Voluntary water utility benchmarking for collective learning: lessons from Europe

Carlos E. Diaz Villanueva

CDConsultancy Economics & Water,
Herenmarkt 93A, 1013 EC,
Amsterdam, The Netherlands
Email: cdiaz@cdconsultancy.nl

Maarten W. Blokland*

Blokland Advisory Services,
Oosteinde 17, 2611 VA,
Delft, The Netherlands
Email: mwblokland@gmail.com
*Corresponding author

Abstract: The paper compares two European voluntary water utility benchmarking initiatives, one of which is characterised by low costs and the confidentiality of results, and the other one by moderate costs, publication of the results and proven efficiency improvements. Both systems have been successful in achieving their primary objective of providing a learning platform for the participating utilities. The application of voluntary water utility benchmarking in middle and low income countries is considered feasible yet the design needs to be adapted to the local context and challenges. Such design would among others need to consider the objectives of benchmarking, the specific challenges in water supply, the availability and reliability of data, the auditing requirements and the cost of the exercise. The introduction of benchmarking in regions where data and information sharing is rather uncommon may be encouraged by parallel performance improvement activities including capital and capacity investments.

Keywords: voluntary benchmarking; performance indicators; performance assessment; performance improvement plan; water supply; utilities; developing countries.

Reference to this paper should be made as follows: Diaz Villanueva, C.E. and Blokland, M.W. (xxxx) 'Voluntary water utility benchmarking for collective learning: lessons from Europe', *Int. J. Water*, Vol. X, No. Y, pp.xxx–xxx.

Biographical notes: Carlos E. Diaz Villanueva is the owner of CDConsultancy Economics & Water in Amsterdam. He is a senior water and sanitation utilities specialist with the World Bank's Water and Sanitation Program based in Peru. Prior to that, he worked for Vewin, the Association of Dutch Drinking Water Companies, where he acted as the coordinator of European Benchmarking Cooperation platform.

Maarten W. Blokland is a Senior Advisor in Water Services Management, owner of Blokland Advisory Services and Partner at the Water Partner Foundation. He retired from UNESCO-IHE, where he was an Associate Professor Water Services Management. Prior to that, he worked with IWACO Consultants and with the Water and Sewerage Board in Swaziland.

1 Benchmarking

Benchmarking is a strategic tool that allows an organisation to improve its performance by studying the behaviour of other, similar organisations, and by subsequently adapting and implementing (parts of) this behaviour to fit its own situation. The tool includes two distinct elements, performance assessment and performance improvement.

All the definitions of benchmarking emphasise that in order to achieve enhanced levels of performance, one must be ready to learn from others. Boxwell (1994) defines benchmarking as "setting goals by using objective, external standards and learning from others – learning how much and, perhaps more important, learning how". Harrington (1996) states that benchmarking is a "systematic way to identify, understand, and evolve superior products, services, designs, equipment, processes and practices to improve an organisation's real performance" and describes the approach as a "never-ending discovery and learning experience".

Benchmarking originated in the manufacturing industry in the 1970s as a strategic tool to stay ahead of competitors. After some time, benchmarking also entered the public domain where it is increasingly being used by regulators, national and local governments and public enterprises as a means to enhance both the transparency and the performance of public services. The water and sanitation sector is very much a local natural monopoly with no direct possibilities for competition, unlike other network industries. This is caused primarily by the huge costs of transporting water over large distances and the impossibility to use the network for other purposes.

The attempts in the early 1990s to privatise the sector (asset sales) and to promote private sector participation have not resulted in the anticipated large-scale reform of the industry. Today, the large majority of the water industry is in the public domain. This particular characteristic of being a local natural monopoly in combination with public pressure demanding for improved performance of public sector agencies actually provides a window of opportunity for water utilities to engage in benchmarking. Hence water utilities have been involved in benchmarking since the 1990s and water utility benchmarking is now a common, worldwide activity. The International Water Association (IWA) has played a key role in promoting benchmarking by producing separate manuals for water utilities (Alegre et al., 2006) and for wastewater utilities (Matos et al., 2003). The manuals propose performance indicators (PIs), provide a rationale for performance assessment and promote the adoption of a system of PIs. IWA publications stress the importance of arriving at a system of PIs but warn against PIs becoming a goal in themselves. The PI system (set of perspectives or focus areas) must be determined by each utility, based upon its own management strategy and objectives. After determining objectives, required activities and critical success factors, the appropriate PIs can be identified. The IWA also stresses the need for integral performance assessment including as main perspectives: financial, customer, processes

and learning. The IWA task group on benchmarking defines benchmarking as "a tool for performance improvement through systematic search and adaptation of leading practices" (Cabrera et al., 2011).

Water utility benchmarking initiatives have been carried out in a number of countries. In the journal 'Water 21' (June 2008) some of these initiatives were reviewed, with reports on activities in Brazil, The Netherlands, Tanzania, Hungary, Moldova and China. The issue also reported initiatives on regional and global scales, such as the North European Benchmarking Cooperation (NEBC) supported by national water associations in the region, EurEau for the member states of the European Union, and the IB-Net global database, supported by the World Bank. At a water utility benchmarking congress in Amsterdam in 2014, papers reported experiences in Austria, Canada, Denmark, Germany, Hungary, Portugal, South Korea and Switzerland. There are also numerous other regional and national programs, like the South East Asian Water Utility Network and the Water Utility Benchmarking System of the Pacific Water and Waste Association (PWWA) supported by the Asian Development Bank, the Water Utility Partnership for Africa supported by the World Bank and the benchmarking exercise of ADERASA, the Association of Latin American Regulators of Water and Sanitation Services. National programs exist in North America, most Latin American and European countries, and several Asian and African countries such as Indonesia, Egypt and Kenya.

The experience with water utility benchmarking in developing economies is recent and more limited and it is still a challenge to promote the concept and to initiate and develop benchmarking systems that are feasible and relevant considering the specific context in which utilities in developing countries have to operate. Exercises to directly apply conventional benchmarking schemes from industrialised economies to developing countries are likely to fail for many reasons including differences in the availability and reliability of data, inadequate capacity to draw lessons and implement related changes, different organisational objectives and cultures, a different customer base and demands, different cost structures and revenue potential, and last but not least, resource constraints that hinder the implementation of performance improvement measures. These differences may be such that the application of conventional benchmarking schemes proves entirely impracticable or that certain key PIs are less relevant or need to be defined or interpreted differently. One example of the latter is the indicator for labour productivity expressed as number of full time equivalent staff per 1,000 connections. In developed economies the relatively high labour costs and the availability of highly skilled staff in combination with the easy access to and the relatively low costs of advanced technology are providing a steady and continuous drive to automate and computerise utility operations resulting in a perpetual reduction of this indicator to values around 1.0 or below. In developing economies the context is entirely different; here lower labour cost and skills combined with less access to and higher costs of advanced technology plus a (political) need to provide employment opportunities give an entirely different set of drivers that may result in values for the labour productivity indicator that are appreciably higher than the values achieved in developed economies. This implies that the business processes that achieved the higher levels of productivity in developed country utilities may not be or may not all be so relevant for adoption in developing economy utilities. Another example is that of services provision to the poor which is not much of an issue for utilities in developed economies but a major challenge for utilities in developing countries. Here, conventional benchmarking schemes do not have much to offer to utilities in developing countries.

Having recognised the extreme contextual differences between utilities in industrialised and developing countries, this does not mean that water utility benchmarking in emerging economies could not borrow from relevant experiences in developed economies. These experiences relate to the design of successful benchmarking schemes more than to the selection or interpretation of PIs. The challenge for this paper is to analyse the experiences in setting up and implementing regional and national water utility benchmarking in developed economies and to see which lessons from these experiences have relevance for the emerging benchmarking systems in developing countries.

In the European context, two benchmarking exercises are recognised as successful: the regional European Benchmarking Cooperation (EBC) and the Dutch national benchmarking program. The EBC is a unique, multiple country self-financed benchmarking scheme for European water utilities. The Dutch national program is one of the oldest benchmarking schemes in Europe and studies have shown that since the introduction of the Dutch benchmarking scheme, the performance of the utilities has increased steadily. Both initiatives are examples of voluntary benchmarking initiated by the utilities or their associations.

This paper will describe both benchmarking schemes thereby paying attention to their characteristics and design, and will attempt to distil some learning points for the design of benchmarking exercises in a developing country context.

2 European benchmarking cooperation

The EBC is a non-for-profit self-financed program of the national water associations of Denmark (DANVA), Finland (FIWA), Norway (NORSK VANN), and The Netherlands (Vewin); and the utilities of Helsinki (Helsingin Vesi), Copenhagen (Københavns Energi) and Oslo (Oslo Kommune VAV). The purpose of the cooperation is to support continuous performance improvement of its members and their water and/or wastewater service providers by carrying out an annual benchmarking exercise that serves as a learning platform for the exchange of leading practices and information.

The EBC was established in 2004 as the NEBC. The NEBC was founded on the work of the Scandinavian Six Cities Group, a cooperation of the major Scandinavian cities that started PI-based comparisons of water and wastewater services in 1995 and Dutch efforts in benchmarking drinking water activities by service providers that were initiated in 1997. Both the Scandinavian and Dutch benchmarking efforts were preceded by a long period of cooperation and knowledge exchange between utilities that was often promoted by the national water utility associations.

Both initiatives must be viewed in the context of the European debate on privatisation of public utilities that had started in early 90s, and that emphasised the lack of systematic collection of information and the absence of the evaluation of the performance of the – mostly public – transportation, telecom, energy and water utilities. The efficiency of the public water and wastewater service providers were questioned during this privatisation debate, and although the managers were convinced about the good performance of their water utilities, this could not be substantiated by facts nor was there evidence of the continuous improvement of business processes and performance (Helland and Adamsson, 1998).

Both the six-cities group and the Dutch embarked on the development of their voluntary benchmarking systems almost in the mid-1990s and by 2004 the idea of a Dutch-Scandinavian benchmarking cooperation emerged. The drivers for the cooperation were that in both cases the number of participating companies was limited (ten in The Netherlands and six in the Scandinavian group) and that after a decade of benchmarking, the performance differences (and consequently the learning opportunities) were getting smaller. Both groups felt a need for new peers as a way to widen their search for leading practices and innovation and shared the view that this could be best achieved through a complimentary international benchmarking program.

The Scandinavian countries and The Netherlands are similar in institutional, cultural, economic and social terms and their territories are characterised by abundant water resources for drinking water production. They are among the wealthiest nations in the world and only very few customers have problems with the payment of what is a relatively low drinking water bill. Even then, there are significant differences such as the primary source for drinking water used, the topography and the population density. These aspects proved to be a challenge in the performance comparisons.

Although the Scandinavians came forward with the idea, the Dutch Association of water supply companies (Vewin) took a leading role in the development of the NEBC. Vewin is a comparatively large organisation and was therefore, unlike the other national associations, in a position to host and coordinate the NEBC program. The staff availability and the commitment of Vewin enabled the first benchmarking pilot in 2005. The pilot focused on financial performance and was based on the Dutch model for benchmarking revenue and expenditures at the business process level. The pilot included all ten Dutch companies and two Scandinavian utilities. After the initial pilot the need for a more comprehensive international benchmarking model was established. This model was to include drinking water and wastewater activities and needed to focus on costs but also on other performance areas (perspectives).

By 2004 the Dutch national benchmarking program that was initiated in 1997 had achieved a high level of sophistication but also a Dutch ‘flavour’. It had been refined, improved and tailored to the specific context of Dutch drinking water utilities in a learning-by-doing process that well suited the participants. In fact, the internal administrative and reporting systems of the Dutch utilities had been uniformly re-modelled to align with the information requirements of the benchmarking exercise. When this cost model was applied in the first NEBC pilot it appeared to be overly sophisticated and based on definitions of business processes that were not immediately understood by the Scandinavian utilities. At the same time, the non-alignment of the internal reporting systems of the Scandinavian partners presented quite a challenge. To avoid a perceived ‘Dutch’ capture of the benchmarking system and having realised the need of a less sophisticated set of definitions, NEBC selected a sub-set of the PIs for water supply and wastewater services that was proposed by the IWA (Alegre et al., 2006; Matos et al., 2003) for its second pilot. The pilot that was conducted in 2007 offered three participation levels (basic, standard, advanced) corresponding to different levels of data requirements. In this format the highly disaggregated presentation and analysis of costs at business process level as practised by the Dutch operators was included only at the advanced level. The revised setup eased the participation of utilities with a lesser amount of reliable data and a more limited benchmarking experience.

Participation in the second pilot was broadened. Apart from the Scandinavian and Dutch participants, this time utilities from Belgium, Germany, the UK, and Hungary participated. The second pilot produced a company-specific reports for each of the participating utilities. In addition an international benchmarking workshop was organised that provided a platform for mutual learning. Finally, a program evaluation was carried out to review the program and to identify how it could be improved further.

After these two first pilots, regular yearly benchmarking exercises have been organised by the NEBC, the first one in 2008. From 2009, the cooperation continued as EBC honouring its Europe-wide scope. In 2010, 41 utilities from 21 countries participated in the benchmarking exercise; in 2011, 45 utilities from 19 countries, and in 2012 the EBC had a participation record of 50 utilities with 14 new participants, six of them from Italy. Although the program was designed for European participants, also utilities from Israel, Peru, Argentina, Brazil, Singapore and the USA have participated. They participate in the EBC as a similar program is not available in their own region or out of interest to compare and exchange with European peers. Although the number of participating companies in the EBC is steadily growing, every year there are also several utilities that step out. Whereas most of the utilities want to participate each time, there are others that only participate incidentally to obtain reference values. Others opt out because they had expected perfect and detailed international performance comparisons and got disappointed when they learned that the applied methods and formats do not allow for this.

The primary goal of the EBC is that the participating service providers initiate performance improvements in their utility by identifying and learning from leading practices from within the group. This goal is achieved by creating a learning environment where the results of the benchmarking exercise are shared between participants on a confidential basis and where experiences on business processes and practices are presented and discussed. Confidentiality is a very important characteristic of the EBC and participating service providers all subscribe to a code of conduct whereby they commit to use the benchmarking results only for the purpose of learning. This implies that the benchmarking results are not made public in any way, not even in an anonymised fashion.

Although confidentiality does not seem a good practice per se, in reality this is what sustains EBC's goal to promote and focus on inter-utility learning. In other European benchmarking schemes are driven by regulation, and regulatory agencies. The public accountability of these organisations results in a focus on data quality through costly control and auditing practices. By comparison, the EBC is a self-financed program with a low participation fee where the utility data is not audited. If the EBC program were to publish its findings, these and the underlying data would require auditing. That would drive up the cost of the program and consequently the participation fee, which would discourage participation and thus undermine EBC's goal of broad participation. In addition, when publishing results it is more likely that the participating utility managers would shift their focus to achieving higher rankings and away from learning about leading practices. A focus on ranking may lead to strategic behaviour to obtain better indicator values rather than to learning from others and adjusting ones own business processes and practices. In order to focus on learning, the EBC program does not publish its results and resists the pressures from internal and external actors that want more 'transparency'.

European service providers are generally operating in an unconstrained environment characterised by managerial autonomy and adequate resource availability. Most of the providers enjoy a considerable degree of strategic, financial and operational autonomy and are able to establish and operate their assets in a business like manner much like private companies do. Also, they are generally well resourced in terms of well maintained physical assets, surplus revenue, up-to-date technology, capable organisations, skilled staff, and easy access to products and services including among others new products, advisory services, capital markets, etc. This implies that senior managers of European service providers have little or no excuse for poor utility performance or inaction. They are expected to be pro-active, and their customers and overseeing bodies demand the utilities to perform well in terms of water quality and quantity, water price, quality and reliability of service. In this context, information exchange and learning among participating utilities is of great value in assisting management decisions by individual providers. Information exchange and learning covers such diverse areas as technologies, automation and computerisation, project management, process innovations, methods, skills and practices, quality of products and services by third parties. The confidential environment where operational data are available to be shared and discussed by pro-active managers provides the right conditions for exchange and learning. The following section will review some of the distinguishing features of the EBC.

3 Distinguishing features of the EBC

3.1 Self-financing and voluntary participation

The EBC is a voluntary and self-sustaining program implying that only companies that see a potential benefit in their participation will engage and that it does not depend on external funding that could influence its agenda or activities. The EBC participation fee is below €10,000 per member annually, an amount that is affordable to any European service provider. Moreover, a discounted fee of less than €2,000 Euros is offered to small utilities (serving less than 100.000 inhabitants) that want to participate at the basic level. More significant than the participation fee is the equivalent cost of the time that a company has to dedicate for collecting and submitting the required information, for assisting the information validation process, and for attending the international workshops, etc. This intrinsic cost is relatively high and therefore only relatively well-resourced, self-motivated utilities that see the potential benefits have actually joined.

3.2 Self-governed, aligned with utility interests and non-competitive

The EBC is governed by a steering committee with representatives of the national water associations of Denmark, Finland, Norway and The Netherlands. A program committee with representation by all partners (the national associations plus representatives of the three individual utilities of the six-cities group) is responsible for organising and further developing the benchmarking activities. On behalf of the EBC partners, Vewin is hosting the program and acts as the project coordinator. The staff of the EBC equals about two full time equivalents, with some support of ICT consultants with the data collection process.

The EBC is an initiative that was commenced, developed and facilitated from within the sector and that responds only to the interests of the participating drinking water supply and sanitation utilities. The EBC does not have the intention to serve as a self-regulatory instrument, nor to increase transparency, trigger competition, replicate competitive environments, etc. It is there only to serve as a learning platform for its participants in a non-competitive setting. Also, the EBC does not compete with national benchmarking initiatives; rather, it partners with them.

3.3 Mutually beneficial, independent and self-directed

Not only the utilities, but also their national associations (often the facilitators of national benchmarking exercises) use the EBC as a platform for exchanging their benchmarking experiences.

The program is designed and directed by the participating utilities. The choice of perspectives, indicators, data collection and veracity is entirely in the hands of the participating utilities themselves. The program conducts several rounds of data validation, notifying utility coordinators responsible for data submission of possible mistakes, but the final responsibility for data reliability is with the reporting companies themselves.

3.4 Perspectives and indicators

The present EBC system covers five perspectives: water quality, service reliability, service quality, sustainability and finance and efficiency. The number of input variables and output indicators varies with the participation level. At the basic level 101 inputs variables deliver 36 PIs whilst at the advanced level 316 inputs variables deliver 273 PIs.

Table 1 Number of variables and indicators for various levels of utility participation in EBC

Level of utility participation	*Drinking water services*				*Wastewater services*				*Total*	
	Variables (input)		*PIs (output)*		*Variables (input)*		*PIs (output)*		*Variables (input)*	*PIs output*
	Extra	*Total*	*Extra*	*Total*	*Extra*	*Total*	*Extra*	*Total*		
Basic	-	53	-	16	-	48	-	20	101	36
Standard	57	110	63	79	64	112	76	96	222	175
Advanced	67	177	63	142	27	139	35	131	316	273

Source: Project Plan IB 2011 benchmarking exercise (http://www.waterbenchmark.org)

3.5 Performance assessment and improvement

The EBC annual benchmarking exercise is organised around a set of well-defined activities that closely reflect the recommendations of the IWA task group on benchmarking (Cabrera et al., 2011). Following project planning at the start of the year, utilities are invited to participate in an orientation and training workshop that is targeting especially the newcomers. The performance assessment part of the program start with a virtual kick-off, data acquisition and validation runs for approximately two to three months, and a dedicated help-desk is available for the guidance of the participating

utilities. After the data have been validated, a draft version of the comparative set of indicators is circulated. This draft is the main input for the international benchmarking workshop that focuses on the performance improvement part of the program.

The performance improvement workshop is the core activity of the EBC that provides an opportunity for networking, for the exchange of practices, and for defining the steps to improve the EBC program. The follow-up by participating utilities such as the pursuit of new professional contacts, the improvement of business processes and the implementation of enhanced practices is the exclusive responsibility of the utilities. The EBC coordinator facilitates the post-workshop exchange of contacts and information, and documents the bilateral activity between EBC participants. EBC (2011) also encourages utilities to prepare and implement performance improvement plans but it does not follow-up on this.

It is quite a challenge to determine the impact of the EBC program on utility performance. Over time, the group of participating utilities has changed both in number and profile, so a time series analysis is not feasible. In addition, the program only started in 2008 so it would be early to evaluate the effectiveness. This is not a hindrance to the continuity of the program as the self-financed and rather inexpensive program minimises external pressures to show impact.

4 Benchmarking water supply in The Netherlands

In The Netherlands water and wastewater services are provided by different organisations. Drinking water is abstracted, treated and distributed by ten water supply companies that are incorporated as private companies with exclusive shareholdership by local and provincial governments. Wastewater is collected by the 406 municipalities and wastewater transport, treatment and disposal are carried out by 24 water boards that are public entities with responsibilities in water management (2013 figures).

Voluntary information exchange in the Dutch water sector was first undertaken by a group of water supply companies in the late 1980s. It started as a confidential, inter-company exercise with the results shared only between the directors of participating companies (Braadbaart et al., 1999). A few years later the national debate on the privatisation of public services boosted the emergence of a national water utility benchmarking scheme. The scheme was developed by Vewin with the support of an international consulting firm and the first results were made public in 1997. Although the benchmarking was conducted on a voluntary basis all ten water supply companies participated. Vewin, the association of the Dutch drinking water supply companies plays a central role in carrying out the benchmarking exercise, although the actual work is contracted out to a consultancy firm. The voluntary benchmarking exercise was conducted every three years and the outcomes were twofold: one was a document for public use that is downloadable from the Vewin website (http://www.vewin.nl); the other was a confidential, tailor-made report for each participating company that provided more detailed information and showed the comparative position of the concerned company relative to the others for all PIs. Voluntary benchmarking continued up to 2010 when legislation was enacted that made benchmarking compulsory for the drinking water utilities and assigned the responsibility for this to the Ministry of Spatial Planning and Environment (VROM), now the Ministry of Infrastructure and Environment (I&M).

The voluntary benchmarking served two objectives. It provided greater transparency to interested parties, and provided the water companies with insights on how to improve their processes (Vewin, 2007). The interested parties were central government, customers, supervisory directors and shareholders, and the drinking water companies themselves. The processes to be benchmarked followed from a preceding selection by the water supply companies of four perspectives, namely water quality, service quality, environmental impact and finance and efficiency. Water quality performance is assessed in three ways: as perceived by the customers, through an index that expresses compliance with legislated standards, and by determining a score that combines non-compliance and the associated health risk. Service quality is measured through a customer survey in which they are requested to mark general service quality, satisfaction with specific services, and the quality of different types of company-customer contacts. Environmental performance is gauged by assessing environmental impacts, both negative (energy consumption, desiccation and treatment residues) and positive (management of nature areas). Financial performance is assessed at company and process levels. At the company level, this includes the unit price charged to various customers and the composition of costs, distinguishing between taxes, costs of capital, depreciation and operational costs. To make water companies' operational costs comparable on a more detailed level, they are allocated to five processes – water production, water distribution, process support, sales and general.

The outcome of the five (full) voluntary benchmarking exercises conducted in 1997 (Vewin, 1999), 2000 (Vewin, 2001), 2003 (Vewin, 2004), 2006 (Vewin, 2007) and 2009 (Vewin, 2010) shows that water quality continues to improve, that service quality is at a high level, that environmental performance is improving, and that prices and costs decrease when adjusted for inflation (Schmitz and Dane, 2008). The comparison between companies shows significant differences in performance that cannot be explained by contextual factors such as customer density and nature of the water source. Even then, benchmarking is thought to have had a considerable positive impact on the sector, both in terms of increased transparency and economic performance, even more so after the companies decided to publicise the results of benchmarking (Braadbaart, 2007).

The voluntary benchmarking exercise in The Netherlands was analysed in an effort to sum up its lessons (Blokland et al., 2010). The paper investigated the opinions of the various stakeholders on the voluntary benchmarking and found these to differ substantially beyond the common agreement that benchmarking is a useful tool that needs to be retained. The central government, the companies themselves and their association Vewin were convinced of the benefits and had a high level of confidence in the voluntary scheme. By comparison the consumers, the shareholders and the staff were more critical and felt that they had not been fully involved or enjoyed the same level of benefits. The academics did not evaluate the system as such but found significant efficiency improvements in all companies over the period of voluntary benchmarking. The paper noted that there is a high level of trust between the Dutch water companies and the consumers and that the companies are careful not to alienate their consumers. The non-executive company directors and the shareholders play a crucial role in maintaining this trust and must be seen to be translating benchmarking results into company strategy and operations that benefit both company and customers. In view of their statutory task to safeguard company interests, the paper questions if directors and shareholders are able to fully justify consumer interest. The paper argues that the consumer's role could be strengthened, e.g., by obliging the non-executive directors to account for their actions to

the consumers, or by way of a reinforcing the mandates of the in-company consumer councils or by establishing duly empowered national consumer bodies. The paper also found that the voluntary benchmarking system appeared to follow Cabrera's (2008) diminishing marginal value in view of the remarks by directors of the water companies that after 20 years the exercise in its current format was nearing its limits. One way to address this could be to add foreign companies in the benchmark. Also, the methodology of excluding exogenous factors was being contested (Dijkgraaf and Varkevisser, 2007; De Witte, 2007). In addition, it was noted that the perspectives of environmental sustainability and learning and innovation could be developed further to underpin the longer-term sustainability of the Dutch drinking water sector.

The new Drinking Water Act converted the voluntary benchmark for the drinking water sector into a mandatory one. Two reasons made the policy makers decide for a mandatory system (Van Geel, 2009). Firstly, the government wanted to ensure that all companies would participate. The second reason for the government to make the benchmark mandatory was to be able to influence on the choice of performance areas and to improve the accuracy and reliability of the data and the quality of comparison. Rules on reporting and accessibility of information were desired for better transparency. Specifically, the law poses that the mandatory benchmark is instrumental to increase the transparency of the sector to clients and other stakeholders, and as a means of calibration of utility managers of their own functioning and effectiveness. The new law did not specify how the mandatory benchmark is to be executed, like the frequency or the indicators, but it does specify who is responsible for the benchmark, which is the Ministry of Infrastructure and Environment (I&M). The ministry has the possibility to delegate the execution of the benchmark to another party, like the Vewin. The new law suggests that specific rules for the execution of the benchmarking scheme are to be collected in a protocol, which is to be approved by the Minister. A key feature of the new law is that all drinking water companies are required to prepare action plans within six months after publication of the benchmarking data on how to improve their performance. The new act also allowed the minister to redesign the benchmark thus providing an opportunity to include new perspectives and/or indicators.

The results of the first mandatory benchmark that was carried out in 2012 have been published (Vewin, 2013). The protocol for the first mandatory benchmark was developed by the Inspectorate of the Living Environment and Transport (ILT) of the new Ministry of Infrastructure and Environment (I&M). The preparation of the protocol was preceded by an expert study into the voluntary benchmark. This study concluded that the benchmark was generally well conceptualised and of good quality. Apart from recommending some minor adjustments the study also advised that the subject of water operator efficiency needed to be much enhanced. The protocol was developed in consultation with the policy advisors of the ministry to ensure compliance with the law and the associated regulation and with the water supply companies to ensure the feasibility of implementing the protocol. The Netherlands Competition Authority (NMA) had an important advisory role in the focal area of finance and efficiency. The development of the protocol is seen as a continuous and gradual process where the format will gradually evolve to be an effective and complimentary instrument in the array that government has at its disposal to support its objectives in water supply development and management.

5 Discussion

Between the two cases presented above there are important similarities and differences. The similarities shared between the EBC and The Netherlands benchmarking exercises are as follows.

5.1 Learning and continuity

Both the EBC and Netherlands programs focus on collective learning and a regular recurrence of the benchmarking exercise. The learning focus was explicitly set by the initiating national water supply associations and the companies that they represent. The leadership from within ensured that the programs focused on tangible, practical outputs. Both programs conduct regular benchmarking exercises, provide detailed reports on operational data to their participants and organise knowledge exchange workshops as a way to emphasise information exchange and learning on utility operations through the study of leading practices and innovations.

5.2 Adaptability and flexibility

Both systems have developed overtime and have adjusted themselves to the demands and limitations of their participants. Both systems have also evolved in terms of their data collection albeit in a different way. In the EBC a member utility can choose to join the benchmarking exercise at three different levels thus allowing choice. The Dutch system operates at a single level, yet this system has overtime evolved in response to the demands of the participating utilities.

5.3 Mature, stable and non-competitive environments

Both benchmarking systems have in common that they operate in mature and stable environments. These environments include the national political, institutional and socio-economic contexts, the water management sector, the water utilities and their associations, and the high quality of the water services and the sustainability of water supply operations. The challenges of universal coverage and adequate water quantity and quality had already been addressed in the 1960s and 1970s allowing focus on customer satisfaction, finance and efficiency, source protection and environmental impact and protection. Another common characteristic is that both programs operate in a non-competitive water utility environment so that there are no commercial hindrances to information exchange between participating utilities. However, there are also marked differences between the EBC and the Dutch benchmarking exercises as described in 5.4.

5.4 Transparency versus confidentiality

Whilst the EBC is a confidential system aligned to its single objective of enabling learning by participating utilities, the Dutch system continues to pursue the same whilst being transparent to its stakeholders as well. Where the EBC is focused only on the facilitation of learning among their participants and keeps the operational data confidential, the Dutch program has the specific objective to increase transparency and does so by providing the benchmarking reports to the public. The recent transition from

voluntary benchmarking led by the utilities to mandatory benchmarking led by the Dutch Government marks a drive to even greater transparency and independency of the instrument.

5.5 Comparability of the data and benchmarking costs

The Dutch benchmarking scheme is much more rigorous than the EBC in terms of data validation and uniformity. Although in both programs the utility is uniquely responsible for the veracity of the information, the Dutch system has made use of a management consultant that assists the water companies with collecting and reporting the information in a comprehensive and uniform way. In addition, the internal reporting mechanisms of the Dutch drinking water companies have overtime been aligned to the requirements of its national benchmarking program. The Dutch efforts on data comparability and homogeneity are not being mimicked by the EBC for reasons of the implied extra cost and the difficulty to introduce uniform reporting across countries with different accounting systems and reporting requirements. The lesser rigidity and uniformity of the EBC raises questions about the comparability of the data but with its main focus on learning of leading practices (information exchange) rather than on indicator comparison, the data quality issue is not perceived as a problem.

6 The case for utility driven voluntary benchmarking in developing countries

In the European practice the water utility associations and their members were initiating benchmarking and driving it forward for their own purposes including the need to respond to an ever more empowered, vocal and demanding stakeholder community. The utilities took the lead in benchmarking and by doing so and doing it well ensured that similar initiatives by others were considered superfluous and wasteful. In developing countries benchmarking initiatives have been few and the initiative was more often by regulators or financiers that aimed on the performance assessment and ranking of utilities rather than on performance improvement through mutual learning. Consequently, most developing country utilities have not well understood the learning potential of benchmarking and tend to perceive it as yet another external obligation that they would prefer to shy away from, in part because they fear to be exposed. Even then, water utility leaders in developing countries have started to recognise the importance of benchmarking as a management tool for performance improvement as evidenced by national initiatives such as the Kenyan one mentioned earlier. The characteristics and the experiences of the EBC and Dutch cases could therefore be useful in an initial attempt to draft an outline for a locally relevant and feasible benchmarking system.

When considering the establishment of a benchmarking program in a developing country one cannot copy the European practices reviewed here, for a number of reasons. First, there is no uniform European practice to be copied, as demonstrated by the differences between the EBC and Dutch cases. Second, the objectives and challenges of water and waste water development and management in developing countries are quite different, meaning that there will most likely be a different set of perspectives and PIs. Third, the enabling and organisational environments are very different. Where European

utilities are well established, stable, autonomous, financially independent and sustainable, many developing country utilities face formidable uphill battles in some or quite often all of these areas. Even then, the design of a voluntary benchmarking system for and by utilities in developing countries may be guided by the European experience. This experience can be summed up in terms of success factors and key choices.

The success factors or conditionalities include the willingness among a group of (national) utilities to share their experiences and learn, a joint decision by a large enough group of utilities to engage in a regular multi-year benchmarking exercise, a preparedness to develop an inclusive system that recognises and balances the demands and limitations of the participating utilities and finally, a commitment in staff time and financial resources for establishing and operating the benchmarking system. The key choices are concerned with the choice for transparency or confidentiality, with the focal areas for benchmarking, the desired level of detail and the required quality and auditing of the data, and finally, with the amount of time and resources that the group of utilities is prepared to spare.

A group of interested utilities must weigh the pros and cons and the implications of these choices and make its own decision for a benchmarking program. Such considerations may well lead to a transparent, very elaborate, externally audited and relatively expensive system (the Dutch case) or, more likely, to a confidential, low-cost benchmarking activity that focuses on a limited number of PIs that are indicative of the primary challenges faced by the operators (the EBC case). It is also quite conceivable that with the passing of time, the growing experience and the changes in the context, a benchmarking system will evolve from an initial format to another one.

7 Conclusions

The EBC and Dutch benchmarking programs that are characterised by a long period of voluntary participation for collective learning have been quite successful in achieving their main objective of providing a learning platform for participating water utilities. The Dutch case shows consistent performance improvement and efficiency gains over a long period of voluntary benchmarking.

The replication and adaptation of those European programs to emerging economies and developing countries is quite challenging as the operating environment and the challenges are so different. The conceptualisation and design of such a system needs to address a number of specific questions. These concern the objectives and scope of benchmarking; the availability and reliability of data, the desired profundity of the exercise and the auditing requirements; the choice for voluntary or mandatory benchmarking and the related need for an independent coordinating entity; the specific challenges in water supply and the related focal areas selected for benchmarking; the local technical and socio-cultural characteristics that may impact on the effectiveness of the program. Finally, the cost of the program is an important consideration.

From the European experience a number of important lessons can be learned that may assist the development of a successful national or regional benchmarking system in emerging economies. Creating clarity about the objectives is a key first step in setting up a benchmarking system. The core objective of inter-company learning and performance improvement may or may not be accompanied by the objective to create transparency and

accountability to stakeholders. This choice has important consequences for system design and costs.

Secondly it is important to create ownership by utilities. Create a platform for the exchange of information and leading practices, conduct regular benchmarking exercises (programs) and produce tangible outputs that assist utility managers in carrying out the strategic and operational tasks of the utility. Consult with the management of the participating utilities so that the system is aligned with their objectives (choice of perspectives) and thus ensure their buy-in and continued commitment to the benchmark. Emphasise learning and de-emphasise undue focus on performance values to avoid strategic behaviour.

Also an inclusive and flexible system should be created. Create a benchmarking system that allows the participation of the entire target group of water utilities. Consider the use of different participation levels to accommodate the differences in data availability and reporting capacity among the utilities. Also, consider 'organic' growth of a benchmarking system that initially addresses primary challenges facing the participants at a relatively superficial level only and gradually develops a capacity to collect and analyse more data and to include other and new challenges.

Then we should learn from relevant experience elsewhere. It is advisable to study the benchmarking schemes that other utilities are operating, starting in the same region or in comparable regions elsewhere, with the aim to understand benchmarking challenges, costs and benefits and to select the appropriate perspectives (areas), the corresponding indicators and data collection frameworks. This learning opportunity should be utilised as it its costs are easily offset by substantial savings that it can help realise in the design of the benchmarking system.

Finally it is important to agree on definitions and to align internal data collection. The participants need to agree the precise definition of the PIs and the constituent variables, as well as the data collection, processing and reporting systems. Ideally, like in the Dutch case, the internal reporting systems of the participating utilities should be aligned with the requirements of the benchmarking scheme. As it promotes comparability, the initial steps of agreeing definitions and alignment of internal reporting systems is in itself already a huge step towards realising the learning objective of benchmarking. This activity should preferably be led by an independent coordinator to avoid the capture of the benchmarking system by dominant players and with that the frustration of others. In such case, the benchmarking is off to a false start. The role of the independent coordinator could be expanded to include not only the development but also the operation of the benchmarking exercise.

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