basins and provides a general legal framework with which the individual *Bundesländer* Water Acts should work in conjunction. Concerning water resources management and supply, a number of federal ministries are responsible for different fields including:

- The Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety – responsible for the protection of water bodies;
- The Federal Ministry of Economics and Technology – responsible for water supply systems and the water industry;
- The Federal Ministry of Education and Research – responsible for developing new technologies;
- The Federal Ministry for Health – responsible for the quality of drinking water; and
- The Federal Ministry for Economic Cooperation and Development – responsible for international cooperation.

When developing legislation, the ministries can utilise advisory authorities such as the Federal Environment Agency and the Federal Institute of Hydrology, and also private commissioned agencies such as the Project Agency for Water Technology (*Bereich Wassertechnologie und Entsorgung*) and the Organisation for Technical Cooperation (*Deutsche Gesellschaft für Technische Zusammenarbeit - GTZ*).

#### **4.2.2 The sub-national level: *Bundesländer* and *Regierungspräsidien***

The Federal Republic of Germany is divided into 16 *Bundesländer*. The larger *Bundesländer* are further subdivided into a regional tier of between three and seven *Regierungspräsidien* (Regional Councils – known in certain *Bundesländer* as *Regierungsbezirk*). The remaining *Bundesländer* are divided directly into local districts.

Within the framework of the federal laws, each *Bundesland* is responsible for the management of water resources in their territories. They are free to develop their own regional water acts and ordinances as long as these comply with the national and European frameworks. Legislative power within the *Bundesländer* is held by parliaments which debate and implement water regulation and laws such as the transposition of the WFD requirements to lower levels of government.

Between the *Bundesland* and local levels of government is the *Regierungspräsidien*, a regional tier of government that has responsibilities parallel to the *Bundesland* for regional water management.

In most *Bundesländer* water resources are managed at different levels of administration through three levels of Water Authorities in which water resources management regulation is enforced. The tasks allocated to these can differ between *Bundesländer* but the three levels usually follow the general structure of *Bundesland* administration. The Water Authorities are as follows:

- **Supreme Water Authority:** The Supreme Water Authorities are connected to the Ministry of the Environment or equivalent of the respective *Bundesland* that is responsible for strategic decisions in water management and supervision of lower water authorities and agencies.
- **Upper Water Authority:** The upper water authorities are located at the *Regierungspräsidien* which are responsible for regional water management planning, permitting, licensing (for uses with regional impact) and other water management functions, and administrative procedures.
- **Lower Water Authority:** The lower water authority lies with the cities, city districts and rural districts which are responsible for permitting, licensing (for small uses), monitoring, technical advice, and other enforcement functions (see also Section 4.2.3).

Most *Bundesländer* also have technical agencies in place to offer assistance and advice to the Water Authorities for the extensive technical requirements of water resources management. This can include functions such as flood warning and data collection.

Each *Bundesland* sharing the Rhine basin has a specialist body whose roles include representing the *Bundesland* at river basin level through the German Commission for the

Protection of the Rhine. These bodies make up the German delegation to the ICPR and are usually the *Bundesland* bureau or agency for environmental protection and water management.

An exception to the *Bundesländer* responsibility for exercising executive powers in water management is the maintenance and development of *Bundeswasserstraßen* (federal waterways) which remains under the control and administration of the national government.

#### **4.2.3 The local level: districts, cities and towns**

With regards to water resources management, local government has the responsibility for the development and maintenance of local water bodies such as groundwater resources and small lakes, tributaries and streams that are within its area. It is usually directly in local governments' interest to protect local water resources as, along with the overall environmental benefits, the maintenance of the local source of drinking water, aquifers in most cases, has direct implications on the local water supply. Large pollution incidents can have long term effects on the cost and reliability of delivering local supplies as contaminated groundwater can result in higher treatment costs and even the abandonment of sources. In cases where local governments foresee these sources to be at potential risk, they are in a position to apply appropriate laws that go beyond the *Bundesland* standards to ensure the protection of the source.

In accordance with the water acts of individual *Bundesländer*, the responsibility of the organisation and implementation of water supply and sewage disposal belongs to local government. To meet the costs incurred through carrying out this service, local governments charge consumers with tariffs and fees. Local government is in a position to make the final decision with regards to, for example, wastewater treatment standards, and as a result decisions in certain areas of water management are often taken in close proximity to the water resources affected. This allows specific laws that go beyond national standards to be applied to local water bodies, such as river catchments with delicate ecosystems, although these must still comply with *Bundesland*, national and European frameworks.

Local government has a degree of flexibility in how they manage the delivery of mandates which are related to water resources, although this also varies within different *Bundesländer*. For example, in the delivery of water supply and the disposal of wastewater, local governments have the power to privatise operations and management to some extent although they must retain the ultimate responsibility for supplying these services to the local population. Gelsenwasser AG and RWE AG (until 1990 Rheinisch-Westfälisches Elektrizitätswerk AG) are examples where large private companies are operating the water services of more than one local government. Options are more limited in the wastewater sector where legally local governments are not allowed to transfer responsibility for wastewater collection and treatment to private companies. Many wastewater services are therefore run as semi-independent municipal companies.

To improve the management of water resources, local governments have the option of forming – or joining with – a *zweckverband*, which are inter-municipal associations created for a specific purpose such as water services (see Box 1). They can also cooperate

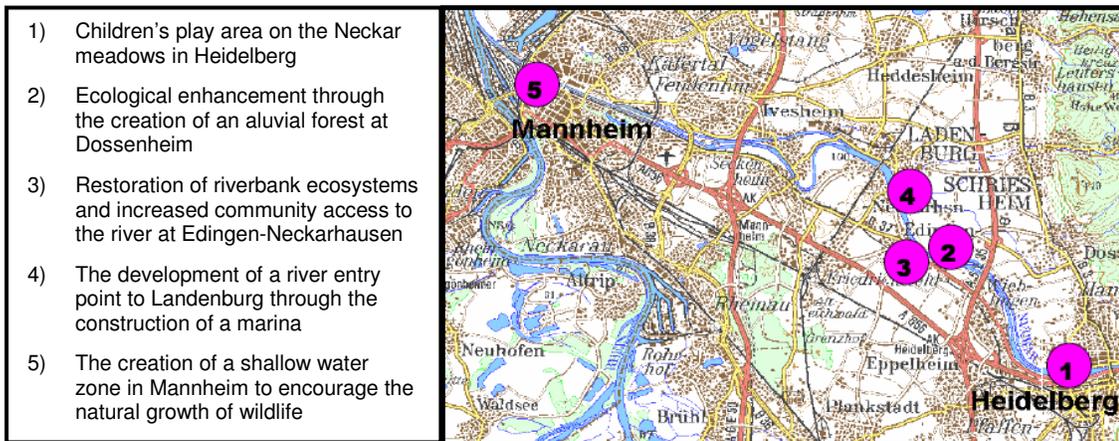
with various working groups that provide technical, financial and environmental support. Local government do not necessarily have to seek external support to achieve improvements in local water resources management. Examples where individual local governments have taken the initiative and have expanded their role in the management of water resources beyond the local boundaries also exist, such as the case of the *Hochwasserschutzzentrale* (Centre for Flood Protection) in Cologne (see Box 2).

**Box 1: The *Nachbarschaftsverband* Heidelberg-Mannheim – an integrated approach to water resources management and land-use planning**

The Mannheim-Heidelberg urban region is a densely populated and industrialised area of south-west Germany in which, due to the convergence of the Rhine and Neckar rivers, water resources play a prominent part in land-use planning.

In order to improve integration between the use of land and the management of the riparian environment, Mannheim, Heidelberg and 16 local governments in the area established the voluntary *Nachbarschaftsverband Heidelberg-Mannheim* (Heidelberg-Mannheim Neighbourhood Association). The association was created based on an existing *Zweckverband* with the aim of managing water resources as a whole. As such, the *Nachbarschaftsverband* covers a range of issues such as environmental protection, land-use planning, economic development and transport. Consequently it is important that those participating from each local government represent several of its departments and that all are willing to accept and implement the decisions taken.

Projects that the *Nachbarschaftsverband* has been involved with include the *Lebendiger Neckar* (Living Neckar) project, which is part of the larger NGO developed ‘Living rivers’ initiative, and the ‘Artery – *Flusslandschaften der Zukunft*’ (River Landscapes of the Future) in which the ‘Agenda Park Living Neckar’ and ‘Action Neckarkids’ projects were established with the aim of strengthening the links between the river and the community.



The above map shows the Mannheim – Heidelberg area and some of the schemes that were implemented during the Agenda Park Living Neckar project. (Source: *Nachbarschaftsverband Heidelberg-Mannheim*).

**Box 2: The *Hochwasserschutzzentrale* in Cologne – a local government driving internal and external coordination for more effective flood management**

The City of Cologne has over the years earned a reputation as the “flood capital” of Germany. Situated on the Lower Rhine in North Rhine-Westphalia and home to a population of just under a million inhabitants, the city experiences flooding on a regular basis.

Due to the flood prone nature of the city, the local *Hochwasserschutzzentrale* (Centre for Flood Protection) has a critical role and has developed to such an extent that it is now seen as a model for flood risk management elsewhere in Germany and abroad. The centre is in charge of developing a range of prevention measures and protection schemes that include not only the development of riverbanks, but also awareness raising and education programmes targeted at the local population.

As a local organisation that works with flooding issues that go beyond local boundaries, the Cologne *Hochwasserschutzzentrale* cooperates both with local governments elsewhere in the Rhine basin and also with higher levels of government. It is therefore a rare case where an autonomous local government organisation is closely involved with planning decisions that affect areas outside of its administrative boundaries.

Cooperation also takes place between other departments within the Cologne administration in particular land-use planning which is closely linked to flood risk and prevention. The centre is involved in the creation of unit development plans, which determine areas that can and can't be built upon, and have used their influence to prevent the development of commercial zones on areas close to the river.

### 4.3 International Commission for the Protection of the Rhine (ICPR)

The most important transboundary group in the Rhine basin is the ICPR. The ICPR is an international body tasked with coordinating national efforts to improve water quality, reduce the impact of flooding and encourage sustainable development of the Rhine. The riparian states of Germany, Switzerland, Luxembourg, France and the Netherlands signed the Convention on the International Commission for the Protection of the Rhine against Pollution in 1963 in response to public pressure to clean up the river that had become known as the “sewer of Europe”. The ICPR is made up of a Plenary Assembly, a coordination group and permanent and temporary working groups. The Plenary Assembly consists of delegations from the Rhine basin nations who vote on agreements and recommendations. Various observers can also cooperate with the commission and participate in discussions including relevant NGOs.

Despite not being bound by international law, recommendations made by the ICPR have mostly been adopted by the governments of the five participating countries. This is done through agreement by Rhine ministers, mostly environmental ministers from each country, who, unlike the plenary assembly, can take politically binding decisions to implement the ICPR recommendations. The Rhine ministers meet at Conferences of Ministers that are not formally part of the ICPR and held on an ad-hoc basis.

Since the establishment of the ICPR, water quality in the Rhine has improved significantly with contaminants and pollutant levels for a number of substances being reduced by between fifty and ninety percent from the early 1970s to the late 1980s. More recently, the responsibilities of the Commission have developed and moved from the

prioritisation of water quality improvement towards restoring the river biodiversity and ecosystem as a whole and, in the wake of the flooding experienced on large stretches of the river in the 1990s, flood management tasks.

The latest ICPR programme, “Rhine 2020 – Programme on the Sustainable Development of the Rhine” succeeds the successful Rhine Action Programme (see Section 3.2.1) and aims at further improvements to the Rhine ecosystem as well as advances in the areas of flood protection and prevention, and groundwater protection.

German interests in the ICPR are represented through the German Commission for the Protection of the Rhine. This is made up of representatives from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the Federal Ministry of Transport, Building and Urban Affairs, the Federal Foreign Office, as well as the LAWA representatives from the *Bundesländer* in the Rhine catchment. These are responsible for the planning and execution of the measures agreed upon by the ICPR in Germany. Local government does not have a seat on the ICPR but is rather represented through the specialist agencies at *Bundesländer* level. In special cases local governments have, however, been known to get involved indirectly through the setting up of NGOs which are recognised as observers by the commission as is the case with the *Hochwassernotgemeinschaft* (see Box 3).

**Box 3: The *Hochwassernotgemeinschaft* – how local governments managed to get a seat in the ICPR**

The ICPR is the most influential transboundary organisation within the Rhine basin through its ability to affect national, regional and local policy in each of the Rhine basin countries. The German delegation to the ICPR is limited to *bundesland* and federal level officials, and local governments are therefore only represented through higher levels of government.

However, the ICPR does recognise relevant NGOs as observers, a role that allows them to influence discussions and recommendations. To ensure increased local government representation on the ICPR, in 1990 the Cologne *Hochwasserschutzzentrale* (see Box 2) got together with other cities and towns in the Rhine basin and helped initiate the formation of the *Hochwassernotgemeinschaft* (Flood Urgency Action Association).

Based in Mainz, the *Hochwassernotgemeinschaft* is an NGO of 60 members made up of both local governments and community-based organisations. It is a member of the ICPR working group on flooding where, as it cooperates closely with cities, towns and communities throughout the Rhine basin, including Dutch municipalities, it has become an effective platform for local government cooperation. The association also regularly meets outside of the ICPR to discuss common issues and solutions. This helps to maintain cooperation among local governments in the Rhine basin.

#### 4.4 LAWA – the *Länderarbeitsgemeinschaft Wasser*

In order to achieve inter-governmental cooperation between *Bundesländer* that share watercourses, a joint working group called the LAWA was established as an amalgamation of the supreme water authorities of each of the German *Bundesländer*. The

role of the LAWA is to discuss and put forward recommendations for solving common problems within water resources management and legislation. This aims to create a standardised water management system across *Bundesländer* boundaries that remains flexible to regional requirements. On the national and international levels, the LAWA is involved in decision-making groups and is part of the German delegation to the ICPR. It also plays an important part in cooperating with EU committees and is closely involved in the implementation of the WFD in Germany.

Although the decisions and recommendations made by the group do not have legal backing, the LAWA nonetheless plays an important role in developing and maintaining a consistent approach to water resources management, protection and legislation across the *Bundesländer* as well as representing sub-national government in national and international decision-making processes.

## 4.5 Other relevant associations and networks

Due to its considerable size, the Rhine River basin is host to a large number of Rhine water resources management authorities and associations at national and transboundary level. The operation of these authorities and associations and how they interact with one another and the general public is essential in the management of the basin especially with regards to the WFD.

### 4.5.1 International associations and networks

Whereas the ICPR is the main coordinating body for international relations between the nations of the Rhine basin, a number of smaller scale arrangements between riparian states, local governments and organisations exist in different countries. The following are examples of associations and organisations that operate within the Rhine basin.

#### **International Association of Waterworks in the Rhine Catchment Area**

The IAWR (International Association of Waterworks in the Rhine Catchment Area) is an NGO that represents about 120 waterworks from 9 countries within the Rhine basin. Its objective is to protect the Rhine to the extent that the water quality is sufficient to gain drinking water using only natural treatment methods. There are a number of transnational projects being coordinated by the IAWR including a flood mapping project on the Mosel which is run jointly by Germany and Luxembourg. Local government is able to contribute directly as an external contact and also through the member waterworks themselves, many of which are operated by local authorities to varying degrees.

#### **RhineNet**

RhineNet is a group of multi-national partners that aim to develop participatory management of the Rhine by, amongst other methods, promoting international cooperation between citizens, institutions, authorities and municipalities. It has set up a number of projects that encourage transboundary cooperation including WFD awareness raising through the organisation of information sessions and a study for procedures into public participation in water management. Of the RhineNet partners, only the Environmental Office of the City of Karlsruhe is a local government representative, but

most of the projects include the participation of relevant local administrations and organisations.

#### **4.5.2 National and sub-national associations and networks**

Numerous water associations exist in Germany at local, *Bundesland* and national level to assist with the technical, economical and ecological aspects of water resources management. These can be established by public bodies, private enterprises and landowners and can vary in size from large, regional scale organisations to small neighbourhood initiatives.

At local level (within the Rhine basin) there are a number of associations not directly part of the local government. Many of these are working groups that aim to improve the water environment of the local area and often include members from civil society and NGOs, but also local government. Examples of working groups with strong civil society representation are “RegioWASSER 2005” in Freiburg, Baden-Württemberg, which aims to gather all the water management expertise in the region, and the “Man and Environment” group in the city of Karlsruhe which focuses on the re-naturalisation of the local River Alb. In both of these cases local government has also participated and worked with the general public and other interest groups to implement improvements to the conditions of local watercourses.

In addition, there are a large number of Non Governmental Organisations (NGOs) that focus specifically on the whole, or parts of, the Rhine basin and can influence decision making through stakeholder hearings. These can be linked to local governments but in many cases tend to have an influence in decision making at higher levels of authority.

Larger water associations that all levels of government, including local, can involve themselves in include the following:

#### ***DWA – Deutschen Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V. (German Association for Water, Wastewater and Waste)***

The DVA is a specialist technical and scientific organisation. Membership of this not for profit and politically independent association includes local governments, institutes of higher education, public authorities and private companies. The tasks of the DVA include offering expert advice on sustainable water resources management to legislative bodies and policy makers, training and education programmes, discussion networks and published materials.

#### ***VDG – Vereinigung Deutscher Gewässerschutz (Association for the Prevention of Water Pollution in Germany)***

The VDG association was established in 1951 with the objective of preserving and protecting water quality and quantity in German ground and surface water bodies. The association promotes active public involvement to achieve its aims and provides a wide range of information and training materials that are aimed at water supply operators, environmental organisations, schools, recreational groups and other stakeholders who are in a position to implement action at the local level. Membership includes private companies, public bodies, associations and individual members of the public. Activities carried out by the VDG includes the exhibition ‘*Wasser ist Zukunft*’ (Water is Future)

which is a temporary display that tours Germany on a regular basis raising awareness about water issues.

## 4.6 Public participation

Public participation in the management of the Rhine basin takes place at various levels and through a number of organisations, institutions and administrations. The level of participation differs in Germany from *Bundesland* to *Bundesland* although each should meet its responsibility to consult third parties such as nature protection organisations, citizens' action committees, or concerned individuals before making decisions. The WFD also requires public participation in decision-making and this has helped initiate new involvement processes at all levels of river basin management.

Public involvement in the management of natural resources has a long tradition in Germany. This is especially the case with water resources where, due to the variety of uses and the large number of stakeholders affected, organised public participation processes can be traced back over 200 years when mill authorisations could only be issued following the consideration of the interests of other water users in the catchment<sup>8</sup>. The current structure of public involvement in water resources has its foundation in the 1970s when increased environmental awareness prompted the drafting of new legislation concerning natural resources that included an intensification of stakeholder participation. More recently the need for active citizen involvement in water resources management has been strengthened through European legislation, most notably the WFD which includes public participation as one of the policy requirements.

Today in Germany, public involvement in water resources management is often focussed on awareness raising, the provision of information and consultation on the local water resources and the issues with which they are faced. Organised stakeholder groups such as water management associations and environmental NGOs are well established in the Rhine basin and have considerable experience in public participation processes as is their legal right. There are opportunities for organised stakeholder groups to get involved in decision making through official consultation procedures at all levels of administration, although the groups' role tends to be reactive as they are rarely involved in developing initial plans. The authorities have a tendency to rely on the stakeholder groups to provide the necessary platform for the broader public and therefore rarely offer initiatives to involve the general public directly.

The participation of organised stakeholder groups is of particular relevance at higher levels of decision making where it can be difficult for local government and the general public to be heard. At local level however, the groups are less involved when decisions are taken by city councils on local water issues. In cases where city councils' works committees meet in confidentiality, there are very few participatory mechanisms and also a lack of public information to inform the local population about the issues on which decisions are being taken. To improve this situation, certain *Bundesländer* have

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<sup>8</sup> Kampa, E., Kranz, N., Hansen, W., Madeira, N., and Vorwerk, A. (2003) *Public Participation in River Basin Management in Germany*, "From borders to natural boundaries".

introduced a system in which petitions signed by voters can bring about an official plebiscite, the decision of which can be equivalent to a city council decision.

However, as the WFD requires active participation of the general public in the development of river basin plans, further inroads beyond the legally required formalised participation mechanism that currently exists are likely to be necessary. Examples do exist in the Rhine basin where the general public has participated proactively in the development of initiatives and plans that have had major impacts on water resources in the Rhine basin. Such initiatives include the case of the Dreisam River in Baden-Württemberg where direct consultation involving a wide range of local stakeholders developed a future plan for the management of the river (see box 4).

**Box 4: The project ‘Our Dreisam – Future Dreisam’**

The Dreisam River is a small tributary of the Rhine which rises in the Black Forest in Southern Germany. The *Unsere Dreisam – Zukunft Dreisam* (Our Dreisam – Future Dreisam) project was set up in Freiburg as one of the projects developed by RhineNet, an NGO that advocates participative management for the Rhine. The project was part of the Local Agenda 21 activities in Freiburg as well as a response to the public participation requirements of the EU Water Framework Directive.

The project aimed to create a participatory management plan to improve the ecological quality of the river, develop it as a recreational facility, and assess issues such as flood risk management.

Key stakeholders, such as utilities, land-use planners and local farmers, as well as all members of the public who have an interest in the management of the river, were encouraged to get involved by commenting on current plans for the Dreisam, providing ideas for future developments and sharing experiences of initiatives from other river catchments. Small working groups were set up to facilitate widespread participation and the findings of these were pulled together to form ideas and proposals.

## 5 Analysis

### 5.1 Governance / division of power

On the whole the decentralised structure of German governance has traditionally been effective in allowing local governments to maintain considerable autonomy over their local water resources and to independently deliver their services within the framework and legislation set at *Bundesland* level. However, the distinct separation of German national, regional and local government does not necessarily lend itself well to integration across the different levels. Such integration is one of the requirements of the WFD and reforms will therefore be necessary in the governance structure and national legislation to ensure that WFD objectives are transposed to regional and local level and successfully implemented. These may include the reassessment of roles and responsibilities of the different levels of government and the way in which they cooperate with each other and non-governmental organisations.

Although on paper such changes appear to provide a considerable challenge, in reality intensive relations and interaction already exists between all levels of the hierarchy and will not demand a large shift in working practices in order to meet the WFD requirements. Conflicts of interest in the management of water resources do of course occur and in these cases it is the higher levels that have the final say. However, debates tend to be vibrant, are often constructive and on the whole there is a willingness throughout the structure to act responsibly and for the common good of the people which has laid a solid foundation for the implementation of the WFD.

One area where improvements may be particularly required is the degree of transparency within decision-making at the local level. Local decisions are often taken with limited opportunity for public participation and information is only made available after plans are put in place. With public participation being highlighted as one of the key requirements of the WFD, this is one area where reforms will be necessary.

## 5.2 Mandates and functions of local governments

A key local government mandate in water resources is that of water supply and wastewater treatment, the successful delivery of which they are held accountable for. They also have the responsibility for the development and maintenance of the local water bodies. The performance of local government in these areas is closely observed through strong NGOs and citizen initiatives that are quick to raise awareness to any evidence that suggests the local government is failing in its responsibilities.

Local government is in a strong position to encourage increased stakeholder involvement and public participation in the management of local water resources. Examples where this has occurred include the creation of a management plan for the Dreisam River in Freiburg (see box 4), and the re-naturalisation of the River Alb in Karlsruhe. Both of these cases are directly in line with the WFD requirement to include close community involvement in the management of water resources and provide pilot studies that could be repeated elsewhere in Germany.

When it comes to making decisions on developments that affect more than one local government, it is common for these to be taken at higher levels, such as the Upper Water Authority, the Supreme Water Authority or by a national decision-making body. However, there are examples in the German Rhine basin where local governments have cooperated together to manage water resources beyond their local boundaries. These include the Mannheim – Heidelberg Neighbourhood Association (see Box 1) and a number of cases, such as in the Ruhr valley, where neighbouring local administrations work together to manage water resources for the benefit of the drinking water supply.

## 5.3 Participation and representation

Although the German decentralised system of governance tends to confine local governments to local responsibilities and decision-making, there is the potential to gain representation at higher levels through a variety of municipal and scientific associations. These can exert influence at hearings and raise awareness of local issues that are affected

by management practices elsewhere in the basin. There are also examples of local government involving themselves directly in higher level organisations such as the case of the NGO initiated by the Cologne *Hochwasserschutzzentrale* which has succeeded in ensuring local government participation in the influential ICPR (see Box 3).

Despite examples of cases where local government has been able to participate in decision-making at higher levels, it is still unusual and they are often poorly represented in decision-making organisations and processes outside the local area. This applies not only to the high-level transboundary organisations such as the ICPR, but also at *Bundesland* level where decisions taken that cover more than one local government area rarely include local participation. Reasons for this include the restrictions of local mandates that cover responsibility for the management of local water resources and services, but understandably not larger water bodies that influence numerous local administration areas. Although organisations, such as RhineNet, support and encourage the participation of local governments and civil society in many projects that go beyond local boundaries, it is often the case that projects on this scale are conducted by government and associations at *Bundesland* or national level and local governments may only be consulted when instructed on the tasks that they are required to perform.

This is not necessarily a major issue, as decisions tend to be for the common good and, when opposition does exist, there are well established channels through which to make objections heard. On the whole local governments' involvement in water resources management is mostly to their satisfaction and the power that they possess is felt to be sufficient to get their voices heard in the decision-making processes at higher levels of government in one way or another.

Although the governance of water resources is currently operating smoothly in Germany, the lack of integration between the different levels of government may cause an issue in the development of river basin management plans for the WFD (in which local representation is expected to play a part) as these require water resources management to be based on hydrological rather than administrative boundaries. The necessary reforms to achieve this shift should provide further opportunities for local governments to get their voice heard in the management of water resources beyond the local level. Currently local governments may be unaware of these opportunities and it is therefore important that from the beginning they are involved in the definition of regional and local WFD objectives and the measures that are set up to achieve these. It is also necessary for local governments to understand the relationship between the local WFD objectives and other local plans that are likely to be directly or indirectly impacted. These objectives should be incorporated into local decision-making in land-use planning, transport and tourism amongst others.

## 5.4 Capacities and resources

Due to the long tradition of a strong decentralised structure and good advocacy for the local level in Germany, local governments are competent at obtaining the necessary funds to fulfil their mandates. The WFD is likely to add pressure to these financial resources and local governments may require further funding to encourage their expected involvement in water management beyond water supply and wastewater treatment. Such

resources will need to be secured from higher levels of government and financial management support should continue to be sought from technical support agencies.

## **6 Conclusions**

The international aspect of the Rhine basin, its economic importance and the public desire to maintain a healthy river ecosystem, has resulted in the recognised need for, and implementation of, an integrated management approach. Consequently, many transboundary activities have been initiated within the basin and close coordination across administrative borders has been ongoing for a number of decades. Such integration has not always been straight forward and positive, but on the whole major successes have been achieved especially considering the environmental improvements that have been made since the 1970s when the river was virtually biologically dead.

The integrated management of the Rhine has on the whole been carried out between higher levels of government without significant involvement from the local level. Gradually this is changing and local governments are beginning to get their voice heard. Municipal associations in particular are playing a major role in advocating the interests of local governments at higher levels of planning. The implementation of the WFD should also provide further opportunities for local government involvement in water resources management in the Rhine basin. The need for local participation is a key requirement of the WFD and it is important that local governments ensure this occurs by keeping themselves updated about developments and making the most of every opportunity to play a part in decision-making beyond their local boundaries.

The WFD requirement for local involvement recognises the fact that local governments play a major role in the successful management of water resources at the regional level. Equally, good water resources management at the regional level is also of paramount importance locally as, due to the interdependency of the water cycle, activities taking place in one area of the catchment will often have an impact elsewhere.

As the level of government closest to the general public, local governments have a major responsibility for raising awareness of the importance of water and the need to protect local resources. They are in a position to act as role models for the local community and should therefore set an example by taking the lead in using water wisely, safeguarding local water bodies, consulting with local stakeholders and rewarding good practice examples in the local community.

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