

WATER INFRASTRUCTURES BETWEEN COMMERCIALISATION AND SHRINKING The case of East Germany

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ABSTRACT

Drinking water supply and wastewater disposal in East Germany are confronted with two developments: Firstly, they are challenged by the general transformation of the German water market, leading to more private sector involvement and commercialisation of municipal companies. Secondly, shrinking processes in cities and regions not only but in most parts of East Germany cause new problems for water infrastructure. Population decline and less economic activities lead to decreasing demand for water services. In consequence, water supply and wastewater disposal systems have to deal with technical, economic and institutional problems because of massive overcapacities. Water companies are faced with rising costs for system adaptation while the number of consumers and revenues are declining. Rising fees for water services in shrinking cities and regions provoke harsh protests of local tenants and house owners. The interconnection of water market transformation and shrinking processes could turn water supply and wastewater disposal into a medium of regional disparities enhancing differences in the quality of life and regional competitiveness. Nevertheless, the pressure to adapt existing infrastructure systems entails windows of opportunity for new, innovative directions of water management based on flexibility and cooperation.

Key words: Water supply, wastewater disposal, demographic change, structural change, East Germany

1. INTRODUCTION

The German water market is characterised by debates on liberalisation and new forms of regulation, increasing privatisation and processes of commercialisation, tight public budgets, decreasing demand, need for investment and new technological solutions. These general transformations create particular dynamics in shrinking cities and regions. Shrinking – understood as a three-dimensional phenomenon of decreasing population, de-industrialisation and increasing socio-spatial differentiation – is the main spatial development not only but for most parts of East Germany. While reduced water consumption is an issue in all parts of Germany, shrinking regions are especially affected by decreasing demand, which casts doubts on the functionality of existing infrastructure systems. In order to deal with rising costs for investment and the need to reorganise public finances, many municipalities partly privatise their water companies or commercialise water supply or wastewater disposal. Furthermore, water companies in shrinking regions have to deal with high fixed costs which leads to rising fees for water supply and wastewater disposal. High prices endanger regional competitiveness, the quality of living in cities and regions and tend to deepen existing regional disparities.

Using empirical evidence from research undertaken in the East German state of Brandenburg, we investigate the impact of shrinking processes on water infrastructures and emerging regional disparities alongside infrastructure systems of water supply and wastewater disposal. We firstly summarize the main transformation trends in the German water sector. Secondly, we give an overview over the problems of drinking water supply and wastewater disposal in shrinking regions in East Germany. Finally, we discuss possibilities for water management in shrinking regions.

2. THE GERMAN WATER MARKET IN TRANSITION: MAIN TRANSFORMATIONS IN WATER SUPPLY AND WASTEWATER DISPOSAL

The German water sector is highly decentralised, consisting of about 6,000 mainly public water supply companies and more than 7,000 wastewater disposal companies. For decades water supply and wastewater disposal in Germany were characterised by stability and very little changes. In recent years, however, the German water sector has come under increasing pressure for modernisation (Deutsche Bundesregierung 2006). There are five major elements of transformation to identify:

Firstly, German water supply and wastewater disposal are shaped by international debates on the liberalisation of water markets and new forms of regulation. In Germany, these attempts are complemented by initiatives at the national level like the “Ewers-Gutachten”, a report commissioned by the Federal Ministry of Economics, which pointed to the necessity and feasibility of the liberalisation of the German water sector (Ewers et al. 2001). Unlike the electricity and telecommunications sectors, which were recently liberalised in this way, the water sector poses severe obstacles to such a step, the most important one being the physical properties of water itself, which forbid its transportation over long distances and the mixing of water from different sources without risking a loss of quality (Kluge et al. 2003: 47). Water turns out to be an “uncooperative commodity” (Bakker 2004). Even if initiatives for liberalisation have so far not affected municipal water politics in a direct material way, they have brought about important symbolic effects: they have created a climate of insecurity concerning the future legal framework of water supply and sewage disposal and thus made local decision-makers more willing to adjust their utilities to a socio-political environment which may become increasingly competitive.

Secondly, there is an increasing number of (mostly partial) privatisations of water companies and an entrepreneurial turn in public utilities. Although the majority of firms are still in public ownership, private sector involvement is rising. Even if utilities are still completely or predominantly publicly owned, they practically become more and more independent of municipal influence. Especially when transformed into municipal services and organised as limited liability companies, utilities have changed their terms of reference from providing public goods to profit-making. Being major actors of the local and regional economy and contributing to their municipalities’ budgets, they self-confidently reclaim freedom of entrepreneurial decision-making for themselves. A “new logic of infrastructure supply” (Marvin and Guy 1997: 2027) has thus taken possession of public utilities, which today see themselves as “normal enterprises” (see also Edeling et al. 2004, Kluge and Lux 2001).

Thirdly, privatisation and commercialisation correspond to a severe financial crisis of the municipalities. The deficit of German municipal budgets is estimated to amount about 5.8 billion Euro for 2005 (Jakubowski 2006: 238). Decreasing revenues, growing expenditures and high debts, which are largely due to tax reforms and high unemployment rates and thus both part, and an expression, of the neoliberal transformation, make it increasingly difficult to fulfil public tasks. In the water sector, the financial crisis coincides with a high need for investment. 29.8 billion Euro have to be invested in German water supply systems between 2000 and 2009 in order to maintain the networks, to adapt them to changing demand patterns and to cope with the standards prescribed by European environmental legislation. The estimated need for investment in the German sewage systems amounts to 62.9 billion Euro (Reidenbach 2002).

Fourthly, drinking water supply and wastewater disposal in Germany are faced with new environmental requirements, such as the EU Water Framework Directive. The Water Framework Directive fosters an “environmentalisation” of water supply by setting higher standards for groundwater protection and by strengthening the role of environmental NGOs in the management of water resources. Furthermore, new technological options as decentralised wastewater disposal systems, membrane filtration as well as the use of information technologies allow new ways of water supply and wastewater disposal.

Fifthly, demand for water is decreasing in Germany. Due to structural economic change, new water saving technologies and rising environmental awareness among consumers the demand for water went down from 1990 to 2004 by 21 % (BGW 2005: 10). The reduction is especially high in the new federal states of Germany, where declining demand is closely connected to demographic change and shrinking processes.

In the following we shall turn to the situation in East Germany, where the transformation of the water market has been superimposed and thus intensified by the shrinking process.

3. FROM "FLOURISHING LANDSCAPES" TO SHRINKING REGIONS: POST-REUNIFICATION DEVELOPMENTS IN EAST GERMANY

In the first years after reunification a major task in East Germany was to extend access to water and wastewater networks. In the East German state of Brandenburg only 53 percent of the population were connected to centralised sewage in 1990. Especially peripheral rural areas with a low population density were disadvantaged in this respect, so that in infrastructure terms there existed large disparities between city and countryside. Some households were not even connected to the public water supply, but had to get water from wells. Furthermore, many water and wastewater facilities had become obsolete and did not meet the technical, ecological and sanitation standards of the reunified Germany and of the European Union. Leakage rates were up to 20 percent and in industrialised areas there were problems with the quality of drinking water (Berkner and Spengler 1991: 586).

The large demand for modernisation and equalisation measures which arose from this situation gave rise to the widespread belief concerning the development after reunification, that the future of East Germany under capitalist conditions was mainly conceived as a matter of growth and catching up with the levels of wealth and productivity of the West. Helmut Kohl's dictum of "flourishing landscapes" which would replace what was seen as a socialist desert is possibly the most concise expression of the way the future development of East Germany was conceived. Infrastructure systems played a crucial role in this respect: they were considered as a precondition to attract the expected economic and social activities. Their modernisation and extension was thus seen as a prior task and was subsidized by national and European structural policies. Consequently, large investments were undertaken in the first half of the 1990s. The federal government introduced an "urgent programme on drinking water" and between 1991 and 2005 up to 5,000 new wastewater treatment facilities were built in Brandenburg (Niesche 2006). Thus, the proportion of people having access to centralised water and wastewater networks was enhanced.

However, investments were partly miscalculated, insofar as the development assumption did not prove true. Instead of a growing economy in flourishing landscapes, large parts of East Germany in general and of Brandenburg in particular faced an economic and demographic decline. Today there are nearly 1.3 million vacant housing units in East Germany (Sigismund 2006). East German cities are expected to loose up to 25 percent of their population till 2025 (Krautzberger 2001). As a consequence, water consumption in East Germany has decreased dramatically (see figure 1). Thus, the optimistic investments of the years after reunification resulted to a large extent in infrastructural overcapacities with some facilities operating only at half capacity or less. The creation of overcapacities in some places also was the result of dirty deals. Constructing or modernising sewage treatment plants was an interesting field for private investors who sometimes managed to convince a municipality to build (and pay for) a plant the capacity of which exceeded the local needs and requirements. The higher the investments, the higher were the costs charged by private building companies, engineering firms and consultants. In some places, corrupt local state officials took advantage of the modernisation and construction wave in the first years after reunification (see Boecker 2004, Halbach 1992, Runge 1994: 348).

Figure 1: Decrease of water demand in East Germany

	1991	2004	1991-2004
	in 1000 m ³		in Percent
Brandenburg	188,2	108,6	-42,3
Mecklenburg-Western Pomerania	142,3	83,6	-41,3
Saxony	331,7	190,4	-42,6
Saxony-Anhalt	221,7	108,3	-51,2
Thuringia	185,4	97,2	-47,6
East Germany¹	1069,3	588,1	-45,0
Germany	5747,9	4733,3	-17,7
¹ without East-Berlin			

Source: Statistisches Bundesamt 1995, 2006.

The investments undertaken in the 1990s and the following reduction of water consumption resulted in a high indebtedness of the water and wastewater utilities of Brandenburg. It is estimated that the debt of the public special purpose organisations for water and wastewater, which represent only some Brandenburg utilities and mainly address rural areas, amounts to approximately one billion Euro (Boecker 2004). Not surprisingly, fees especially for wastewater disposal are high. Rising fees for wastewater disposal and increasing prices for drinking water supply in East Germany are especially dramatic, if one considers the fact that private house owners in what was the German Democratic Republic (GDR) had to pay only 0.20 Euro per cubic metre of drinking water or wastewater disposal. Tenants of public houses, the majority of the population, did not have to pay at all for water supply and wastewater disposal (Runge 1994: 346). In consequence, consumers protest against high fees for supply and disposal (see figure 2).

Figure 2: Poster of the private house owner association "Haus und Grund"



„Fees for municipal services are rising...but there are fewer Saxons...water prices, fees for wastewater disposal, taxes, prices for electricity etc...those who stay have to pay more and more!“

Source: Haus und Grund Sachsen e.V.

The massive decline in demand leads to technical, economic, health, environmental and institutional problems: Increasing residence time of drinking water in supply networks enhances the risk of bacterial contamination. Waste water canals are affected by problems of unpleasant smell, plugging and corrosion (Koziol 2004). In order to maintain technology and health standards, additional measures like chlorination of drinking water, flushing of pipes or reduction of cross-sections of pipes become necessary. These measures mean extra costs for the water companies. Thus, while the returns of the latter are diminishing due to the decreasing demand, the fixed costs are increasing. Investments for the adaptation of over-dimensioned infrastructures have to be borne by a decreasing number of customers (Schiller and Siedentop 2005). Rising prices and fees for drinking water supply and wastewater disposal could lead to negative spirals: less customers demand less water, which causes a rise in fixed costs, higher prices and leads to a reduced demand of the remaining customers etc.

Companies and municipalities often do not have the financial or personal capacities to deal with the problems which are caused by shrinking processes. The traditional logic of “build and supply” of continuously expanding infrastructure systems is still persistent and technological or organisational innovations are predominately developed by companies in growing regions and not by companies suffering from decreasing demand and rising fixed costs. Furthermore, in contrast to

housing enterprises, water companies until recently did not receive any support under the urban renewal programme, through which the country as a whole and the federal states try to cope with the shrinking process. Even worse, the large-scale destruction of buildings in shrinking cities, which is subsidized by this programme, additionally confronts water companies with the parallel necessity to deconstruct their networks, too, or in the case that the abandoned residential areas were not situated at the end of a service area but in-between places that still need to be served, to raise the expenditure for the maintenance of networks (Bernt and Naumann 2006).

Technical, economic and institutional problems cannot be seen separated from each other, but must be understood as a complex network of problems. The rising costs of the utilities and the still high demand for a further modernization and adaptation of water and wastewater facilities, which cannot simply be met within the status quo, pave the way for a further commercialization or privatisation of infrastructure provision. Privatisation and commercialisation are considered to be the last remaining options for the problems of shrinking cities like Frankfurt on Oder in Brandenburg] (Wissen and Naumann 2006).

To sum it up, the shrinking of cities and regions has major consequences for networked infrastructure systems. The latter were initially designed to satisfy the demands of a growing population under conditions of economic growth. Now they have to cope with exactly the opposite conditions, which paves the way for major transformations like the privatisation of utilities.

4. LEARNING FROM SHRINKING REGIONS?

The infrastructural transformations and conflicts analysed above have to be seen in the context of the specific constellations of problems which mark the situation in East Germany after reunification, especially with regard to shrinking processes. However, some general conclusions can also be drawn. This is due to the fact that shrinking is a major tendency not only in East Germany but also in other parts of the world. While many cities in the third and even in the first world are still growing, old industrial centres and rural regions in the USA, Europe or Russia have suffered from economic decline and significant population losses (Oswalt [ed.] 2004). Thus, one can say that shrinking is not a general but an increasingly important mode of spatial development within the fragmented geographies of post-Fordism. It takes on three forms (Hannemann 2003): Firstly, it means de-industrialisation. Old industries decline without being replaced by modern services, i.e. the economic base of a city or a region erodes. Secondly, there is a population decline, resulting from outward migration, and a birth rate which is lower than the mortality rate. Thirdly, shrinking is characterised by suburbanisation, leading to a socio-spatial differentiation between declining core cities and former residential areas, on the one hand, and growing or at least stable suburbs, on the other. Furthermore, shrinking processes are closely connected with vacancy and the deterioration of existing buildings (Bürkner et al. 2005: 12).

Shrinking processes not only cause complex problems for infrastructure supply, but could also provide a window of opportunity for innovative directions in water management. These should include flexibility and cooperation. Under the conditions of demographic change it becomes necessary to develop flexible solutions which entail the possibility for short-term adaptations instead of constructing buildings for decades. Due to the differentiation of problems there have to be combinations of centralised and de-centralised technological as well as organisational solutions. Shrinking processes are not only local problems but require regional cooperation of different municipalities and utilities in order to create synergy effects and develop regional regeneration strategies. There is the need for close interaction between urban planning and utilities to enable efficient infrastructure solutions. Furthermore, actors of civil society, such as consumer organisations, environmental groups etc, could participate in the planning process to develop feasible solutions and take advantage of different local expertise. Flexible solutions based on cooperation between different actors could enable new ways of water service provision. These new directions could implement – even in shrinking regions - sustainable ways of water supply and wastewater disposal including protection of water resources, socially acceptable prices and stable companies.

The introduction of innovative solutions in water management is not only a question of infrastructure managers in shrinking regions but also a general decision about the character of the German water market. Whether the so-called modernisation of German water supply and wastewater disposal means commercialisation and privatisation of utilities or if water services could be developed to an innovative instrument for regional and social cohesion remains an open question.

ACKNOWLEDGEMENTS

The findings are the result of the research conducted in the framework of the spatial analysis part of the project "netWORKS. Socio-Ecological Regulation of Network-Related Infrastructure Systems", funded by the German Federal Ministry for Education and Research. Besides Frankfurt (Oder) we investigated the spatial dimensions of infrastructural transformation in Munich and Hannover (see Naumann and Wissen 2006).

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