# The dynamics of voluntary benchmarking in the water sector

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This article investigates the dynamics of benchmarking in municipal water utilities. The findings illustrate how a voluntary project developed the characteristics of compulsory benchmarking. While the first adopters of benchmarking sought efficiency gains, later adoptions have mainly been driven by institutional pressures. This limits the potential of benchmarking for improving utility performance.

# Benchmarking in local government

Even though the use of benchmarking in the public sector is increasing (Johnsen, 2005; van Helden and Tillema, 2005), as well as in the water sector (European Benchmarking Cooperation, 2011), academic interest has to date been relatively minimal. Research has mainly focused on the effects of compulsory benchmarking used by central governments to compare performances of municipalities or government agencies. The accounting literature has shown that compulsory benchmarking can lead to similar dysfunctional effects as identified in connection with performance measurement schemes in general (e.g. Smith, 1995), such as using benchmarking to defend current performance (Bowerman and Ball, 2000) or performing at the average level rather than improving performance (Llewellyn and Northcott, 2005; Tillema, 2010). In contrast, studies on benchmarking in water utilities have uncritically illustrated how its use increases organizational efficiency, regardless of the system's original purpose (e.g. Cunha Marques and de Witte, 2010). As a result of this concentration on outcomes, very little is still known about the evolution of voluntary benchmarking projects (Bowerman et al., 2002). Studying such dynamics is important as it should increase understanding of the potential and limitations of benchmarking between the conflicting demands of public transparency and the confidentiality of information required to develop processes.

The purpose of our study was to address this gap in the literature by examining the evolution of benchmarking in the Finnish water sector, where participation in the process benchmarking scheme has always been voluntary and the results are not utilized by higher authorities for regulation, simulation of competition, or allocation of resources. We will pay particular attention to how different purposes of benchmarking have alternated over time (Bowerman et al., 2002). Our analysis of the Finnish water sector's voluntary benchmarking scheme was based on a dataset consisting of documentary evidence and interviews collected between 2004 and 2011 when the second author was involved in policy developments concerning the need for economic regulation in the water sector. We argue that by analysing experiences over a period of almost two decades, it is possible to provide lessons applicable in other contexts, although it must be kept in mind that the natural monopoly nature of water services sets them apart from the majority of other public services.

This paper is structured in the following manner. The next section presents the research design and methods employed in our data collection and analysis. This section is followed by a contextual description of the Finnish water sector, including relevant standards and how they are currently

enforced. We then turn to the analysis of the empirical material, tracing the evolution of benchmarking in the water sector from the mid-1990s until the present.

## Research design

The research material gathered during this field study consists mainly of in-depth interviews and various types of documents. We draw on two sets of interviews, which were collected at different times (Table 1). The first round of interviews took place in the spring of 2007 and targeted professionals across the Finnish water sector; during the latter round of interviews in 2011, we focused on interviewing representatives at five different water utilities deemed most active in terms of practicing social and environmental performance measurement and benchmarking. In both rounds, interviews were conducted with representatives from the Finnish Water and Waste Water Works Association (FIWA), which coordinates the water utilities' benchmarking activities. The use of two sets of interviews conducted at different times provided a longitudinal perspective on the developments and assisted in illustrating how the benchmarking scheme has developed.

In addition to the interviews, a wealth of documentary material was also gathered for this study, including acts of parliament, government bills, white papers, discussion papers, consultancy reports, water utilities' annual reports, and the benchmarking reports published by the FIWA. Furthermore, we searched all issues of three topically relevant professional journals from this period for articles related to water utilities' and municipalities' benchmarking and performance measurement in a more general sense. Likewise, we studied the programme leaflets of the annual fair for water professionals to see whether these issues were discussed in any of the sessions held during the fair. Both the interview transcriptions and all the published material are in Finnish, so the quotations provided in this paper have been translated by the authors.

In addition to the empirical material gathered for this study, this research also benefited from the second author's involvement with the water sector and its main legislative authority, the Ministry of Agriculture and Forestry, first as a PhD student studying the effects of New Public Management in the water sector and then as an expert advisor for the Ministry's task group considering the need for economic regulation in the water sector. While her involvement does not fulfil the criteria of interventionist research (Jönsson and Lukka, 2007), it provided this project with a deep understanding of the water sector's regulatory developments and the role of benchmarking therein.

# Water utility benchmarking in Finland

In Finland, the majority of water services are produced by 400 municipally owned utilities, while the rest are small, user-owned cooperatives and associations. Currently, no water services utilities in Finland have been privatized by divesting the infrastructure to a private company, but there are a few instances of large-scale private sector participation in service delivery. The municipal utilities are organized in various forms, such as companies, enterprises, and departments, which are subject to several regulations set by multiple authorities (key regulations are presented in Table 2). All water utilities, regardless of their organizational form, are affected by the acts and decrees related to the protection of human health and the environment as well as those concerning pricing and cost

<sup>&</sup>lt;sup>1</sup> We interviewed 27 professionals in total. The interviews, each lasting between 30 minutes and one and a half hours, were recorded and subsequently transcribed verbatim.

recovery. Drinking water quality and wastewater treatment standards are monitored by the utilities themselves, and they are subject to regular inspections by municipal health and environmental authorities. The Water Services Act (119/2001) states that customer charges should be reasonable and equitable, and, in the long run, cover all the water utility's costs, including a reasonable rate of return on the owner's capital investment. Despite this stipulation, prices for water services in Finland are not subject to inspection by a regulatory authority as they are, for instance, in places such as England and Wales.

#### **TABLE 2 ABOUT HERE**

The development and collection of water utility benchmarking indicators in Finland was initiated in 1995 by Helsinki Water, the largest utility in the country, which invited some 20 other utilities to join. Approximately 10 utilities were actively involved in the project until 2006, when FIWA became the organizer of the system and enabled nationwide data collection. After a successful pilot phase, a web-based system was made available for all FIWA member utilities for the cost of a fixed enrolment fee and an annual usage fee. Currently, 46 utilities subscribe to the benchmarking system, accounting for 41 per cent of the FIWA membership and a little over 50 per cent of the population served by water utilities. The member utilities elect an indicator development group annually that consists of five to seven representatives to increase or decrease the number of indicators and to oversee the publication of information to stakeholders. In 2012, the information entered by the water utilities was used to calculate the values of 70 different indicators divided into five dimensions (Table 3). Thus, essentially, FIWA's benchmarking scheme is an indicator-based metric system, which in principle is useful for recognizing issues that could be improved upon (see Cunha Marques and de Witte, 2010).

### **TABLE 3 ABOUT HERE**

From the perspective of this paper, a particularly interesting aspect of the water sector benchmarking scheme is that despite having always been voluntary, it has developed characteristics of compulsory systems, such as making information available to stakeholders and utilizing this information to ward off economic regulation. Thus, we will now turn to the analysis of our empirical material in order to discuss the reasons for these developments and to identify the different purposes that water utility benchmarking has had over time.

# Types and purposes of water utility benchmarking

Voluntary project to improve performance, 1995-2003

The beginning stages of the Finnish water sector's benchmarking scheme are closely linked with the Nordic water utility benchmarking project in which Helsinki Water collaborated with similarly large utilities from Stockholm, Gothenburg, Malmö, Oslo, and Copenhagen. The initiation of benchmarking by Nordic cities seems to have been prompted by both field-level and institutional factors. First, by the mid-1980s, the majority of currently existing water and wastewater treatment plants and networks in Nordic countries had been constructed, and the sector's focus had shifted from design and construction to operation and maintenance. The utilities then realized that they needed more information on the condition and functioning of the infrastructure systems for

maintenance and rehabilitation (Helland and Adamsson, 1998). Secondly, during the privatisation debate of the early 1990s, the ability of public utilities to operate efficiently was called into question, and the six water utilities initiated the benchmarking project to produce data that would enable the assessment and comparison of their operations. Due to differences in the Nordic countries' institutional environments, Helsinki Water also wanted to compare its performance with other Finnish utilities and established a group with some 20 utilities, 10 of which continued to participate actively in the data collection. In practice, Helsinki Water asked each utility to fill out certain performance information once a year on an Excel spread sheet and then disseminated the compiled information to the participants. The utilities met regularly to discuss the indicators as well as the possible reasons behind the differences in their performance, and the results were kept confidential.

The participants considered benchmarking especially useful for assessing if too few or too many resources were allocated to operations and whether or not better results could be achieved by shifting the emphasis from some operations to others (Katko, 2013). As a concrete example of the efficiency gains brought along by benchmarking, the Managing Director of Utility D mentioned the comparison of the operation and maintenance costs associated with drinking water distribution. As a result, Utility D has been able to reduce costs by decreasing personnel, outsourcing transportation, and shifting the focus of maintenance from reactive to proactive measures. Thus, at this stage, the voluntary benchmarking project bore strong resemblance to corresponding initiatives in the private sector and its purpose may well be claimed to have been performance improvement (see Bowerman et al., 2002).

### Transition period, 2003-2006

Things began to change during the early 2000s when, due to the enforcement of the European Water Framework Directive (EC, 2000), Finnish legislation was revised in order to integrate the stipulations of the Directive. An important new aspect in the subsequent Water Services Act (Government of Finland, 2001) was the requirement that Finnish water utilities should aim for full-cost recovery through customer charges, instead of being subsidized from tax revenue. It was further specified that an appropriate pricing scheme would be full cost plus; that is, the prices could also cover "a reasonable rate of return" on the owner municipality's investment into a utility. Despite this stipulation, which seems to implicitly suggest rate-of-return regulation, no economic regulator was established for the water sector. This decision was likely made because the office of the Competition Authority already existed and was believed by the legislators to possess the power to enforce the rate-of-return stipulation based on competition legislation. However, certain court precedents then proved these beliefs ungrounded, as explained by the interviewee from the Competition Authority:

[w]hen the Water Services Act was being drafted, the rate of return paragraph was written pretty much like our [Competition Authority's] representative suggested. We thought that the Water Services Act would be perfectly in line with the Competition Restrictions Act. Then the Market Court gave rulings that raised the bar for our interventions. Now we are not allowed to make decisions based on the Water Services Act. (Representative from Competition Authority).

The interviewee referred to three consecutive Market Court decisions given in 2002 (Dno 151/690/1999, Dno 173/690/2000, and Dno 117/690/2000), which limited the Competition Authority's mandate to water utility customer charges as such and effectively prevented it from commenting on the rates of return paid to a utility's owner municipality. When this regulatory gap became evident, the Ministry of Agriculture and Forestry as the responsible legislator commissioned studies on the alternatives for economic regulation in the Finnish water sector. At the annual Water Utility Fair in 2005, the results of three such studies were presented with suggestions ranging from a United Kingdom (UK) Ofwat-type price cap regulation to a sunshine regulation based on benchmarking indicators.

As the Ministry of Agriculture and Forestry contemplated these options and the need for further studies, the issue was debated among water sector and local government professionals. The possibility of central government intervention in municipal water utilities' financial affairs through an economic regulator was especially ill received by FIWA and the municipalities' interest organization (Association of Finnish Local and Regional Authorities, AFLRA). The latter was particularly concerned about retaining the traditionally independent position of Finnish municipalities:

It's important that we preserve municipal self-governance. There's no need for a water sector regulator; instead, we need a system based on benchmarking. (AFLRA representative 1).

FIWA soon initiated discussions with the group of ten utilities engaged in benchmarking and suggested that their system be made web-based and nationwide with FIWA as the coordinator. The utilities agreed, and, after a successful pilot phase, the system was made available in 2006 for all FIWA member utilities at the cost of a fixed enrolment fee and an annual usage fee. At the same time, it was decided that the majority of the information would be made public to all stakeholder groups, including the general public.

In a marketing letter aimed at inducing other utilities to participate in the benchmarking scheme, FIWA appealed first and foremost to the benefit of avoiding formal regulation:

Finland is one of the few European countries without a water utility regulator [. . ]. Authorities have often wished for an indicator system maintained by the utilities themselves, which would satisfy the authorities' requirements without a separate system.

The managerial aspects of benchmarking were presented later in the letter, as a kind of secondary benefit:

Benchmarking implies comparing your own activities with the best available practices. It is commonly used in the business world, and oftentimes it is connected to quality systems. The basic idea of benchmarking is learning from others [. . .] Utilities can also use benchmarking to evaluate how their own activities have developed.

In a position paper concerning the future of municipal water services, AFLRA similarly referred to benchmarking as an alternative to economic regulation:

As the owners of water utilities, municipalities must act in a responsible fashion and avoid setting such demands on their utilities as might generate pressures to increase external

official supervision of the water sector. One tool for increasing transparency might be the follow-up of water utilities' comparable financial and profitability indicators. (AFLRA, 2007, p. 6).

Thus, as the system became nationwide, its purpose began to shift from performance improvement to demonstrating transparency and accountability.

One system, two modes of application (2006 onwards)

At the time of the most recent interviews, the benchmarking system had been running for almost five years. The number of participating utilities had first increased to almost 40, after which there had only been a few new members. It was evident that the professionals we interviewed at the utilities were aware of the system's existence; however, there appeared to be only a few individuals who could be identified as having a deeper knowledge of the system. A similar variation could be detected in the professionals' views regarding the feasibility of the benchmarking system. The small group of individuals who had been closely involved in the system since the early days had the most positive attitude towards it:

When you talk about benchmarking and utilities trying to reach a mutual understanding on how each indicator should be calculated, it all begins with making the figures comparable. And then you discuss and try to figure out the reasons for any differences. This is something I hold in a very high regard. I have been involved [in the benchmarking system] in some way for so long . . . That is what I believe in. (Director of Quality, Utility D).

However, the interviewees who had only recently joined the system seemed to harbour a certain degree of scepticism regarding the added value of benchmarking alongside other data collection systems. The environmental and health authorities, for instance, require water utilities to measure and report on drinking water quality and wastewater treatment results on a regular basis. Bearing in mind the small size of most utilities, such reporting requirements can turn out to be excessive, especially as they can stem from various sources:

Well, we have a huge number of things that we have to report to different places and in slightly different forms . . . and it is quite a burden for us. (Chief Financial Officer, Utility E).

The FIWA representatives' speculations concerning the reasons for the low utilization rate seemed to resonate strongly with the utility professionals' responses:

[S]ome authorities collect information, and utilities see that as a compulsory exercise. . . . Perhaps their attitude towards the information collected by FIWA or the indicator system as such is like, 'well, we provide the information since FIWA is asking for it, but it's no use to ourselves.' So the insight that it's not us [FIWA] who needs the information but we just want to package it so the utilities can make use of it, use the system, and see how they are doing, for instance, in comparison to a same-sized neighbouring utility, that insight is missing, and our marketing has not succeeded. (FIWA Representative 1).

Some of the founders of benchmarking were also critical of certain individual indicators, such as the recently added dimension of energy with only one indicator, a utility's carbon footprint. The addition of the indicator appears to be driven mainly by fad-following (Abrahamson, 1991):

Until now, [environmental issues] have been considered from the perspective of sewerage and wastewater treatment, but more and more attention is being paid to the environmental effects stemming from and associated with water services as a whole [i.e. including the purification of drinking water]. If we talk about the carbon footprint or energy issues or others, they are just starting to emerge, and, for instance, in our benchmarking project, these have only begun to emerge during the past year. (FIWA Representative).

Energy issues in general and carbon emissions in particular are currently at the heart of public environmental debates. Therefore, it makes sense to include such an indicator in the benchmarking scheme. However, representing energy consumption as a separate dimension with only a single indicator may overemphasize energy issues at the expense of public health benefits and environmental protection, which are the main societal benefits of functioning water services.

The way I see it, there are five subparts [in social and environmental responsibility], and the least important of them is this internal carbon dioxide and energy balance. (Business Manager, Utility B).

Despite the limited significance of internal carbon emissions, FIWA recently decided to include the carbon footprint as one of the five indicators featured in a new brochure entitled "Indispensable Water." The brochure is a popularized version of the previous benchmarking reports and has been published in an attempt to improve the general public's and political decision-makers' awareness of the water sector. The inclusion of such a topical but simultaneously apparently insignificant indicator seems instead to emphasise the appearance of actual performance gains (see Tillema, 2010).

Therefore, during the most recent period, the system has remained voluntary, but FIWA has introduced more features associated with compulsory benchmarking, such as including trendy indicators and publishing reports aimed at the general public and politicians. It is no wonder, then, that the utilities are somewhat divided in their views regarding the purpose of the system. While first adopters still perceive benchmarking primarily as a way to improve performance, later adopters tend to associate it with bureaucracy and compliance.

#### **Discussion and conclusions**

In this paper, we have examined the evolution of benchmarking in the Finnish water sector, where over a period of nearly two decades, participation in the benchmarking scheme has been voluntary and the results have not been utilized by higher authorities for regulation, simulation of competition, or allocation of resources. By investigating how the purposes of benchmarking have alternated over time, we have sought to increase understanding of both the potential and the limitations of benchmarking between the conflicting demands of public transparency and the confidentiality of information required to develop processes. In the remainder of this section, we will discuss our findings in light of previous research.

Tillema (2010) divided the uses of benchmarking into three categories. The first is associated with improving performance with no disclosure to stakeholders. The second involves creating institutional pressure with disclosure to experts only, and the third relates to creating economic pressure in situations where citizens are able to select their service providers and information is disclosed to all stakeholders. The benchmarking system used in the Finnish water sector originally emerged as a voluntary scheme with an emphasis on the actual performance; no disclosures were made to external stakeholders, making it similar to the benchmarking systems Tillema (2010) described as managerial tools. Subsequently, a scheme was developed in response to the institutional pressures stemming from external agencies; however, in these later stages, the scheme no longer fits any of the benchmarking situations described by Tillema (2010). Information is disclosed to all stakeholders, even though municipal residents are bound to a single service provider due to the natural monopoly position of water utilities. Furthermore, instead of having an external agency or auditing body drive compulsory benchmarking, the Finnish water sector's benchmarking system is promoted by an agent inside the field, the water utilities' interest organization. The system represents a hybrid in the sense that it remains voluntary but has also incorporated some defensive and dysfunctional elements, which are typically encountered in compulsory settings (see Bowerman et al., 2002; Tillema, 2010).

The hybridization of benchmarking has also been mentioned by Bowerman and colleagues (2002) in their analysis of the evolution of benchmarking in UK local government. They observed that voluntary benchmarking pre-dated the compulsory system and continued to exist alongside it. The developments in the Finnish water sector are different in the sense that there has always been only one system, which has acquired new characteristics over the years. The major turning point in this development was the perceived regulatory gap, which gave rise to discussions concerning the need for external monitoring of the water sector, and, more indirectly, monitoring of the municipalities' manner of controlling the utilities. As municipal self-governance was perceived to be under the threat of higher-level interference, political interests began to drive the expansion of benchmarking. In slightly exaggerated terms, it could be argued that FIWA, along with the support of AFLRA, in effect captured the benchmarking system in order to further its own anti-regulatory agenda. The major mistake FIWA seems to have made in this context was to have highlighted this particular motivation when marketing the system to the utilities outside the original benchmarking group. This action has created a situation where many professionals perceive the benchmarking system to be yet another manifestation of governmental supervision and control. Although FIWA has subsequently attempted to highlight the managerial benefits of benchmarking through indicator training events, these efforts have proven rather unsuccessful. FIWA may have been able to attract and sustain the genuine interest of utilities in performance improvement with a less defensive initial approach, even though it has been suggested that a public sector benchmarking system would not necessarily serve multiple purposes simultaneously (see Bowerman et al., 2002).

Whereas Bowerman and colleagues (2002) expressed concerns about the limited understanding of the real nature of public sector benchmarking, Cunha Marques and de Witte (2010) have been more optimistic as they highlighted the usefulness of benchmarking for improving the performance of public sector entities, including water utilities. Our findings provided a more mixed picture by suggesting that the possible benefits may not appear uniformly across the organizations involved. The core group of professionals who have been involved in shaping the system and subsequently have acted as internal champions at their utilities see the benefits of the system and promote its

value also for developing processes. In contrast, many other professionals see the system as a supplementary add-on or yet another diagnostic management accounting tool. This may be another reason for the limited membership—smaller utilities do not consider it rational to join a system that does not offer added value alongside existing data collection systems. Furthermore, in terms of usability, it also needs to be noted that even if two water utilities were the same size, their processes and results cannot often be readily compared due to the impact contextual factors like urban formations, soil type, and surrounding watersheds have on the processes (see Northcott and Llewelyn, 2005). The limited interest shown by the majority of water utilities also alludes to the possibility that designing a generically applicable and functioning benchmarking system for a very diverse group of actors might not be a feasible task.

Overall, based on the experiences learned from the evolution of the benchmarking scheme, it remains somewhat unclear whether the expansion of the system has delivered tangible benefits to the Finnish water utilities. In terms of external control, there is still no economic regulator in the sector, even though discussions on the topic are on-going. It is still uncertain, however, whether the voluntary benchmarking system has had any effect on this issue, despite the fact that this was the primary reason for the expansion of the system. Simultaneously, the benchmarking system is perceived as somewhat taxing, and it therefore consumes the limited resources of both the public utilities themselves and of their own association, which seeks to improve the societal status of the water sector. In light of these findings, we maintain that voluntary benchmarking systems do not necessarily lead to positive outcomes. Such contradictory experiences could provide insights for initiatives that seek to enhance water utilities' transparency and performance through benchmarking systems (see Cunha Marques and De Witte, 2010). We hence concur with Tillema (2010, p. 75), who noted, "it is a real challenge to design a benchmarking exercise that enhances the functional effects of benchmarking while limiting any tendency towards dysfunctional and defensive behaviour." The longitudinal perspective on the Finnish water sector's benchmarking system we have provided here also highlights the relevance of understanding how contextual factors in general and possible changes in the socio-political and institutional factors overtime affect the role, nature, and functioning of such schemes (see Siverbo and Johansson, 2006; Johansson and Siverbo, 2009).

One practical solution to the perceived challenges could be to centralise the collection of water utilities' performance information to one entity, which would establish a database accessible to all authorities who require such information. This centralised process would reduce the time that the utilities spend replying to various queries but would not by itself guarantee increased usage of the collected information for developing operations. Apparently, training sessions that focus on benchmarking alone are not considered attractive, so perhaps the topic could be addressed as part of a more generic executive education directed at water utility professionals.

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