IRS Institut für Regionalentwicklung und Strukturplanung

Working Paper

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Making senses of diversity

A synergy report on an inventory of 113 intermediary organisations of water management in Europe

This synergy report is based on an inventory of intermediary organisations compiled by:

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Erkner, May 2005

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0. Executive summary

This report is based on an EU-funded research project investigating the contribution of intermediary organisations to the sustainable management of urban water resources in Europe. The project maps the development of intermediary services and organisations in water supply and sanitation systems, examines how they facilitate the application of new resource-saving technologies and social practices and assesses their impact on the environment, economic efficiency and infrastructure management. The purpose of this synergy report is to summarise the principal findings from an inventory conducted by all the research partners of 113 intermediaries in seven European countries: five members of the EU 15, one new Member State and one Accession State. The primary objective is to demonstrate the existence and rich diversity of intermediary organisations affecting the way water and sanitation services are provided and used.

Following an introduction to the methodology used in compiling the inventory and synergy report the paper begins with a description of the sample of intermediaries selected for the inventory, based on a quantitative survey of the variety of organisational forms, periods of emergence, driving factors, objectives, target groups and issues addressed. The report then provides a qualitative interpretation of some of the most common contextual factors which would appear to influence significantly the emergence and further development of intermediaries. In a third section it explores diverse modes of intermediarity from three complementary perspectives: how intermediaries contribute to EU water policy objectives, how they facilitate social learning and policy delivery and how they work across diverse policy fields. The report concludes with a preliminary assessment of the impacts and potential of intermediary organisations.

In exploring favourable contexts of intermediarity the report identifies four categories of key driving forces. The first category – physical/technical problems and their socio-political construction – highlights the importance of (shifting) discourses on the environment and the governance of infrastructure systems in creating intermediary space. A second contributory set of factors relates to the national policy environment, institutional configuration and political culture. Here levels of privatisation, modes of regulation and institutional capacity are important in shaping what kinds of intermediary emerge and flourish. The structural transformation of post-socialist countries in Central and Eastern Europe pose a particular context of intermediary emergence, explored in terms of new commercial opportunities and challenges and the inadequacies of institutional arrangements. The fourth category is the influence of EU politics on intermediary activity. Here the report identifies examples of EU regulations stimulating the emergence of new intermediaries and prompting existing organisations to adopt intermediary functions.

In analysing how intermediaries work the report explores, firstly, the variety of ways in which intermediaries advance EU water policy objectives. This can involve promoting the more rational use of water resources, facilitating the reduction of water pollution or encouraging greater public and stakeholder participation in water resources management pertinent to implementing the Water Framework Directive. Other organisations are concerned more with improving the cost-efficiency or the affordability and quality of water services, objectives set out in the EU White Paper of Services of General Interest. The ways in which intermediaries

engage with other actors, institutions, technologies and local environments would appear to be essential to their effectiveness. The report identifies cases of intermediaries adapting technologies to particular contexts of application, translating knowledge into new products and services, building networks, lobbying and advancing reforms, providing information and guidance, raising awareness and filling institutional voids. A distinctive feature of intermediary activity is that it is often not restricted to the water sector. Many intermediaries work across different policy fields, linking water issues for instance to energy, public health, urban development and social justice to positive effect.

The existence of a large number of diverse organisations performing a variety of important intermediary functions suggests that their influence on water management may be considerable. This assertion is, however, hard to substantiate on the basis of the inventory alone. The nature of intermediary activity – such as changing attitudes, networking stakeholders or influencing policy – tends to defy accurate assessment. Intermediary impact is also often indirect, multi-causal and long-term. Given the small scale of many intermediaries their individual impact may be small, but the cumulative impact of several considerable. The report concludes by reflecting on these methodological challenges and the potential – as well as limitations – of intermediarity for sustainable water management.

1. Objectives

This report is one of several products emerging from an EU-funded research project on the role of intermediary organisations in water supply and sanitation systems in Europe.[1] The rationale for the project is founded on the observation that a combination of regulatory, environmental, technological, financial and demographic forces are currently prompting major shifts in the organisation, provision and use of water services across Europe. This is reflected *inter alia* in the stronger differentiation of markets and diversification of services. As a result new actors are emerging who work in-between the utilities, consumers and regulators, the roles actors play in water management are changing and the relationships between actors are being reordered. "Intermediary space" is being created – not only between actors of water management, but also between technologies and social contexts of application, between diverse territories of water management and between water and other policy fields. This research project investigates how intermediary organisations are using and developing this space and how they are contributing to the sustainable management of urban water resources. This is done by mapping the existence and development of intermediary organisations, by explaining how and in what contexts intermediaries can facilitate the dissemination of resource-saving technologies and social practices and by assessing the impact of intermediaries on the environment, costs and the governance of water supply and sanitation services.

The research project analyses intermediaries by means of several complementary methods. One of these methods is an extensive and detailed mapping exercise of intermediary organisations in eight urban regions in seven European countries. This has resulted in an inventory of 113 intermediary organisations (see Methodology below). The purpose of this synergy report is to provide a cross-cutting analysis of the data in the inventory. The primary objective is to demonstrate the existence and rich diversity of intermediary organisations operating in the water sector. Using a deliberately broad and inclusive definition of the term, the inventory identifies and describes intermediaries of diverse organisational status, origins, objectives, modes of operation and influence.[2] The synergy report provides a concise and accessible summary of the principal findings, using quantitative data, qualitative analysis and numerous examples to illustrate the key points. A more detailed, statistical survey of a selection of 30 commercial intermediaries has been conducted as an additional component of the project.[3]

[1] "Intermediary services and the transformation of urban water and wastewater systems in Europe", funded under the Framework 5 Programme Key Action "Sustainable Management and Quality of Water" (EVK1-CT-2002-00115).

[2] The working definition applied on the project is: "Intermediaries are organisations that act in-between the traditional relationships between utilities, regulators and consumers to enable the uptake of new technologies and changed social practices within the production-consumption relationship to reshape the intensity, timing and level of water use and wastewater production".

[3] Kim Pearce: Statistical Analysis of Questionnaire Data. Research Report for the EU project 'Intermediary services and the transformation of urban water and wastewater systems in Europe'. Industrial Statistics Research Unit, University of Newcastle. March 2005, http://www.irs-net.de/texte/intermediaries/ISRUKPinput.pdf .

2. Methodology

The inventory

The inventory of intermediary organisations, on which this synergy report is based, was compiled with the principal objective of identifying and describing a wide range of intermediaries relevant to water supply and sanitation services in seven European countries. These included three large EU Member States (Germany, Britain, France), two smaller members of EU 15 from the North and South of Europe (Denmark, Greece), one new Member State (Hungary) and one Accession State (Bulgaria). Within each country the search for intermediary organisations was restricted (with the exception of Britain) to one major urban region, to simplify data collection and provide more comparable contexts. The term "urban region" was interpreted loosely to permit the selection of any organisation operating within or in the vicinity of the city or on a regional level focussing on the city. The urban regions studied were: Berlin, Manchester, Newcastle, Paris, Copenhagen, Volos, Budapest, Sofia. For each one ca. 15 intermediary organisations were selected for the analysis. In order to achieve a rich diversity of cases, the researchers were requested to look for different categories of intermediaries in their respective urban region, ranging from service providers and distributors of innovative technologies to networks, educational organisations and consumer or environmental groups (see Annex I). Particular emphasis was given to the innovative character of the intermediary, whether technological, social, commercial or institutional/organisational. A common template for guiding the research and categorising the data was developed with the help of a trial run in each region (see Annex II). This template provides a uniform structure for each of the intermediary organisations described in the inventory. The process of compiling the inventory was accompanied by a review and revision procedure to ensure adherence to the agreed methodology and maximum compatibility of the eight regional inventories. A list of the 113 intermediary organisations described in the inventory is given in Annex III.

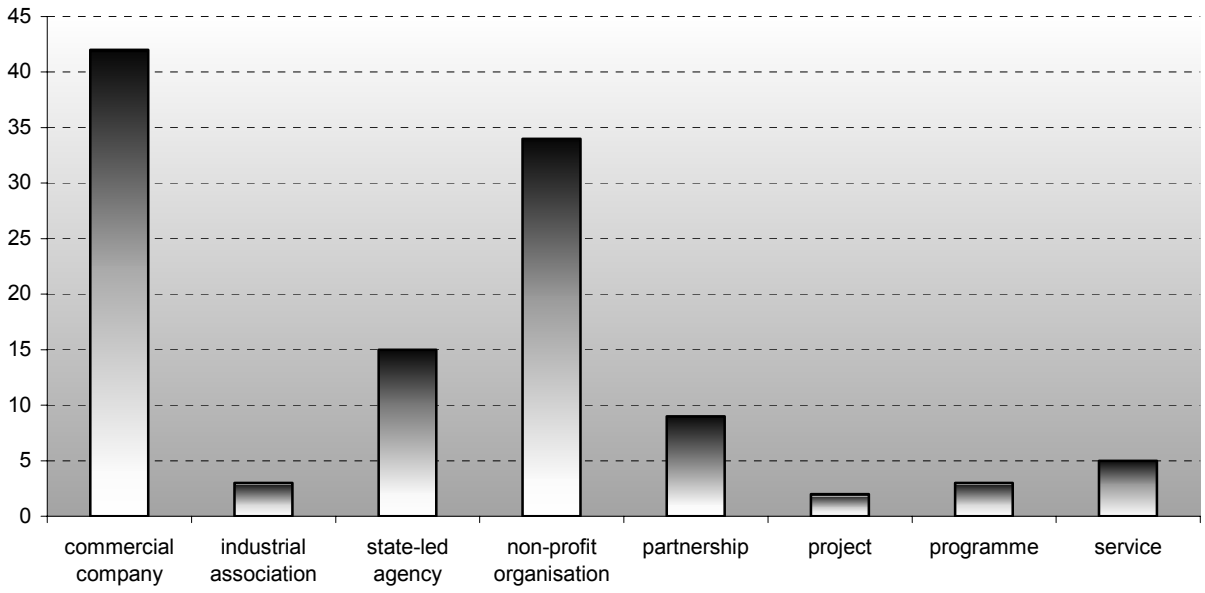
The synergy report

This synergy report is structured in three main parts. It begins with an initial description of the sample of intermediaries selected, using principally quantitative data plus a brief commentary to illustrate the incidence and distribution of their various characteristics. These range from organisational status and period of operation to the objectives pursued, principal addressees and the water issues addressed (chapter 3). The following section (chapter 4) explores the contexts which have contributed to the emergence and development of intermediaries, offering various interpretations in terms of prevailing physical/technical conditions and societal discourses, national policy environments, structural transformation in Central and Eastern Europe and the influence of European politics. The subsequent section (chapter 5) provides a qualitative analysis of the various modes of operation of intermediaries, exploring what they do from different perspectives: how they advance EU water policy objectives, how they facilitate social learning and policy delivery and how they work across diverse policy fields. The final chapter summarises tentatively the impacts and potential of intermediaries to promote sustainable water management. This synergy report thus applies three different but complementary methods to capture the essential messages emerging from the inventory: a descriptive, quantitative overview of the sample, an interpretation of contextual factors which are conducive to the emergence and development of intermediaries and a cross-cutting analysis of intermediary functions and impacts.

3. Describing the sample

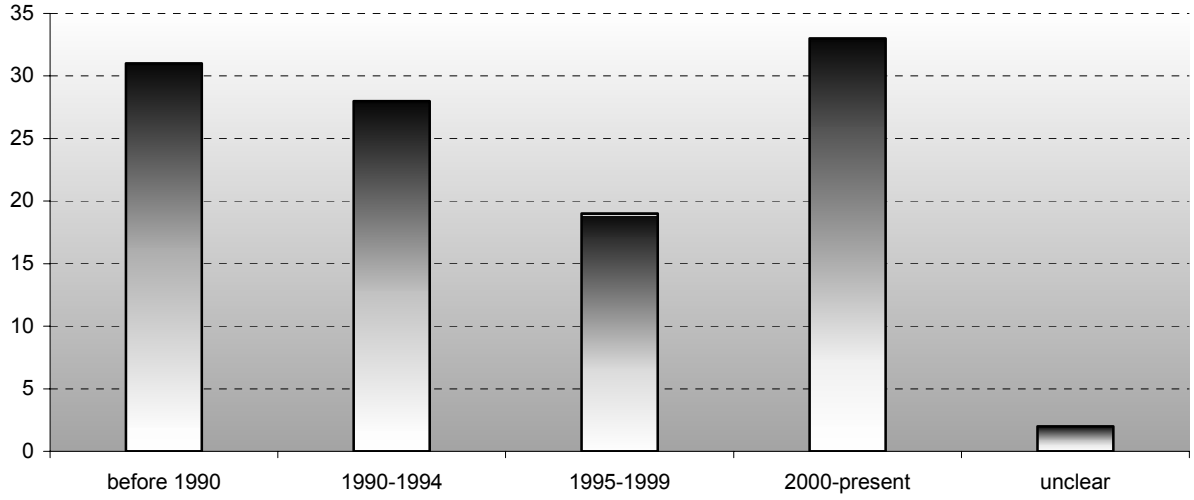
The inventory comprises a total of 113 intermediary organisations from eight urban regions across Europe. The number of organisations documented varies slightly between the regions. Whereas six regional inventories comprise 15 intermediaries in each case, one inventory (Budapest) comprises 13 and another (Paris) ten. Here we provide diagrammatic overviews of central characteristics of intermediaries drawn from the inventory. These relate to the types of organisations selected, the length of time they have been in operation, the key drivers for their emergence, the objectives they pursue, the water issues they address, their target groups and the areas in which they can be seen to be innovative. Given the relatively small sample from each region, as well as the diverse regional contexts of intermediary activity, it is not feasible to compare the parameter between the regions and from this draw conclusions on regional incidence. The purpose of this chapter is, rather, to demonstrate the rich variety of intermediarity in existence across Europe, based on a selection of highly diverse European regions, and to illustrate this using a number of relevant categories of analysis.

Fig. 1: Organisational form



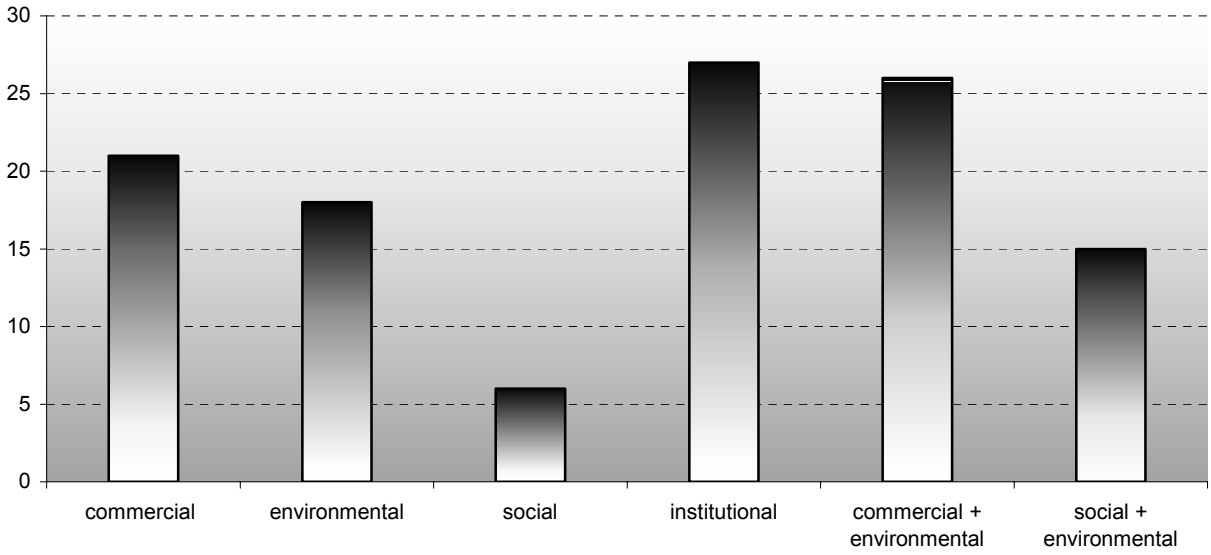
The intermediaries documented in the inventory exhibit a broad variety of organisational forms (Fig. 1). Our research has identified intermediary activity being performed not only by non-profit organisations and partnerships or networks of organisations, as might be expected, but also by state-led agencies, industrial associations and, in particular, commercial companies. It was also revealed that intermediary activity sometimes cannot readily be attributed to a particular organisation but is founded rather around projects and programmes (e.g. water-related education programmes targeting schools) and service sites (e.g. web pages providing information for water users). It should be noted that considerable variation exists within the individual categories as well. For example, the category "non-profit organisation" includes environmental NGOs as well as business-oriented agencies which promote the development of an economic sector without pursuing commercial objectives themselves.

Fig. 2: Period of emergence



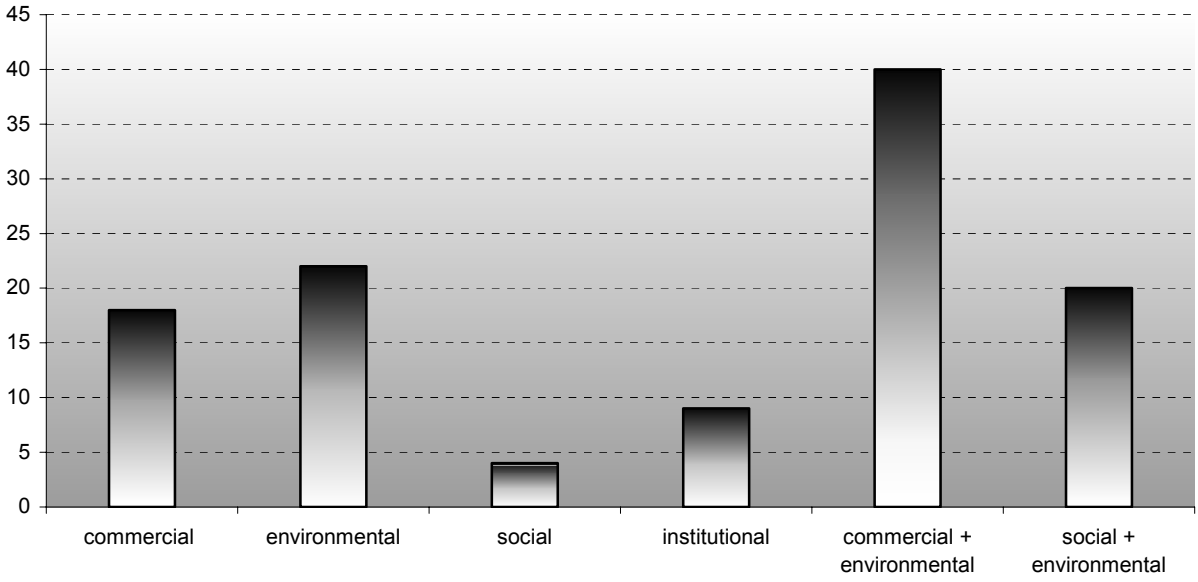
As Fig. 2 reveals, around 70% of the documented intermediaries were created after 1990 with just under 30% created since 2000. Intermediary organisations tend, therefore, to be young organisations. This could be interpreted as an indication of the degree of transformation to the provision and use of water supply and sanitation services in recent years, accompanied by processes of outsourcing, service diversification and actor reconfiguration. At the same time it is interesting to note that over 30 of the 113 organisations have their origins in the period before 1990, with a few having histories stretching back to the late nineteenth and early twentieth centuries. This does not indicate, of course, that these organisations were performing similar intermediary activities at this time, but rather that established organisations can adopt intermediary functions as circumstances change and opportunities make themselves available. Intermediarity is thus a relational category. Whilst recent transformations in the water sector would clearly appear to be a catalyst for the emergence of new intermediary organisations, they have also prompted some of the more flexible, established organisations to recognise and "grow into" a new intermediary role, often pursued alongside their traditional functions.

Fig. 3: Key drivers



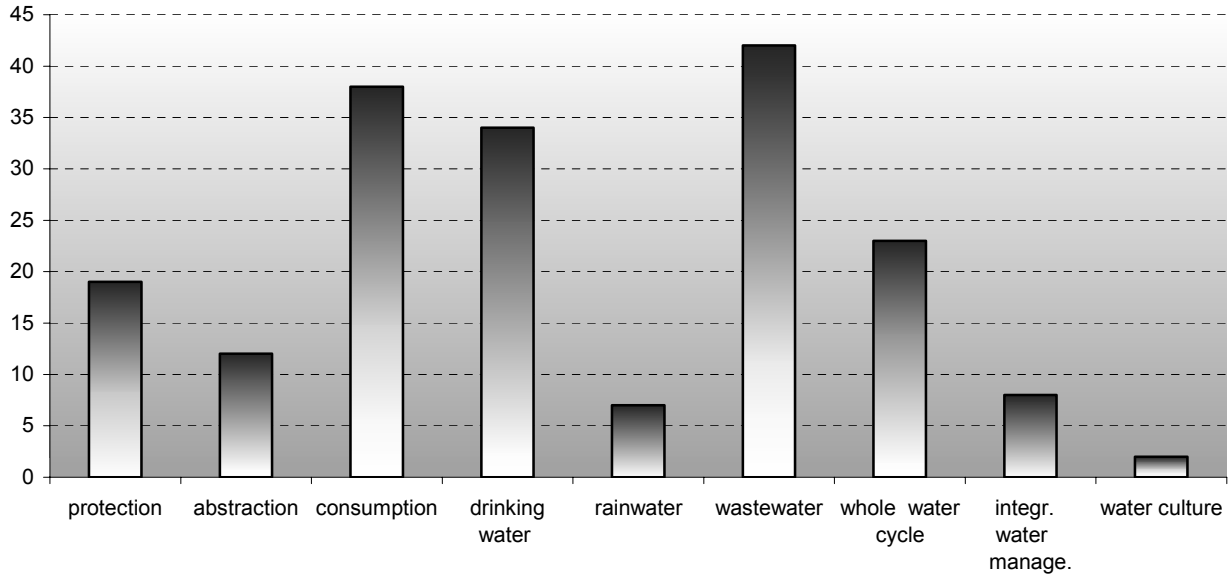
There are various factors which influence the emergence and development of intermediaries. As a rule the origins of an individual intermediary have to be seen against the background of a bundle of contributory factors. However, in most of the cases it was possible to identify one key driver which prompted the emergence of intermediary activity. Fig. 3 gives an overview of the distribution of these key drivers. The category "institutional" refers to either institutional/policy changes or institutional/regulatory deficits which created space for the emergence of intermediaries. Here, European regulations like the Water Framework Directive often played an important role. A combination of commercial and environmental factors was particularly important in the case of commercial companies created to exploit ecological market niches. A combination of social and environmental drivers was also significant, for instance in the case of social housing associations introducing water and energy-saving technologies into their buildings in order to minimise rent levels.

Fig. 4: Objectives



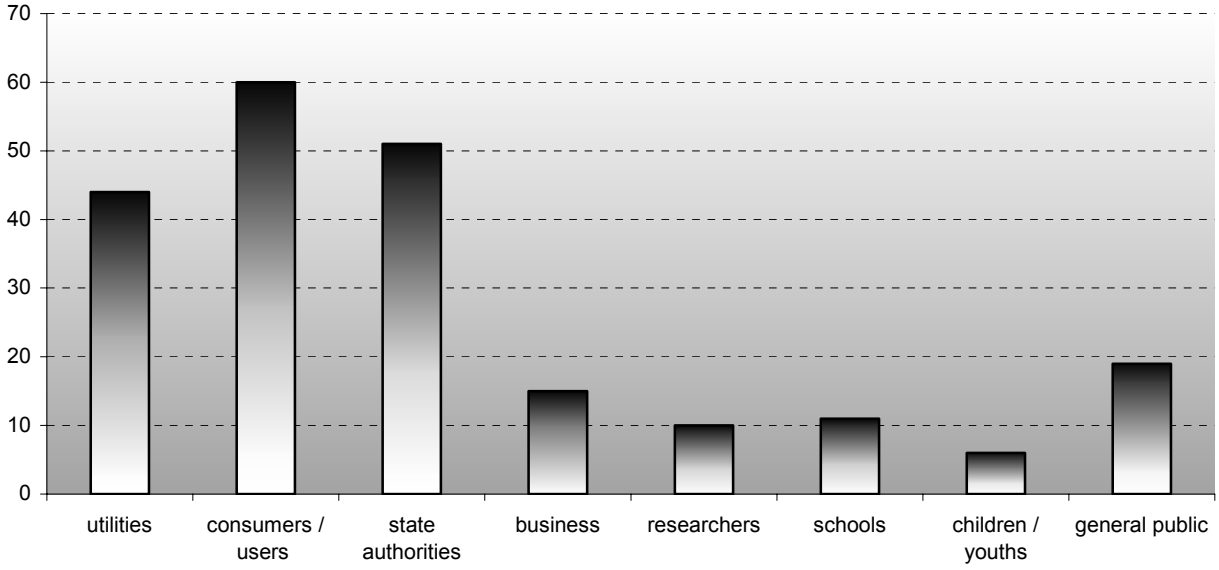
The categories in Fig. 4 are the same as those in Fig. 3 but refer instead to the objectives of intermediary activity. Here we can observe a clear predominance for the combination of commercial and environmental objectives, at 35% of the total. Given the relatively high proportion of commercial companies identified in the survey (see Fig. 1) it is perhaps not surprising that over half of the intermediaries pursue commercial objectives, alone or in combination. Notable, but also not surprising, is that whilst the emergence of a large proportion of intermediaries can be attributed to institutional drivers (Fig. 3) only a very small number (nine) cite institutional changes as a prime objective.

Fig. 5: Water issues addressed



The water issues addressed by the intermediaries investigated are shown in Fig. 5. In contrast to the Figs. 1-4 the sum of the parameter values here is larger than the sample. This is due to the fact that most intermediaries address more than one water issue, making it necessary to permit multiple entries. Consequently, it is not possible to determine the proportion of intermediaries addressing a particular water issue. The diagram illustrates instead merely the distribution of water issues addressed by all the 113 organisations in the sample. The most striking feature here is the variety of water issues addressed, ranging from single topics such as protection (of ground and surface water) and drinking water (treatment, distribution etc.) to more comprehensive, integrated topics such as concern for the whole water cycle or integrated water resource management.

Fig. 6: Target groups



Most intermediaries address not only various water issues but also various target groups. This is shown in Fig. 6, which also includes multiple entries for each intermediary. The diagram demonstrates that there is no one actor grouping which is the principal target of intermediary activity but that there does exist a clear orientation towards the three principal groupings of utilities, consumers and public authorities. This is obviously reflective in part of the relative importance of these groups as providers, users and regulators/planners of water supply and sanitation services. It is also, though, an expression of the broad spectrum of actors included in some of these categories. For instance, the category “state authorities” embraces municipalities as well as regulators and planners at the regional and national level. The category “consumers/users” refers to both private households and commercial companies. The category “business” also applies to commercial companies, of course, however not as water consumers and wastewater producers but as agents of innovation in the water sector, for example a network encouraging SMEs to develop innovative water-related technologies.

4. Exploring contexts of intermediarity[4]

What are the contextual factors that favour (or hamper) the emergence and further development of intermediaries? One preliminary answer to this question was given in Fig. 3 above, which identified the distribution of selected key drivers of intermediary activity. This response was, however, purely quantitative and highly simplified. The statistical analysis could only give a very rudimentary impression of the variety of driving forces behind intermediary activity and none at all of the contextual factors influencing these. In this following chapter we seek to complement the initial quantitative survey with a qualitative analysis of the inventory in order to shed light on some of the contextual factors which would appear to have some significant bearing on when, how and with what purpose intermediaries emerge. This analysis is by necessity tentative because of the relatively limited descriptions in the inventory and the open selection procedure for the sample. It is also selective in that it attempts to portray not the breadth of contextual factors at play but rather a few which an assessment of the inventory revealed to be particularly common and/or significant. These selected contextual factors have been grouped into four categories as follows:

a) Physical/technical problems and their socio-political construction

b) The national policy environment, institutional configuration and political culture

c) Structural transformation in post-communist societies of Central and Eastern Europe

d) The influence of EU policy.[5]

These are explored below, using examples of individual intermediaries for illustration.

4.1. Physical/technical problems and their socio-political construction

We distinguish here between two broad categories of infrastructure problems influencing the emergence and development of intermediary activity: ecological factors and technical factors. Ecological factors refer to the quality of regional and local water resources and cover primarily issues such as water scarcity and pollution. Technical factors refer to the condition of the facilities and networks with which drinking water and wastewater is transported and treated. Ecological and technical problems are, of course, often interrelated, giving particular incentives for intermediary activity. For example, in the case of ACWa Services Limited, a commercial company in North Yorkshire which provides engineering solutions to a worldwide market, water scarcity as well as physical limitations to existing wastewater treatment plants are important preconditions for the services they provide.

The physical or technical characteristics of a locality are not in themselves contributory factors for intermediary or any other activity. What provides incentives for action are the ways in which such characteristics are perceived by actors to constitute a problem requiring

[4] The quotations in this chapter are for the most part taken from the inventories. Otherwise the author is indicated.

[5] There are, inevitably, some notable exceptions to this selection. Further contextual factors of significance include, of course, the socio-economic profile and development trajectory of a region. Experiences in former industrial regions like the Ruhr, for example, indicate how new commercial intermediary activities for environmental enhancement can emerge out of the legacy of industrial production clusters.

resolution. This means that problems like water scarcity and pollution always have both a material and a symbolic dimension. The ways in which a problem is defined by stakeholders is crucial for understanding what responses emerge to address it. This social construction of physical/technical conditions also has a distinct political dimension. Not all stakeholders have the same degree of influence over processes of social construction. Water scarcity, for example, is not a universal problem but one that affects some people (normally the underprivileged) more than others (the affluent). The construction of water scarcity as a social problem is therefore a question of social power and conflict, insofar as it depends on the ability to politicise a physical condition or, as Jane Jenson puts it, to give "representational strength" to it.

Early green politics

One early environmental discourse, rooted in the environmental protest movements of the 1960s to 1980s, would appear to have provided important drivers for intermediary activity. This discourse was very much oriented around the logic of minimising resource depletion and pollution by means of a radical shift in lifestyles and attitudes. One intermediary organisation which originated from the green movement in Denmark is the Copenhagen Environment and Energy Office (KMEK). It was established in 1987 and is part of a national network of approximately 20 local energy offices created originally to promote renewable energy as an alternative to nuclear power and fossil fuels. Since then it has adapted the nature and direction of the intermediary activities it performs to accommodate changing contexts of operation. Formerly renowned for its confrontational stance on environmental issues, KMEK's staff are today seen as "professional idealistic entrepreneurs" addressing environmental problems with market-oriented measures.

Ecological modernisation

This transformation points to another environmental discourse which has influenced intermediary activity: the discourse on ecological modernisation. This stands for a shift in demand structures in favour of environmentally sound products, an approach which has paved the way for corresponding production and educational activities. The development of the Sustainable Action Group Exchange (SAGE), a so-called "info-mediary" in North East England, has, for instance, been driven primarily by "the increasing interest in green technologies and practices throughout society". Similarly, the Centre for Environmental Protection Ökowerk Berlin emerged in a context where ecological modernisation (in this case of the building sector) became the dominant public discourse. The Berlin intermediary AKUT exploits commercial possibilities created by this discourse. Established in 1988 on the initiative of four environmentally motivated engineers, it develops ecological modernisation concepts as well as wastewater treatment and sewer construction technologies.

Social and environmental effects of privatisation

A further discourse focuses on the potential consequences of privatisation and liberalisation for issues such as water prices and water quality. Public concern over privatisation and liberalisation has given rise to intermediary activities to support consumer interests vis-à-vis utilities and regulators, for instance by the Bulgarian National Consumer Association and the Federation of German Consumer Organisations. A further example is the network WaterWatch in North East England. Set up in February 1994 it addresses the social and environmental consequences of privatisation in the water sector. Its self-declared aim is "to

influence the development of the water industry so that customers and the environment are put before profits and dividends". There are also instances of intermediaries launched by utilities themselves as a reaction against rising criticism and consumer demands for more transparency. The "Centre d' Information sur l'Eau" (C.I. Eau) in France is a case in point. C.I. Eau was founded in 1995 by French water companies "to respond to questioning by the public", in this case regarding controversial increases in water prices.

Environmental discourse as a hampering factor

Although a beneficial factor for the emergence and development of many intermediaries, an environmental discourse can also hamper intermediary activity if it gives rise to the general impression that enough is already being done for the environment. The art and architectural firm Glassarc in the North East of England, for example, has had difficulties advancing water-saving technologies when regularly confronted with the view held by many of their potential clients "that everyone has now learned about 'sustainability' and thus everyone is doing what is needed".

4.2. National policy environment and institutional factors

The emergence and development of intermediaries, it appears from the cases in the inventory, is also strongly influenced by the characteristics of national, regional and local institutions of water management and recent processes of institutional change. The following features and dynamics are of particular importance here: privatisation, re-regulation and inadequate institutional capacities of water management.

Privatisation

The privatisation of a water utility can stimulate the emergence of intermediaries in different ways, as several examples from the inventory illustrate. Some intermediaries are created as part of the privatisation process itself. This applies to the Berlin Centre of Competence for Water (Kompetenzzentrum Wasser Berlin – KWB), which was launched as part of the package to partially privatise the Berlin Water Company (BWB) with the intention of bringing together the BWB, its new private part-owners, Veolia, the city of Berlin and the technical university into a partnership capable of promoting technological innovation in the water sector. A second case is where privatisation leads to the accelerated emergence of new water services in a more competitive environment, generally performed by commercial intermediaries, as several instances in the UK document. Thirdly, intermediaries can be created as a reaction against negative effects of privatisation, as described below for the case of Sofia, campaigning against price rises, threats to water quality and loss of public control.

Re-regulation

Processes of privatisation and partial liberalisation in the water sector do not – contrary to some expectations – entail the removal or even reduction of public control. As the experience of the water market in England and Wales illustrates, the privatisation of utilities poses new regulatory challenges to ensure that standards of environmental protection, consumer protection and cost efficiency are met. This has required the creation of a number of public or quasi-public regulatory agencies, such as the Office of Water Services (Ofwat) in 1999. The stipulations set by these bodies have themselves given rise to new organisations which offer

services and technologies geared to meeting regulatory targets. One example is the Newcastle-based company Imass, created in December 2002 through a management buyout of the Information Technology Department in Northumbrian Water, which provides information technology solutions to a range of customers in the utility and public safety sector. One of the factors favouring the development of the company are regulatory changes within the environmental sector "that are pressuring water utilities to be more environmentally conscious". The company attributes 15-20% of its business to environmental regulations.

Other examples include the intermediaries Envirolink North West, a non-profit organisation established in 2000, and STaR (Centre for Sustainable Technologies and Regeneration), a university centre founded in 2002. Both are situated in North West England and provide technological know-how for commercial companies in order to facilitate innovation in the area of environmental technology. They represent a specific type of intermediary emerging in the wake of tighter environmental legislation: one pursuing institutional rather than commercial innovations in that they encourage businesses to exploit market opportunities created by tighter environmental regulation.

Inadequate institutional capacities

Besides institutional changes like re-regulation and privatisation favouring intermediary emergence, the inability of institutions to adjust themselves to changing circumstances can create space for intermediaries. In situations where existing institutions are clearly ill-equipped to tackle urgent problems of water management intermediaries can make an important contribution to filling the institutional void. To take two examples from Greece, a major driving factor behind the emergence of the Network of Organisations of Magnesia (DIKEOMA) in 2000 was the "weakness of the local state actors to manage several crucial societal and environmental issues". The Pan-Hellenic Network of Ecological Organisations, an alliance of local and regional environmental initiatives, has also to be seen against the background of failure of state bodies to solve environmental problems. This network, established in 1998 following protracted conflicts over ecological issues, today provides information and political support for the general public on various environmental issues including water, targeted in particular at young people.

4.3. Structural transformation

The structural transformation of the post-communist countries of Central and Eastern Europe poses institutional challenges of this kind too. The more fundamental nature of transformation here, however, warrants separate treatment as a contextual factor in its own right. For in these countries the reconfiguration of infrastructure systems is occurring against the background of the transition from one societal system to another.

New commercial opportunities and challenges

Structural transformation in post-communist countries has opened up new commercial opportunities for domestic as well as Western companies in a variety of ways. Firstly, the privatisation of water utilities has given rise to the outsourcing of certain functions. This applies, for instance, to the creation in 1995 of AquAcust, a company which offers monitoring

services to utilities and large industrial water consumers, following the restructuring of the Budapest Water Company. Secondly, Western corporations have bought up domestic private companies in order to acquire context-specific technological know-how and local social capital for future market opportunities. For example, in 1995 the Bertelsmann subsidiary Arvato Systems bought out the Hungarian company Prompt 92 which had been founded three years earlier by four Hungarian engineers and which offers e-learning courses for the employees of water utilities to familiarise them with new technologies. Thirdly, new partnerships have emerged out of previous personal connections to meet new challenges. A case in point here is Hydroconsult, a water and environmental engineering consultancy established in Budapest in 1991, which is led by three experts from the water and sewage faculty of the Technical University who are using their close contacts to university staff and students to their commercial advantage.

Structural transformation in Central and Eastern European countries has also helped alter the relationship between water and sewage companies and consumers. In state-socialist times the utilities "acted more like authorities than market players that have to consider the needs of the consumers" (Budapest inventory). Now however, they have to take greater account of consumers' interests, a fact which has favoured the emergence of intermediaries like the Infobus of the Association of Hungarian Water and Sewage Companies and the Transdanubian Water Company, established in 2004 to improve communication between utilities and consumers.

Opportunities and restrictions as a result of institutional gaps

Inadequate institutional capacities create regulatory gaps which, as we have seen, can be filled, at least partially, by intermediary organisations. In the case of Central and Eastern European countries undergoing structural transformation this phenomenon is particularly pronounced. Institutional change here is even less a case of one law or organisation replacing another than in Western Europe. Given the deep-rootedness of existing informal institutions, in particular, and the radical and multidimensional nature of recent reforms it is perhaps not surprising that institutional transformation is not at all clear-cut but a process generally characterised by ruptures, conflict and inconsistencies and resulting frequently in unclear structures and institutional gaps or hybrids. Contexts such as this create space for intermediaries to adopt regulatory functions or help establish more efficient and transparent regulatory frameworks.

One example is the Bulgarian Water Supply and Sewage Association (BWSSA) which represents the interests of utilities and commercial companies in the water and wastewater sector. BWSSA was established in 1994 to meet the "need for the development of a new regulatory framework". It aims at "introducing up-to-date and 'working' legislation in the field of water management". A second example is the National Water and Sewage Regulator (NWSR) in Bulgaria, an intermediary currently being established to regulate water prices and the quality of services. The idea is for NWSR to manage the "transition from a relatively poorly regulated water sector permitting considerable scope for legal, semi-legal and illegal activities to a generally well-regulated sector, more transparent activities and better coordination and cooperation between the parties involved". Besides industrial associations like BWSSA and state-led agencies like NWSR civil society intermediaries are also attempting to fill institutional gaps. One of these organisations is the Bulgarian National

Association on Water Quality (BNAWQ), established in 1994 against the background of severe environmental and institutional problems in the water sector. BNAWQ not only provides "classic" NGO services in areas like water-related campaigns, research and education. It also performs functions normally fulfilled by public authorities or commercial companies, such as training sewage treatment plant operators, developing projects for building and operating wastewater treatment plants and promoting public debates on the need to harmonise existing regulations and management practices with international requirements, norms and standards.

However, as the case of OMONIT reveals, new intermediaries may also help shore up existing ineffective and intractable institutional arrangements. OMONIT is a company founded in 2001, following advice from the European Bank for Reconstruction and Development (EBRD). It is entrusted with auditing and regulating the activities of Sofia Water, the private concessionaire for Sofia's water supplies. However, OMONIT is part-owned not only by the city of Sofia but also by Sofia Water itself, giving rise to the problematic constellation in which the regulator is partly owned by the object of regulation.

A further problem is that the fluctual and unpredictable nature of structural transformation can limit intermediary activity. Several commercial intermediaries in Budapest who primarily serve the local water utility have suffered increasingly from a lack of funding since privatisation. This applies, for instance, to MOM Water-measuring, a joint-stock company producing water and heat measuring equipment badly affected by a reduction in business with the utility, and to the water fee collector company Díjbeszdö Rt, which is having to diversify into new markets in the telecommunications and banking sectors in the absence of sufficient contracts from the utility.

Opportunities for Western intermediaries

Finally, structural transformation not only affects Central and Eastern European countries themselves but also creates opportunities for Western European businesses, as suggested earlier. This applies in particular to those countries which border the new EU Member States, such as Germany. Berlin is a special case in this respect because of its dual legacy of capitalism and socialism and recent experience of reunifying divided utility systems. This opportunity is being seized, for example, by the Berlin intermediary ucb, which was originally founded in 1992 as a joint subsidiary of a regional engineering company and the Berlin water utility but has been independent since partial privatisation of the utility in 1999. One of ucb's key objectives is to market its expertise on the technical and organisational transformation of utilities in Berlin and Eastern Germany post-unification in Central and Eastern European countries.

4.4. EU policy

The European policy context deserves particular attention as a driving force behind both the emergence and the reorientation of intermediary activity.

EU regulations stimulating the emergence of intermediary activity

Increasingly stringent environmental standards for water resource management in the European Union have created important openings for a wide variety of intermediary organisations. The Urban Waste Water Treatment Directive was, for example, instrumental behind the launch of the project CLEVER (Coastal Liquid Effluent Volume Reduction) in the North East of England. Between 1999 and 2001 CLEVER provided SMEs with knowledge on how to reduce water consumption and wastewater production, thereby meeting EU standards whilst at the same time becoming more competitive and cost effective. Similarly, the Regional Centre of Plant Protection and Quality Control was established in Volos, Greece, in 1995 in response to the need to minimise pollution of groundwater resources from agricultural production in accordance with EU regulations. The existence of several new intermediaries can be attributed primarily to the requirements of the EU Water Framework Directive (WFD), particularly regarding innovative aspects of river basin planning, public involvement and trans-boundary cooperation. One such case is the Ribble Valley Stakeholder Forum in North West England, a network within a WFD pilot project on stakeholder participation in the Ribble Valley.

The effect of EU regulations on intermediary emergence is equally significant in the new Member States and, to a lesser degree, the Accession States. Both Hungary, a new Member State since 2004, and Bulgaria, currently negotiating membership, are having to introduce far-reaching institutional changes to meet EU requirements. This process is creating spaces for intermediaries providing institutional, technological and commercial innovations. Examples of new commercial intermediaries created in Hungary to help meet EU environmental standards include ACAT, a subsidiary of an Austrian company which offers utilities chemicals for water and wastewater treatment, and Körte-Organica Environment Technological Co., formed in 2000 to offer technical consultancy on soil treatment, ground and surface water protection and wastewater treatment.

EU regulations affecting the reorientation of intermediary activity

Besides creating space for new intermediaries the WFD is also contributing to the (partial) reorientation of existing organisations. For example, the Berlin section of Friends of the Earth Germany (BUND Berlin), conventionally engaged in campaigning and awareness-raising measures, is using its expertise to coordinate the participation of NGOs and the involvement of the public in the implementation of the WFD, for example in the Oder and Elbe river basins. Similarly, the World Wildlife Fund, established in the 1960s in the context of environmental threats to animals, is actively involved in the WFD pilot project in the Ribble Valley and represented in the National Stakeholder Forum for the WFD. The Hungarian Vituki Consult, a company formed to provide consultancy on technical aspects of water and waste management, is today preparing a concept for public involvement in implementing the WFD in Hungary. The Mersey Basin Campaign (North West England) provides a further example of adapted intermediarity. Established in 1985 “in the context of concerns about ‘urban unrest’” its original objectives were to improve water quality and fish stocks across the Mersey basin catchment, encourage waterside regeneration, promote public awareness of the importance of rivers, waterways and coasts and create participation opportunities. In the course of the procedure to implement the WFD since 2000 these original objectives are gaining new significance “as the MBC [Mersey Basin Campaign] takes on a wider regional role, particularly in the context of the WFD”.

All these examples indicate the extent to which European policy is creating favourable contexts for the emergence and development of intermediaries. They also suggest, however, that organisations performing intermediary functions of this kind may well have a substantial bearing on the implementation and effectiveness of EU water policy. Investigating this question of how intermediaries work and what impact they can have is the subject of the following chapter.

5. Analysing modes of intermediarity

5.1. Introducing intermediaries in action

What do intermediaries actually do? One initial response to this question is to list the variety of intermediary activities identified in the inventory. The examples listed in Fig. 7 give an initial impression of the diversity and richness of the functions intermediaries perform.

Fig. 7: Intermediary activities

Intermediaries can and do…
– provide educational and technical support on all aspects of water management
– build partnerships and initiate dialogues to improve water services
– create new markets around innovative products and services
– lobby for reforms to water management institutions
– broker agreements between different stakeholders
– work across different territories of water management
– mobilise interest and support for water protection
– operate information portals for the general public
– highlight deficits in water and sanitation services
– monitor the performance of utility companies
– facilitate the dissemination of resource-saving technologies
– advance alternative discourses on water management
– enrol technical and managerial experts to address specific problems
– coordinate funding programmes in research and development
– organise initiatives and campaigns around water issues
– engage to resolve water conflicts
– raise awareness of environmental, social or institutional aspects
– make water more visible to providers and users
– link water management to other policy issues.

Our first observation is, therefore, that intermediarity exists in highly diverse forms. To help structure this diversity we initially sought to identify simple categories of intermediaries according to particular types of intermediary activity in the water sector. The following types were used to categorise the intermediaries in the inventory on a very straightforward basis:

1. bridge-builders, mediators, go-betweens or brokers, facilitating dialogues, resolving conflicts or building partnerships,

2. ‘info-mediaries’, disseminating information, offering training and providing technical support,
3. advocates, lobbyists, campaigners, gatekeepers or image-makers, fighting for particular causes and
4. commercial pioneers, innovators and ‘eco-preneurs’.

These categorisations have proved a useful introduction to identifying essential similarities and differences between individual organisations. However, being strongly reductionist, they are less helpful when it comes to uncovering the complexities of intermediaries in action. For this reason we choose here to explore diverse modes of intermediarity from three complementary perspectives: how intermediaries contribute to EU water policy objectives, how they facilitate social learning and policy delivery and how they work across diverse policy fields.

5.2. Intermediaries advancing EU water policy objectives

One way of explaining what intermediaries do is to illustrate with examples how particular organisations address key issues of urban water management. Given the European dimensions of the project and the inventory it is helpful to structure these contributions according to EU water policy objectives. These relate firstly to water protection (as specified in the Water Framework Directive in particular) and secondly to water supply and sanitation services (as specified in the White Paper on Services of General Interest).

Water protection
A large proportion of the intermediaries described in the inventory are actively engaged in encouraging the more **rational use of water resources**. These activities are directed at minimising water abstractions, reducing losses in water supply networks, reducing consumption by end-users (household, commercial and public sector) and re-using water. Several commercial intermediaries are engaged in developing, manufacturing, marketing and promoting end-use appliances for reducing water consumption in households. Gustavsberg, for instance, is one of the main providers of bathroom equipment (mixer taps, showers and toilets) in Denmark. In the 1980s, in response to growing environmental concerns, it was one of the first companies to develop a whole range of water efficient toilets and taps. By mainstreaming water efficient appliances and making it convenient for consumers to save water, as well as excluding products that encourage high water use from its range, it has played a major part in reducing per capita water consumption in the Copenhagen region. Similarly, though on a smaller scale, the Greek company Lamprou S.A. provides a range of water-saving technologies for household use in the Volos region. These include water-saving flushing systems and water-flow switches which limit through-flow to preset levels.

By contrast, the addressees of the Hungarian firm AquAcust are water utilities and large industrial companies. AquAcust monitors water supply networks to identify leakages, localising damaged pipes and measuring the scale of water loss. The company can reduce water losses substantially, thus saving resources and costs in the longer term, but is experiencing difficulties in persuading financially weak water utilities of these benefits. Very

different again is the Initiative Sustainable Hairdressing in Berlin. This is a joint initiative of the Technical University of Berlin, the city's Local Agenda 21 and the hairdressers' guild to explore ways of reducing the huge amount of water used by the city's 2,300 salons, where annually 10 million customers consume per capita between 20 and 100 litres. The campaign promotes water-saving technologies and a waste separation system direct to the salons.

The second focus of water protection activities is on **reductions to water pollution**. These are primarily targeted at improving the treatment of urban wastewater, but also at reducing industrial emission levels and pollution from intensive agricultural production and improving water treatment for use. ACWa, for instance, is a commercial environmental company based in the North East of England specialising in the design and construction of water and effluent purification systems. It adapts new techniques of water and effluent treatment to the specific needs of industrial clients, such as the first (and to date largest) ultra low pressure reverse osmosis plant for drinking water supply in the region and the first commercially viable membrane bioreactor in the UK. To do this it has established a pivotal go-between position between technology suppliers and industrial water users as well as between the latter and the environmental regulator. The German company newtec Umwelttechnik GmbH similarly provides tailor-made technical solutions to large water users. Its electrolytic drinking water disinfection system is applied, for example, in bottle cleaning plants, car washing plants, swimming pools and mobile water systems (e.g. in trains).

North West Chemicals Initiative (UK)
NWCI was established in March 2000 as part of a regional development strategy for the North West of England. This industry-led organisation was formed to improve the competitiveness of the chemical industry in the North West by reducing costs and environmental damage, making the sector more attractive for investment and demonstrating the industry's commitment to sustainability. A pilot project – Mersey Banks Industrial Symbiosis – has been initiated to encourage companies to cooperate to improve resource efficiency, in particular relating to the re-use of water in industrial processes, reductions to water abstraction and pollution levels in industrial effluent. More information under: www.chemicalsnorthwest.org.uk

A third pillar of EU water protection policy – **public and stakeholder participation in water resources management** – is a further focus of intermediary activity. Examples in the inventory include organisations entrusted with enrolling the general public in the development of river basin management plans required by the Water Framework Directive, such as the Ribble Valley Stakeholder Forum in the North West of England or the Hungarian consultancy Vituki-Consult Rt. Relating more directly to water supply and sanitation systems the County Durham Local Action 21 group develops projects at its roundtable discussions targeted at encouraging greater user involvement in water management, such as the 'Using Water Wisely' campaign in conjunction with the local utility and the construction of two new water-efficient schools. In Bulgaria, where sensitivity towards water issues is generally underdeveloped, a non-governmental organisation, TIME – Ekoprojects Foundation, is working to encourage greater public participation in decision-making and assisting local and national authorities in making their water-related policies and strategies more environmentally sustainable. It provides financial and technical support for community based initiatives for the

sustainable use of natural resources and local environment action plans. In addition it aims to strengthen the institutional capacity of localities to address environmental issues by means of consultancy aid, training workshops and fundraising.

Water supply and sanitation services

The EU White Paper on Services of General Interest (COM(2004) 374 final) sets out a number of policy objectives relevant to water supply and sanitation services. These comprise primarily issues of cost-efficiency, affordability and quality of service. Improving the **cost-efficiency of water services** is of particular importance to several of the commercial intermediaries included in the inventory. CookPrior Associates Ltd is a commercial consultancy in the North East of England offering technical and managerial advice to large water users (businesses, universities, trade and professional associations) about ways of reducing the costs of wastewater treatment, with particular emphasis on commercially robust process improvements. The Lancashire Business Environment Association (BEA) in North-West England is a charitable partnership which demonstrates to SMEs the business benefits of environmental savings. Through one of its projects, Sustainable Water Environment in Lancashire, BEA offers advice and assistance on water saving to SMEs and mediates between them and the environmental regulator. Their package includes staff training and awareness raising, site water audits, water use monitoring, techniques for re-use and recycling and sustainable drainage solutions.

Social Housing Associations (DK)
The social housing sector constitutes about 20% of all dwellings in Denmark; half of these dwellings are located in the Greater Copenhagen Region. In the 1980s water prices in Copenhagen began to rise dramatically. In response, the social housing associations introduced measures to upgrade the technical system and change practices of water use in an effort to reduce costs, as well as to benefit the environment. Over the years they have succeeded in creating a solid market for water-efficient technologies, helping to establish them as mainstream products. More recently, the social housing associations have been active in improving residential estates with low-use water features, ponds that store rainwater and local percolation of stormwater. They are also pioneers in grey water use.

The **affordability and quality of water supply and sanitation services** is an issue of prime concern for intermediaries addressing consumer interests. In several of the countries studied consumer organisations are very active in campaigning for cost levels which are affordable especially for low-income groups, as well as for good quality drinking water for all consumers. The Federation of Consumer Associations in Germany, for instance, draws public attention to the potential risks of privatisation and liberalisation in terms of higher water charges to pay for investments, health risks from reduced security standards and loss of management capacity of local authorities. The Bulgarian National Consumer Association provides information and discussion forums on water issues in the Sofia region, creates media interest in cases where consumer rights are infringed and works to raise awareness of consumer issues amongst the water/wastewater utilities, public authorities and NGOs. In the UK the consumer organisation Water Voice is today an integral part of the regulatory mechanisms governing the water sector. WaterWatch, established in 1994, is a voluntary network of individuals and organisations concerned with consumer, environmental, regulatory

and health issues around water. It promotes debate about the UK water industry, highlighting consumer concerns by means of campaigns, submissions to the government and research.

5.3. Facilitating social learning and policy delivery through intermediarity

The above examples of intermediaries in action suggest that their importance lies not merely in the issues they address but also in the ways in which they engage with other actors, with institutions, with technologies and with local environments. This is a second way of describing how intermediaries work: illustrating with examples the different ways in which they facilitate learning processes and policy delivery.

a) Adapting technologies to contexts of application

Several of the intermediaries engaged in technology dissemination are doing much more than exploiting the opportunities being created for new products and services under the current restructuring of the water sector. They are discovering, through the experiences they make with clients, that the process of getting people to introduce and use new technologies – if it is to be successful – requires great sensitivity towards the contexts in which they are introduced. They need to relate to the thinking, language and logics of action of the technology user. This is a lesson appreciated by such commercial intermediaries as CookPrior, referred to earlier, and EPARCO, which markets innovative techniques for decentralised wastewater treatment systems in France. In England Envirolink North West is a non-profit organisation which promotes the regional environmental and technology services sector. It addresses technology transfer in particular, striving with its activities to bridge the link between design, prototype and market for the final product as well as to adapt technologies to different contexts. It does this primarily by forging better links between water technology companies, universities, public agencies and business organisations in the region.

b) Translating knowledge into new products and services

Intermediaries use their knowledge not only to disseminate technologies but also to develop new products and services. The inventory includes many cases of organisations whose intermediary function lies in translating knowledge – such as technical or management expertise – into viable applications. Cleveland Biotech, for example, is a company in the North East of England which grows and acclimatises naturally occurring bacteria with which it creates products for the bio-degradation of organic wastes, including fats, oil and greases, cellulose, petroleum hydrocarbons and chlorinated organics. The clients are principally in the catering, food processing, chemical and paper manufacturing sectors. Originally focussing on the design and manufacture of bio-remediation products the company is shifting its attention to consultancy services offering full applications advice, to meet changing market needs. Another technological innovator is the Körte-Organica company in Hungary which holds several patents for biological technologies of wastewater and surface water treatment. One of its products is the Lake Restorer, an artificial floating island of diverse plants which clean surface water, over which it holds exclusive distribution rights for Central and Eastern Europe. Knowledge of a very different kind is applied by the consultant ucb in Berlin. Building on experiences made in restructuring water supply and sanitation systems in Eastern Germany following reunification it offers technical and business know-how to utilities and municipalities in Germany and other countries in Central and Eastern Europe on ways of dealing with the particular management challenges posed by these transformation processes.

c) Connecting people, building networks

Envirolink North West and the North West Chemicals Initiative, mentioned above, are examples of the networking functions an intermediary can perform. Whilst many intermediaries are actively engaged in bringing people together or mediating between organisations, some are themselves network organisations. In Berlin two interrelated networks for water management have recently been created: the Association for the Advancement of Water Businesses (VFW) and the Berlin Centre of Competence for Water (KWB). The VFW is a network of SMEs operating in the water sector in the Berlin-Brandenburg region. It was created in 2002 to facilitate communication between members and to liase with the KWB as a means of advancing common interests, acquiring external funding for R&D projects and building contacts with national and international organisations. The KWB was established in 2001 in conjunction with the partial privatisation of the Berlin Water Utility BWB. This network, comprising the city's water utilities (BWB and Veolia), research institutes, public authorities and the VFW, was created to pool the knowledge resources on water management of the members and create synergies in the form of practical research and development projects which can be marketed externally.

Water Resources Network of Magnesia (GR)
The Water Resources Network of Magnesia (DYPOM) is a unique organisation of water management in Greece. In a country where management of the water sector has traditionally been hierarchical and exclusive, DYPOM is distinctive as a forum for informal dialogue and pre-decision communication between key actors of water management in the Volos region. Represented in the network are the regional water utility, local authorities, environmental NGOs, private companies and research organisations. The creation of DYPOM in 2004, on the initiative of partners in the Intermediaries project, reflects growing recognition in the region of the need for a more collective and inclusive approach to solving water management problems within the current institutional framework. In the short period since its creation the network has launched activities to raise awareness of water efficiency, provided training courses and – most importantly – developed a culture of dialogue between the region's key actors. Further information: www.uehr.panteion.gr/dypom/

d) Lobbying and advocating reforms

In contrast to networking organisations seeking common ground between the members, several other intermediaries pursue a more partisan approach, lobbying for a particular cause or aspect of water management. Their intermediary functions lie in positioning themselves between key actor groups, enrolling support from diverse stakeholders and framing discourses on water issues to their advantage. Environmental and consumer organisations are obvious examples. Others are the national professional associations for water and sanitation services. One of these, the Bulgarian Water Supply and Sewage Association (BWSSA), is particularly notable for the role it is playing in generating a reliable regulatory framework for the water sector in the country. In the absence of effective legislation in Bulgaria the BWSSA is active in pushing for the necessary reforms, shaping policy priorities in close consultation with national ministries, state agencies, local authorities and trade unions. It organises events and training courses on technical and organisational aspects of water and wastewater

management, publishes journals and contributes significantly to national strategic planning for the sector.

e) Providing information, guidance and support

Intermediaries are also instrumental in initiating and guiding flows of information on water issues – albeit in very different ways. On one level several large water utilities have established their own educational programmes to encourage consumers to use water rationally and minimise pollution and to explain company strategy. Within the inventory this applies to the 'Using Water Wisely' initiative devised by Northumbrian Water together with the County Durham LA21 Group, the 'Water for the Future' programme developed by Sofia Water and the Centre d'Information sur l'Eau created by the French water companies in 1995. In many cases these programmes have been created to counter strong public criticism of the water utility. On a less partisan level intermediaries maintain informative websites on water management, such as SAGE in the UK or the environmental education website in Berlin with teaching materials on water consumption for schools. BlueLink is a foundation in Sofia which runs an internet portal on the environment with a particular focus on water protection and drinking water quality and treatment.

Many intermediaries, as already indicated, provide technical support and training. Within the inventory two organisations stand out in particular. The North East Centre for Environmental Services (NECESI) was initiated by the University of Durham in 1999 to link its expertise to the needs of businesses in the region. It offers a wide range of environmental services for SMEs, for instance advice on the implications of environmental regulation, environmental audits and management systems, access to innovative environmental technologies and assistance in identifying regional market opportunities for environmental products. A very different resource for know-how is the International Office for Water (IOW) in France, which runs the National Service for Information and Documentation on Water with an extensive database. IOW also operates the National Training Centre for Water Professions, providing some 400 training sessions each year.

f) Raising awareness, broadening perceptions

Other 'info-mediaries' are geared less to providing information than to raising awareness of water issues, often resorting to unconventional means to reach their target audiences. The Infobus in Budapest is a mobile information centre with high quality, hi-tech exhibits on all aspects of water management which was created in 2004 to address a perceived knowledge gap between service providers and consumers on the background to increased water prices. A similar bus – the Mobile Centre for Environmental Technology (MUTZ) in Berlin – is geared rather towards environmental issues, such as wastewater treatment, rainwater use and resource-saving production processes. The so-called Water Museum Berlin goes further in trying to nurture a more holistic approach to water in everyday life, emphasising water's multiple cultural values. It uses hand-on experiments ('the water course') and educational techniques ('the water detectives') to encourage children to see water in different ways and in different settings. The Water Surface in Copenhagen is a municipal information centre on the water cycle and water infrastructure which – apart from its educational activities – generates new ideas and strategies in the local community, for instance on water saving.

g) Filling institutional voids

A further interesting dimension to intermediary activity is the way in which they can occupy institutional voids in urban water management. The reordering of water supply and sanitation services in the wake of liberalisation, privatisation, commercialisation or structural transformation can create situations where particular societal needs are not, or not adequately, covered by existing institutions, at least temporarily. This might apply to environmental standards, affordable water prices or acceptable levels of service. The Bulgarian inventory provides several examples of intermediaries – both commercial and non-profit organisations – responding to the severe inadequacies of the existing regulatory framework for water supply and sanitation services (see 4.3 above). The case of Service Public 2000 in France (see box) illustrates the important functions of intermediaries who seek to redress the imbalanced power structures in French water management between local communes and the major water companies.

Service Public 2000 (FR)
Local authorities in France are responsible for water services but generally contract these out to one of the large French water companies. This asymmetrical relationship between municipality and utility puts the former at a serious disadvantage in contract negotiations. To offset this imbalance the French Mayors Association (AMF) and the National Federation for the Management of Local Public Utilities (FNCCR) created an organisation – Service Public 2000 – in 1996 to advise local authorities on how to negotiate or renegotiate contracts with the private water companies. It has, in particular, devised an audit for assessing the contracts with the purpose of highlighting points where modifications – technical, financial and organisational – are desirable. Further information: www.sp2000.fr/

5.4. Intermediaries working across policy fields

A distinctive feature of many organisations in the inventory is that their activities are not restricted to the water sector alone. This applies, for instance, to environmental organisations, sustainability initiatives or environmental technology consultants. For some intermediaries, indeed, water is a peripheral – if still important – part of their remit, as in the case of the social housing associations in Denmark. One of the strengths of the inventory is that it reveals actors important to urban water management often hidden from view. Another is that it illustrates how intermediarity can involve working across different policy fields to positive effect, exploiting synergy effects from connecting water to other issues. This is a third way of exploring how intermediaries work.

Water and energy

Water consumption is linked to energy use in several ways and at different stages, from household appliances to energy-intensive wastewater treatment plant, and this is reflected in the inventory. Integrated Utility Services Ltd designs and installs electricity, gas, water and communications networks at the same time and in the same trench for clients primarily in the North East of England. Benefiting from the growing liberalisation of network management in the UK and the potential savings to be gained from integrated installations the company has

installed around 17,000 connections since 1999, mediating between utilities and developers. Connections of a very different kind are sought by the Copenhagen Environment and Energy Office (KMEK), an urban ecology NGO which promotes holistic solutions to environmental problems. Originally focusing on energy saving and renewable energy technologies KMEK has since the 1990s been active also in water management, initiating projects, launching campaigns and advocating reforms for more sustainable forms of water use in the city. The local technologies it promotes are directed at saving both energy and water resources.

Water and public health

The public health aspects of drinking water and effluent – historically the main driver for urban infrastructure systems – are often taken for granted. However, at certain times and in certain regions of Europe waterborne diseases pose major health hazards. Intermediaries can highlight these problems and intervene to solve them in a variety of ways. In Greece, where the quality of tap water can be unsuitable for drinking, the company Healthy Water provides end-of-pipe filtration and sterilisation devices for improving the water to potable standards. Similarly, the Berlin company newtec Umwelttechnik GmbH markets an electrolytic water disinfection system for eliminating Legionella and other germs in household and hot-water systems (e.g. swimming pools). Public health agencies in all countries are, of course, responsible for monitoring the quality of drinking water for potential health risks. The Health Protection Agency in the UK works particularly closely with the water utilities, regulators and local authorities to inform and advise on public health issues, helping to identify ways of reducing levels of waterborne infections or of dealing with emergency situations.

Water, land use and spatial development

The development of infrastructure systems is inextricably linked to the development of the localities and regions they serve. This self-evident fact is, unfortunately, often not given due recognition in urban or regional planning processes. The division of responsibilities between urban development and water/sanitation systems poses an obstacle to integrated concepts for spatial and infrastructure development. Several intermediaries documented in the inventory bridge this divide, at different geographical scales. At the level of the building the architectural firm Glassarc in North-East England is committed to sustainable construction through the use of appropriate technologies. These include water-saving devices and strategies for their clients to reduce water consumption in the buildings they design. On a larger scale the Mersey Basin Campaign is a partnership of regional stakeholders which is using water quality as an integral part of urban regeneration along the River Mersey. It works to improve water quality in the whole catchment of benefit to fish stocks and angling, to encourage high quality waterside regeneration and to promote public awareness and appreciation of the importance of rivers, waterways and coasts. The link between water quality and agriculture is of central importance to The Seasons, an organisation that promotes organic farming in Denmark. It delivers organic products to around 35,000 households and is a key player in minimising the pollution of groundwater and surface water resources from pesticides, fertilisers and intensive farming practices. This is of direct benefit to urban water supplies, improving drinking water quality and reducing the need for costly treatment.

BULPLAN Ltd

The company BULPLAN, based in Sofia, is responding to the urgent need for a combined approach to urban and infrastructure development in post-socialist Bulgaria. The early 1990s witnessed uncontrolled urbanisation of major cities resulting in unacceptable levels of population density. The problem is exacerbated by the inability to provide adequate technical infrastructure in the new settlements and the lack of investment in water supply and sanitation systems in the past. BULPLAN supports the local authorities, developers and utilities with studies and advice on how to plan urban development in a way that takes into sufficient consideration the limited water resources of the Sofia region, the investment needs of the infrastructure networks and the effects of management restructuring to water supply and sanitation systems.
Further information: www.bulplan.com

d) Water and social justice

Other intermediaries draw explicit links between water services and social justice issues, relating generally to water pricing, metering, and drinking water quality. The Bulgarian National Consumer Association, for instance, not only informs on the potential risks for consumers of privatising the water sector but also highlights in the media cases of social injustice connected to water supply and sanitation services. The key objective of the consumer group WaterWatch (UK) is to influence the development of the water industry so that customers and the environment are put before profits and dividends. Its work is oriented towards giving the public a greater say in the way the water industry is run and securing greater value for money for water consumers. The social housing associations in Copenhagen use water management as one of several tools to minimise costs for low-income residents in particular. Like many other intermediaries they seek to use environmental initiatives as a means of encouraging greater participation and strengthening social capital in the neighbourhood, locality and region, working across sectors, which the utilities seldom do.

6. Impacts and potential of intermediaries

Assessing the influence of intermediaries

What impacts do intermediaries have on urban water management? What difference do they make? The existence of a large number of diverse organisations performing a variety of intermediary functions suggests that their influence on water management – collectively, if not individually – may be considerable. This assertion is hard to substantiate, however, without detailed analysis of individual cases. For several reasons it is difficult to measure the outputs and outcomes of intermediary activities. Firstly, the nature of much intermediary activity cannot be readily isolated and quantified. Much of their contribution lies in changing attitudes, building trust, networking stakeholders, influencing policy priorities or bridging discourses: all functions which defy accurate assessment. Secondly, much of their influence is indirect rather than direct, for instance creating conditions favourable for technology take-up rather than installing the technology themselves. Thirdly, many of the impacts – for example on behaviour – are long-term and multi-causal. Fourthly, most of the intermediaries identified are relatively small organisations, which individually may not be very influential but which collectively alongside other similar organisations may well be. Finally, and as a consequence of the above, there is very little reliable data available on the performance of intermediaries, something which poses a problem for the organisations themselves.

Given the breadth of the inventory we have not been able to investigate in detail the impacts of each intermediary on, for instance, water consumption levels, water quality improvements, service costs, management procedures or institutional capacity. This task is pursued in more depth in two further research activities on the project: a statistical analysis of ca. 30 commercial intermediaries from seven urban regions and qualitative analyses of nine case studies of diverse aspects of intermediarity in the same regions. For this synergy report we have had to rely largely on descriptions by the organisations themselves. Nevertheless, it is possible to extract information from the inventory on the kind of indicators which are available, at least for some types of intermediary, and use these to illustrate the performance of individual organisations.

Several intermediaries possess data on the water saving achieved with the assistance of their interventions. Thus ucb in Berlin claims a reduction of 20% for all the companies participating in its ‘Ökoprofit’ project. The Lancashire Business Environment Association increased water savings in its partner SMEs from ca. 16,000 litres in 2002/3 to ca. 205,000 litres in 2003/4. Others can quantify the cost savings they have achieved for their clients. The project CLEVER (Coastal Liquid Effluent Volume Reduction) in the North East of England reports savings of up to £275,000 per annum. Some keep records on the users of their products and services, such as the number of website hits (environmental education on Berlin), visitors (Water Museum Berlin, The Water Surface) or customers (the partnership ENWORKS in the North West of England). Customer satisfaction is an important indicator of the appeal of commercial intermediaries. The more qualitative the data and the more subjective the (self-)assessments, the harder it is to provide a reliable picture of impacts. There are cases, however, where even from the inventory the influence of individual organisations is very evident. This applies, for instance, to the supervision exercised by OMONIT over the private water concessionaire in Sofia and to the formative influence of BWSSA in developing a regulatory framework for water services in Bulgaria.

The potential and limitations of intermediarity

The difficulties encountered in assessing the impacts of intermediaries are indicative of the methodological problems in capturing intermediarity empirically. By way of a conclusion to this report it is worth reflecting on the diffuse nature of intermediarity and what implications this has for the potential but also the limitations of intermediary activity in urban water management.

Our research on intermediaries, including the inventory, has taught us not to look just for the cases of obvious intermediarity. Organisations which deliberately and exclusively perform intermediary tasks are rare. Even fewer are the number of organisations which would have described themselves as intermediaries before contact with the project. There do exist several organisations which we might term strategic intermediaries, in the sense that they have been deliberately established to work across a particular set of relationships to a particular end. For many others, though, the intermediary functions they perform are – at least initially – non-deliberate. Intermediarity is often unintentional or not fully appreciated. Moreover it can be provided by organisations otherwise engaged in non-intermediary activities – such as within a utility – or, as we have seen, in policy fields beyond water management. It is important to appreciate, in other words, that the organisations we are investigating are often unaware of the intermediary functions they are performing. It follows that much intermediarity is concealed to observers. Revealing hidden intermediarity is, for this reason, a prime motive for our research project.

We also need to beware of taking a normative approach to intermediarity, for instance as a contributory factor to some preferred form of participatory governance of water management. Intermediarity is by no means always beneficial, in terms of the processes it initiates or the impacts it has. As we have seen, all intermediaries are pursuing some agenda or other of their own preference, whether commercial, environmental, social or political. Many are highly selective in the issues they support and the activities they perform, not able or not willing to contemplate aspects deemed peripheral to their interests. This selectivity is particularly visible in the gatekeeper function of some intermediaries. We also need to be alert to the danger of interpreting something innovative into the essentially conventional practices of some organisations. There are, furthermore, plenty of examples of failed intermediarity, where for instance a partnership has broken up or a technology failed to gain acceptance. Similarly, important opportunities can be missed or wasted by intermediaries. This brings us to the final point of adaptive intermediarity. Closer investigation of individual intermediaries and their development reveals how many need to adapt – sometimes quite dramatically – to the experiences they have made or to shifting contexts of action, altering the focus of activity or the thrust of intermediation. These continuous learning processes would appear to be critical to the success of an intermediary and the products or services it provides. This important aspect, only touched on in the inventory, is a key issue in several of the case studies which build on this synergy report.

Annex I: List of categories of intermediaries for the inventory

WATER USER

- E.g. British fish food company introducing strategies to minimise water use and effluent in response to increasing water prices

SERVICE PROVIDER

- Construction, environment planning & management consultants
- E.g. water retailer providing complete management packages & billing services
- E.g. developer of computerised water monitoring database system providing benchmarks and targets for water consumption

PRODUCER AND DISTRIBUTOR OF INNOVATIVE TECHNIQUES

- E.g. distributor of water meters, dry toilets etc.
- E.g. producer of sewage treatment techniques

NETWORKS AND MULTIPLIER

- Research networks, professional associations etc.
- E.g. 'Water Berlin': German company which organises an international trade fair and congress on water management
- E.g. British cement association acting as a catalyst for environmental technologies

RESEARCH SPONSORS / PROMOTERS

- Ministries, foundations or private companies with their funding programmes
- E.g. German Environment Foundation sponsoring research into environmentally friendly production techniques

CONSUMER ORGANISATIONS

- Organisations mediating between consumer and business interests

ENVIRONMENTAL ORGANISATIONS

- NGOs, 'green groups', 'eco-protectors', pressure groups and environmental lobbyists

EDUCATION

- E.g. Sofia Water Company's informational programmes encouraging the reappraisal of existing practices and technologies
- E.g. the provider of an environmental protection course for the employees of a Hungarian water company

'INFOMEDIARIES'

- E.g. organisations providing web-based information services

Annex II: Template for the inventory

1. **STATUS:** WHO IS THE INTERMEDIARY?

Brief description of the intermediary:

a) What is its organisational status (e.g. non-profit organisation, commercial company, network)?

b) What is its spatial scope (city, region, national, multinational)?

2. ORIGINS: HOW DID THE INTERMEDIARY EMERGE?

a) How long has it existed?

b) What factors contributed to the emergence of the intermediary?

c) Is it exploiting new niches? Is it the only (local) intermediary in its field?

3. CONTEXT: WHAT CONTEXTUAL FACTORS FAVOUR (OR HAMPER) THE INTERMEDIARY'S FURTHER DEVELOPMENT?

These contextual factors might be environmental, technical, institutional, commercial, social or a combination of these.

4. OBJECTIVES: WHAT DOES THE INTERMEDIARY HOPE TO ACHIEVE?

The intermediary's objectives may be environmental, social, technical, political, commercial or a combination of these. Reference should be made also to any changes to the intermediary's objectives during its existence.

5. WATER ISSUES ADDRESSED: WHAT POINT(S) ALONG THE WATER CYCLE ARE THE FOCUS OF THE INTERMEDIARY'S ACTIVITY?

Examples are: groundwater protection (quality/quantity); water abstraction; drinking water treatment/quality; water distribution (leakage!); water consumption; sewage/rainwater quantity/quality; wastewater collection, removal and treatment; surface water pollution.

6. SERVICES & FUNCTIONS: WHAT KINDS OF SERVICES DOES THE INTERMEDIARY PROVIDE?

A brief description of the intermediary's activities (technical planning, consultancy, training programme etc.) should be complemented by a rough categorisation of their function ('broker', 'educator', 'pioneer' etc.). Reference should be made also to any significant changes to these activities during the intermediary's existence.

7. **ADDRESSEES & NETWORKS:** WHO DOES THE INTERMEDIARY TARGET AND HOW IS IT LINKED TO OTHER ORGANISATIONS?

By identifying which actors the intermediary is trying to influence and whose interests it might represent the aim here is to help locate it within the social organisation of the region's water management, positioning it wherever possible with respect to the utility, the consumers, the regulators/planners and other key actor groups. Distinguish, where possible, between formal and informal relationships.

8. INNOVATIVE QUALITIES: IN WHAT WAYS IS THE INTERMEDIARY A FORCE FOR CHANGE?

The innovative qualities might relate to technology, social practices, networking, policy priorities, urban management etc. We need to consider not only deliberate innovation but also the unintended by-products of the intermediary's activity.

9. IMPACT & INFLUENCE: IN WHAT WAYS AND TO WHAT EXTENT DOES THE INTERMEDIARY AFFECT URBAN WATER MANAGEMENT?

A very rough and brief appraisal of the intermediary's impact on the use of water resources, costs and/or utility services is required. This should include evidence provided by the intermediary itself, where available.

10. FURTHER INFORMATION

Website, contact details, brochures etc.

Annex III: List of intermediaries in the inventory

Intermediaries Germany (Berlin Region)

ucb Management Consulting Ltd. (ucb Management Beratung GmbH)

BSU Consulting and Service Company (BSU Beratungs- und Service- Gesellschaft)

newtec environmental technology Ltd. (newtech Umwelttechnik GmbH)

AKUT Environmental Protection Engineering (AKUT Umweltschutz Ingenieure Burkard und Partner)

Berlin Centre of Competence for Water (KompetenzZentrum Wasser Berlin)

Association for the Advancement of Water Business (Verein zur Förderung des Wasserwesens - VFW)

Technology Foundation Berlin (Technologiestiftung Berlin - TSB)

Mobile Centre for Environmental Technology (Mobiles Umwelttechnik Zentrum – M.UT.Z)

Water Museum Berlin (Wassermuseum Berlin)

Centre for Environmental Protection Ökowerk Berlin (Naturschutzzentrum Ökowerk Berlin)

http://www.umweltbildung-berlin.de (Web-based information source on environmental education in Berlin)

Online Service of Berliner Wasserbetriebe

Federation of German Consumer Organisations (Verbraucherzentrale Bundesverband – vzbv)

Initiative "Sustainably operating hairdressers" (Initiative "Nachhaltiges Wirtschaften im Friseurhandwerk")

Berlin Section of Friends of the Earth Germany (Bund für Umwelt und Naturschutz Deutschland – BUND -, Landesverband Berlin)

Intermediaries Bulgaria (Sofia Region)

Bulplan Ltd.

Ecoplan Engineering

Demand Management and Customer Water Use Efficiency (WUE) **Plan**

Gorna Banya Bottling Company

Uniterm Ltd.

Bulgarian Water Supply and Sewage Association (BWSSA)

National Water and Sewage Regulator (NWSR)

TIME - Ekorprojects Foundation

Environmental Protection Activities Management Company (EPAMC)

"Water for Future" Programme

Bluelink

"Utilities" Magazine

Bulgarian National Consumer Association (BNCA)

Bulgarian National Association Water Quality (BNAWQ)

Scientific-Technical Union of Water Affairs in Bulgaria (STUWA)

Omonit Ltd.

Intermediaries Denmark (Copenhagen Region)

Krüger A/S

Gustavsberg

Brunata – water metering

Copenhagen Environment and Energy Office (Københavns Miljø og Energikontor)

Danish Technological Institute – Drainage System (Dansk Teknologisk Institut – Rørcentret)

The Danish Outdoor Council and the Eco-schools campaign (Friluftsrådet & Grøn Skole – Grønt Flag)

Environmental Assessment Institute (Miljøvurderingsinstituttet)

Nyrup Plast A/S (Nyrup Plastics A/S)

The Water Surface (Vandværkstedet)

Danish Water and Waste Water Association (DANVA)

The Swim Centre / The Water Culture House (Vandkulturhuset)

DR – public service TV

The Se@sons

Brøndby VVS (Brøndby plumber)

Social Housing Associations (De almennyttige boligselskaber)

Intermediaries France

Association Scientifique et Technique pour l'Eau et l'Environnement (ASTEE)

Centre d'Information sur l'Eau

Eparco

International Office for Water

Service Public 2000

Cercle Francais de l'Eau

Centres permanents d'initiatives pour l'environnement (CPIE) – Permanent Centre for Initiatives relating to the Environment

Fédération nationale des collectivités concédantes et régies (FNCCR), National Federation for the Management of Local Public Utilities

GRAIE / Groupe de Recherche Rhone-Alpe sur les Infrastructures et l'Eau

Observatoire des usagers de l'assainissement en Ile-de-France

Intermediaries Greece (Volos Region)

Water Resources Network Of Magnesia (DYPOM)

Thomas Antonopoulos, Water filters company

Association of Study and Protection of Magnesia Prefecture

Volos Municipal Enterprise of Urban Studies, Construction and Development (DEMEKAV)

University of Thessaly, Department of Civil Engineering, Laboratory of Hydro-engineering and Environmental Techniques

University of Thessaly, Laboratory of Environmental and Urban Planning

Volos Municipal Enterprise for Water and Sewerage (DEYAMV)

Network of Voluntary Organisations of Magnesia (DIKEOMA)

Healthy Water

Koutsoukos S.A.

Lamprou S.A.

Environmental Initiative of Magnesia

Pan-Hellenic Network of Ecological Organisations

Regional Centre of Plant Protection and Quality Control, Ministry of Agriculture

Conglomeration of wastewater collection tankers

Intermediaries England (North East Region)

ACWA Services Limited

ADAS Catchment Management Unit

BASIC Solutions Limited

Cleveland Biotec

Cookprior Associates Limited

County Durham Local Action 21

Glassarc

Integrated Utility Services Limited

Imass Holdings Limited

Project CLEVER

Waterwatch

Kirknewton Parish Council Water Project

North East Centre for Environmental Services (NECESI)

SAGE

"Using Water Wisely"

Intermediaries England (North West Region)

WaterVoice North West

Health Protection Agency

Ribble Valley Stakeholder Forum

Sustainability North West

World Wildlife Fund UK (WWF)

Groundwork Trust Schools Programme

Lancashire Business Environment Association

Enworks

Mersey Basin Campaign

Envirolink North West

StaR - Centre for Sustainable Technologies and Regeneration

Chess

Access Water Management Limited

United Utilities Contract Solutions

North West Chemicals Initiative

Intermediaries Hungary (Budapest Region)

Acat – Applied Chemicals Anwendungstechhnik

AquAcust - Water Loss Analysis Company

Arvato-Systems

Díjbeszdő Rt.

Hydroconsult Water and Environmental Engineering Consultancy Ltd

Infobus

"Kék Forrás" - Blue Spring

Körte-Organica Environment Technological Co

MOM – Water-measuring Technical Co

Purator

The Hungarian Professional Association of Water and Sewage Companies

Vituki Consult - Environmental and Water Management Consultants

Wilo