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Public Water in Private Hands: A Case Study on the Safeguarding of Public Values in the First DBFMO in the Dutch Water Sector.

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In DBFMO projects, public procurers transfer to private consortia the responsibility for designing, building, financing, maintaining, and operating public assets. Although DBFMOs are criticized for their possible threat to the safeguarding of public values, the Dutch government recently procured Europe's biggest waste water purification plant according to DBFMO principles. This article poses two questions: to what extent are transparency, responsibility, and quality safeguarded in the waste water case and what factors are influential in this. The findings provide grounds for modest optimism. Tools such as output specifications, the long-term contract, performance monitoring, and the adequate way in which cooperation between the procurer and consortium has been managed have provided considerable opportunities for the safeguarding of all three values.

Keywords: public-private partnerships, public values, transparency, responsibility, quality.

1. Introduction

Design—Build—Finance—Maintenance—Operate projects (DBFMO), are a specific type of Long-term Infrastructure Contract in which the responsibility and risks in the design, construction, maintenance, operation, and finance of public infrastructure and public service delivery are transferred from the public procurer to a private consortium through an integrated long-term performance contract, often lasting 15—30 years (e.g. Bult-Spiering & Dewulf, 2006; Hodge, Greve, & Boardman, 2010). This contract includes output specifications that merely describe what standards should be met rather than indicating how the consortium should meet these standards (Reynaers, 2014). The consortium is responsible for performance monitoring which is linked to a financial mechanism that determines the height of the availability fee that the procurer owes the consortium for its delivered services.

The contract, output specifications, monitoring mechanism, and performance-related pay ideally allow the procurer to control and influence the process and outcome. DBFMO

projects consist of a preparation phase during which the public procurer defines the output specifications and aspects of the financial and technical contract; a realization phase during which the consortium constructs the public asset; and an operational phase during which the consortium provides the public services (Reynaers, 2014). Given their contractual character and the relatively low level of true cooperation between procurers and consortia, some scholars dismiss DBFMOs as public—private partnerships (PPPs) (Klijn & van Twist, 2007; Lonsdale, 2007; Edelenbos & Teisman, 2008), whereas others certainly consider them as a member of the diverse PPPs family (Hodge, Greve, & Boardman, 2010).

DBFMOs embody the idea of 'business-like government' since they facilitate cooperation with private companies and incorporate private sector management tools such as performance contracts and performance monitoring. In the context of the water sector, van Buuren, Klijn, and Edelenbos (2012) suggest there has indeed been an increase of private sector involvement over the last decades. Whereas it is often suggested that a business-like government might provide changes in terms, for example, of efficiency (Osborne & Gaebler, 1992; Osborne & Plastrik, 1998), others suggest that this may come at the cost of other values such as transparency, responsibility and quality (Collins & Butler, 2003; Frederickson, 1999; Milward & Provan, 2000; Wittmer, 2000). Tortajada (2010) raises a similar concern in terms of good governance in the water sector.

Despite these concerns, the Dutch government gave the green light for procuring a waste water project in the Delfland region according to DBFMO principles and even stimulated the implementation of the DBFMO within the water sector[1]. However, an empirical assessment of whether DBFMO procurement endangers or safeguards public values in the water sector remains a moot point. The aim of this paper is therefore first of all to provide empirical insight on the safeguarding of transparency, responsibility and quality in the waste water project and secondly, to discover what conditions are influential in this process. Although there is only one DBFMO partnership in the Dutch water sector, the model is used in many different sectors and in many different countries and this makes it worthwhile selecting this type of partnership for external validity.

The rest of this article is structured as follows. The following section reviews current scientific knowledge on private sector involvement in the waste water sector and explains why the public values perspective is valuable in the context of DBFMO. The method section explains the qualitative research approach. The findings section provides a background summary of the waste water case and discusses each value separately.

2. Private sector involvement in the water sector

For several decades, the private sector has been involved in many national and international water projects (Bel & Warner, 2008; Zhong, Mol, & Fu, 2008). Bakker (2003) observes the restructuring of water sector management after a period of privatization leading

[1] Kamerstuk: 29ste vergadering: Vaste commissie voor volkshuisvesting en ruimtelijke ordening. Woensdag 5 april 1990. UCV 29.

to new governance types such as joint ventures, and alliance partnerships (Zhong, Mol, & Fu, 2008). The introduction of these governance forms has been evaluated in terms of efficiency and risk distribution (Zhong, Mol, & Fu, 2008); knowledge co-production, project and network management (Biswas & Tortajada, 2010; Edelenbos, van Buuren, & van Schie, 2011); and democratic accountability and legitimacy (van Buuren, Klijn, & Edelenbos, 2012). Although some of the terms studied, such as accountability and efficiency, are considered to be public values (Beck Jørgensen & Bozeman, 2002), they are not studied within the framework of public values literature, nor within the specific DBFMO context. The following section takes a closer look at the public values literature.

Many scholars have raised their concerns about the safeguarding of public values in the context of businesslike government, and the basic assumption underlying these studies is that the possible increase in efficiency will come at the cost of public values (Terry, 1998). What is striking during a review of these studies is the ambiguity in the public values concept as an analytical tool (Beck Jørgensen & Bozeman, 2002). For example, the concept is used to refer to, (1) public goals such as the reliability of public transport (Steenhuisen, 2009), (2) process-related rules such transparency (Weihe, 2008) and, (3) moral values such as honesty (van der Wal & Huberts, 2008). The adjective 'public' forms a second source of confusion in its implication that a normative or empirical distinction between public and private values can be made. It has been demonstrated, however, that a dichotomous distinction between sectors and related values does not exist empirically (e.g. Bozeman, 1987; Rainey & Bozeman, 2000). Given this inconsistency in the use of the public values concept, the next section clarifies how the concept is used in this particular study.

In theory, one could study hundreds of values that are considered public values (van der Wal & Huberts, 2008). Due to limitation of space, their prominence in public values literature (Beck Jørgensen & Bozeman, 2007) and their importance for the specific DBFMO structure prompts this study to consider the values of transparency, responsibility and quality.

Transparency refers in this study to internal transparency (that is, transparency between procurer and consortia and not to the wider public), and is defined as the availability, inferability, and accuracy of information to public procurers about service level expectations and financial project parameters (e.g. Michener & Bersch, 2013; Reynaers & Grimmelikhuijsen, 2015). Various scholars warn about a loss of transparency because of the complexity of project information (Grimsey & Lewis, 2002; Hood, Fraser, & McGarvey, 2006), or argue that the information generated is often misleading, inaccurate or inadequate (Altshuler & Luberoff, 2003; Hodge, 2004). Others, however, understand the introduction of private-sector techniques as increasing transparency (Hirsch & Osborne, 2000).

Responsibility is defined as the degree to which the consortium complies with the contractual agreements and the output specifications. This definition is based on that of Harper (1996, p. 596) who defines responsibility as "[c]onformance to a rule of behavior." Hood and McGarvey (2002) discuss the possibility of a blame game between the public and private sector partners in PPPs and Child, Faulkner, and Tallman (2005) suggest that responsibility might be a given that private partners not only serve the procurer but also

their shareholders. Brown, Potoski, and Van Slyke (2010) demonstrate that contract compliance isn't guaranteed *per se* and that it depends to a large extent on the completeness or quality of the contract (e.g. Domberger & Jensen, 1997).

Quality is defined as the degree of satisfaction of the procurer in relation to the asset and its actual operation by the consortium. This is based on Zeithalm's definition (1988, p. 3) that defines quality as "[a] judgment about a product's overall excellence or superiority." It is suggested that while striving for financial optimization private firms will provide low levels of service quality: the quality-shading hypothesis (Evatt Research Centre, 1990; Box, 1999). However, several empirical studies on quality in privatization provide evidence indicating that quality has actually increased (Fumagalli, Garrone, & Grilli, 2007; Domberger, Hall, & Li, 1995). Galiani, Gertler, and Schargrodsky (2005, p. 113), for example, demonstrate that privatized water firms provided better service quality than did their "previous public incarnations". Hodge and Greve (2007), however, argue that there is very limited evidence on quality in PPPs.

Transparency, responsibility and quality can be considered important in terms of good governance. No matter how public service delivery is organized, administrations are still obliged (1) to have and understand information about the projects they undertake (transparency), (2) to respond to legislative requirement that, in this case, determines that waste water should be cleaned (responsibility, and (3) to carry out this task taking into account certain quality standards (quality). In DBMO projects, procurers depend partially on consortia for the safeguarding of such values and it remains to be seen what consequence this delegation has in terms of public values safeguarding.

3. Methods

In order to study the question of what happens to public values in the waste water case and what conditions influence that, this study adopts an inductive case study approach and aims at "recognizing patterns of relationships among constructs […] and their underlying logical arguments" (Eisenhardt & Graebner, 2007, p. 25). The first part of the central research question refers to the question of whether transparency, responsibility and quality are at stake or are safeguarded in the context of DBFMO. The second part of the research question provides insight into the underlying logic of the patterns that emerge with respect to the safeguarding of the selected values.

Data collection consisted of the conducting of twelve semi-structured interviews with public servants (N=4), consortium members (N=5) and external advisors (N=3), all of whom work or have worked for the waste water project. Following the non-probabilistic snowball approach, interviewees recruited or recommend other relevant interviewees (Guest, Bunce, & Johnson, 2006, p. 62). The reason for following this strategy is that it was initially difficult to find out who had been involved in the partnership projects. The selection of new respondents stopped as soon as data saturation was achieved, that is, as soon as the interviews would no longer provide new data for the development of conceptual categories (Francis et al., 2010, p. 1230).

The aim of the interviews was to uncover respondents' experience with public values, and interviewees were invited to further explain and illustrate their general statements. Given the absence of an objective scale that prevents empirical measurement of the 'amount' or 'level' of public value present, interview respondents were asked about their personal experience with public values throughout the different project phases (preparation, realization and operation). Some respondents also had experience with traditional procurement. As such, their experience sometimes reflects a comparison between traditional procurement and procurement according to DBFMO.

The interview data was analyzed following a method of coding which refers to the systematic labeling of text fragments (e.g. Boeije, 2005). Prior to the analysis a coding framework including the codes 'transparency', 'responsibility', 'quality' and 'conditions' was constructed. After the analysis, sub-codes that emerged from the data itself were added. For example, the sub-codes 'sufficient transparency' and 'lack of transparency', amongst others, were added to the main code 'transparency'. As such, data-driven and theory-driven codes were combined (Fereday & Muir-Cochrane, 2008).

4. Findings

4.1. Case introduction

The Netherlands is divided into 25 water boards. Each water board consists of a general and an executive board, directed by a dike warden who is appointed every six years by the government. Under Dutch water board law, water boards have responsibility for cleaning waste water before discharging it into open water, and European rules dictate the standards for pollution, nitrogen, and phosphate removal. Around 1995, the water board of the Delfland district faced European sanctions for not meeting these standards in facing a complex task: Not only did they have to make sure that European norms were implemented correctly, they also needed to increase their capacity given the expansion of the already densely populated district. Time was running out, money was scarce and knowledge of how to construct a new and larger water purification system was not to hand. Besides, the estimated costs of about 650 million euro were considered far too high. In the search for more affordable alternatives, the possibility of procurement through DBFMO was discussed and explored between 1998 and 2000. Several members of the general board as well as the Union of Water Boards, the Province and the National Department of Waterways and Public Works (Rijkswaterstaat, here after RWS), did not support the idea of DBFMO given the apparent complexity of the juridical, financial and technical aspects of the contract and the suggested loss of direct control.[2] The State Secretary, however, approved and encouraged the initiative, paving the way by adapting the legislation. Despite its initial resistance, the general board eventually approved the plans on October 2000. On

[2] Jet van Paassen. Delfland en het AHR-project (Afvalwater Haagse Regio): Eerste PPS-constructie in waterschapsland.

December 4, 2003 the water board and a Dutch-French consortium signed a contract that will last until 2033. The waste water project is the very first DBFMO in the Dutch water sector as well as the largest purification installation in Europe.

The scope of the contract includes the renovation of an old purification installation and the construction of a second and far larger one at a different location. The consortium is also responsible for the maintenance of the asset and the actual execution and management of the water purification process. Public servants who worked at the renovated water purification plant now work for the consortium and as a result lose their status as public servants. The water board remains responsible for the public task of purifying water and owns the asset from day one. In order to manage the contract, the water board formed a contract management team that takes care of the daily supervision of the contract. From March 2007, both water purifications installations were in use.

4.2. Transparency

During the preparation phase, the procurer develops the contract including the output specifications. The fact that decisions made during this phase have an impact throughout the rest of the contract period stimulates the procurer to prepare the project much more thoroughly as compared with traditionally produced projects. As a respondent explained: "With this contract, ninety-five percent is organized before you start. You do not see that in traditional projects because we do not tend to think about maintenance." Moreover, the long-term character of the project seems to increase transparency in that the expectations of the procurer are understood over a long period of time. As another respondent put it: "I have been a public servant all my life and I can tell you we are not to be trusted! No matter what we agree upon, we eventually want to change it. That is not good. With DBFMO, at last there is stability; a government commits itself over a long period of time. These contracts bring stability, transparency."

The replacement of input specifications by output specifications decreases transparency in terms of input while at the same time increasing it in terms of output. One respondent illustrated the point: "When you use output specifications it is not transparent just how the consortium is going to avoid smells coming from the water tanks, but at the same time it is transparent in the sense that they know what norm they have to meet." In that respect, the fact that output norms are unambiguous and quantitative national and European norms facilitates output transparency since it is clear what output is expected. A respondent made the point: "We have used many quantitative norms and I think they are straightforward enough for the consortium to understand what we want."

The introduction of performance monitoring facilitates transparency in the construction and operation phases. During the construction phase, the consortium is obliged to monitor, register, and report on the project's progress to the procurer. This obligation provides new transparency, given that performance monitoring wasn't used at the former purification plant. As a respondent put it: "Everything becomes clear: if you see what reports we have to make. Normally we don't have that requirement." A similar pattern is visible in

the operation phase during which the consortium uses a certified quality system that registers and monitors performance in terms of, amongst other things, the amount of purified water produced. Apart from the consortium's monitoring activities, the procurer conducts incidental tests and external audits. The combination of various monitoring activities facilitates transparency during the operation phase. As an interviewee put it: "Monitoring works well. We know much more about this project than we did about our own installation. For example, we never registered adequately the amount of dirt removed from the water and now it appears that we used mistaken figures as the basis of the financial reward for dirt removal. The consortium is happy with that because they do nothing and yet meet the standard. That perhaps shows how we used to work here."

Although monitoring activities and reports provide information about performance, the accuracy of these reports is not guaranteed *per se* and reports can always be manipulated. Although the risk of manipulation always exists, the various monitoring activities conducted by both partners help to reduce that risk. A respondent put it this way: "We send them reports but are they transparent or accurate? You hope so. But you can manipulate everything. You can even manipulate your own bank account. You have to trust each other. That is the essence. If they are not going to trust our reports they can always conduct their own tests and compare our numbers with theirs."

Despite the fact that the consortium and procurer worked together on the creation of the quality monitoring system, this did not directly provide the expected level of transparency. As well as technical flaws in the monitoring system, its suboptimal functioning was ascribed to the way in which it was used by personnel working at the renovated plant. Former public servants did not seem to realize that monitoring was essential in DBFMO. An interviewee explained: "We had to take over the former employees of the renovated plant and they had problems with monitoring and reporting. Suddenly they were expected to control and check where they had never done that before. They had a difficult time with that." These flaws, however, were corrected during the project progress.

Perhaps the fact that many tasks have been delegated to a private consortium has prompted the water board to require more transparency. An interviewee described: "With PPPs the public partner is very skeptical. With traditional projects, they think that because they do it themselves they do not need to have so much control." Although the procurer might have requested more transparency, there seems to have been little supervision carried out by the contract management team. This can be explained by the level of trust existing between the procurer and consortium. As a respondent described: "What was surprising was the small amount of supervision the water board felt it needed to provide. In the beginning there were only two or three people supervising. You would expect them to have had slightly more interest because they had the overriding responsibility to the community to guarantee that everything was ok. But I think that during the preparation phase, the water board had been comfortable with the level of expertise and control that the consortium partners had delivered. I have seen other projects where there is much more supervision." The fact that the procurer and consortium communicated frequently and that both parties proactively sought cooperation with respect to transparency might explain the

small amount of supervision by the procurer. As a respondent described it: "In this project, there was a lot of contact and cooperation between the procurer and the consortium and they controlled the project jointly. I have been involved in several projects but to me, in that respect, this has been the most successful project until now."

Although the contract management team is satisfied with the level of transparency and monitoring, water board employees are often critical. A public contract manager has described skepticism on the part of employees unfamiliar with monitoring processes and suggested to them that they must read the monitoring reports carefully as they contain all the information needed. They have sought to reassure the water board that their monitoring will pick up early warning of problems.

With respect to financial transparency, the long-term planning facilitates transparency for both parties. A respondent argued: "We have a transparent financial system. Everything is written down and when we change the contract, the financial mechanism is adapted too and that is all carefully recorded." However, as is the case with the level of transparency provided during the operational phase, there exists a discrepancy in the levels of satisfaction with financial management between the contract management team and the general water board. Several external auditors were brought in to evaluate the project's financial impact and sustainability. Despite a positive evaluation of the current financial position (in terms of costs, indexing, and tariffs), the auditor concluded that the water board had failed to calculate the long term financial consequences. An interviewee described the situation: "Our system is not used to calculating economic impact over a thirty year period. That should have been done because you need to know the consequences for your tariffs. We made some suggestions but our calculations were not thorough enough. We thought it unnecessary: we didn't think that others did that. In retrospect, this shows our lack of experience, but at the time we were in a hurry and just wanted the best possible solution for the lowest price. What it meant for our overall financial situation was not an issue because we simply had to get the job done."

In terms of the financial justification of the project as a whole, the water board's internal auditor found it difficult to understand the way the project was organized financially. A respondent described the position: "Our financial auditor still has difficulties. His system is just not yet ready for DBFMO. In this example you see that the institutional change that DBFMO requires have not been implemented at all organizational levels." Given the nature of the performance contract, the level of the availability fee may fluctuate so that the monthly bills from the consortium are not equal. A respondent argued in that respect: "The variable costs are most problematic for the auditor. Their financial department finds that difficult. They are used to receiving the same bill every month. But they pay very little attention to exactly what the bills are for."

4.3. Responsibility

Despite startup problems, the consortium was able to deliver the asset in accordance with the output specifications and prior to the official agreed date, for which they received

a bonus. A respondent explained: "At the beginning, we were nervous: Would they take their responsibility seriously? Had we outlined well enough what we wanted them to do? And although the consortium did not seem very proactive at the beginning, their director made sure it always performed well."

The initial non-proactive attitude of the consortium might be due to ambiguity of the contract and output specifications. Although, in general, the consortium and procurer were satisfied with the quality of the output specifications and contract, at times both documents appeared not to provide clear indication of what needed to be done and by whom. A public contract manager described the situation: "Sometimes it was unclear what the contract required: should we interpret it in one particular way or in another? When the consortium tried to make us accept responsibility we said: the contract is clear on this point so we are not going to do what you ask, were you guys sleeping when you signed the contract?"

With respect to the operational phase, startup problems were solved rapidly and the extent of discussion about responsibility between the procurer and the consortium appeared to have been very small. The procurer and consortium painstakingly discussed the distribution of risks and responsibilities during special risk sessions, and that helped to prevent non-compliance. As a respondent argued: "I think this case was a success in avoiding non-compliance because we held risk sessions with the consortium. So we talked about risk and responsibility very carefully. We knew who was responsible for what because we communicated." Besides, the relatively well-defined output specifications seem to have left little interpretative space for discussion to arise. As a respondent argued: "The scope and output specifications are very important. If they are clear, you can hardly expect big problems. And that area was organized well in this project." Another respondent put it simply: "We just have quantitative national norms. Everything is measureable. So that is relatively easy."

Despite the general satisfaction with the way in which the consortium carried out its operating responsibilities the procurer had to confront one significant problem that concerned a bad odor originating from the water tanks. Once the water purification plants were in use, local residents complained of an odor coming from the water purification area. During the design phase, the consortium had taken the decision to cover the water plants with floating roofs that did not fully close off the water plants. Unfortunately, these roofs were not able to stop odors spreading. Since it was impossible to simply measure objectively whether there was a smell, the consortium was obliged to investigate the complaints by hiring a specialist company to determine whether local residents were in fact affected by a smell escaping from the water purification installations. Since the contract stated that the consortium was responsible for managing possible problems relating to odor, the procurer had no intention of getting closely involved with the issue. Although the procurer was no longer responsible for the actual operation, local residents did expect the procurer to step forward and for this reason, the procurer decided to cooperate with the consortium. As a respondent explained: "As the water board we felt partially responsible, though technically it was the consortium's responsibility. So when local residents started

to complain, we worked together to demonstrate that we are a responsible water board with a responsible partner. The consortium did a good job in that respect." Although the consortium was not pleased with the eventual test results that showed there was indeed a problem to solve, they accepted their loss and replaced the roofs.

Discussions about responsibility between the procurer and the consortium were perceived to be rare whereas discussion about responsibility seemed to occur more often *within* the consortium itself. The consortium was contractually and financially divided into two groups: a design and build group and a maintain and operate group. The quality of the work provided by the design and construction companies could have great financial and qualitative implications for the maintenance and operation of the installations that would be the responsibility of the operating company. The financial separation implies that the design and build companies have no financial interest during the maintenance and operating phase nor vice versa. Although this financial demarcation might function well when there are no interface problems, it did not seem ideal in this project. A respondent explained why: "With the pumps, for example, we have had a lot of discussion. The construction company used a type of pump that was more expensive to maintain. In theory, that means an extra investment from the operating company. We solved that problem internally and it did not harm the service level itself but rather our own budget." In relation to the organization of the consortium and allocation of responsibility, the consortium argued that, in retrospect, they should not have chosen to separate design and build and maintenance and operation into two groups. A respondent explained: "In normal projects you do not depend on each other as much. In DBFMO we form one organization. DB and MO is one. At least, that's the theory. We have discovered that it is perhaps better not to separate DB from MO, so that one feels responsible for the other. But in this project we didn't do that. The construction company is not used to taking responsibility for the MO part but, bit by bit, they will get used to that." Hence, in order to have full commitment in terms of responsibility from all consortium partners throughout the project, financial demarcation seems to be better avoided.

The inclusive and cooperative attitude of the contract management team helped the consortium to solve their internal problems in such a way that actual service delivery did not suffer from the discussion between the consortium partners. A respondent explained: "In my opinion, we cooperated well, thanks to the contract managers on the public side. They would say: We see there's a problem and we see that you are searching for a solution so we won't use the fines. They always reminded us what their norms were but did not threaten us with fines and this gave us a bit more time to solve the problems." In addition to the constructive cooperation between the procurer and the consortium, the detailed interface agreement between the construction and operating companies seems to have helped prevent problems with respect to internal responsibility from arising. As a respondent explained: "We had a very detailed interface agreement. We wrote down what the design and build party had to deliver to the maintenance and operating side. That was a very professional document that I do not always see in other projects."

4.4. Quality

With the exception of the floating roofs causing the odor problems at the start of the operational phase, the procurer has been satisfied with the quality of the renovation and construction of the water plants. As a respondent put it: "We have had hardly any questions about the quality of their work and we are very happy with the quality they deliver." The quality of the construction, the design, and the technical solutions offered was suggested as being higher than would have been the case if the procurer itself had been responsible for coordinating the construction. As a respondent argued: "PPPs is a great stimulus for technical optimization. I think that if we had done it ourselves, we would not have been able to deliver what they have. We miss that stimulus, while a commercial party always searches for an optimum."

Again, with the exception of the odor problem, the procurer is satisfied with the quality of the operation, possibly due to the careful preparation of the operational phase. A respondent explained: "We had scarcely any problems with the operation. There may be problems with it in other projects but the operation side is our primary process so we invested a lot in its preparation. The problem with the bad odor was actually the only big problem. When that was solved, we were able to look back on a successful project." The fact that the operating team form the consortium started relatively early on the preparation of the operational phase, seems to explain the high level of perceived quality. As a respondent explained: "What was quite unusual in this project was that the operating team started work about 3 months after the project started while their first deadline would not be for 18 months. I think they realized that the operational stage had to be prepared carefully."

The level of fines imposed by the procurer has been low throughout the project. As a respondent confirmed: "Once in a while a fine is imposed. In general, they are not that high. Sometimes the output is not as expected because of bad luck, for example the bad odor problem, and sometimes there are technical problems. Occasionally the production capacity is too low and sometimes they exceed emission norms." Communication and the apparent good relationship between procurer and consortium might have had a positive effect on the perception of quality. An interviewee made the point: "As far as I can see, and I have not shared this with others, this project has the best relationship between procurer and consortium that I have seen in the last ten years and that determines the overall quality."

The fact that the process of water purification has no direct connection with the users of the water might have positively influenced the procurer's opinion on the quality of the operation. As a respondent explained: "The consortium does what it has to do and there are no public servants or citizens involved in the execution of that process. Many people don't even know that we purify water." Besides, the technical character of the operational phase, in allowing for the use of quantitative output specifications, seems to have provided relatively little room for interpretation of the output expectations. This may have helped the procurer to assume the consortium would provide what was expected. As a respondent put it: "The fact that it concerns a simple product, a simple organizational structure and a

technical process that allows for standardizing output norms has had a great influence on the overall quality."

5. Conclusion

Transparency was defined as the availability, inferability, and accuracy of information to public procurers about the service level expectations, performance, and financial project parameters. The findings show that, during the preparation phase, the integrated and long-term nature of the project has facilitated transparency on service level expectation since a detailed preparation is required prior to the actual start of the construction and operation. The replacement of input specifications by output specifications implies a decrease in transparency with respect to inputs but an increase in terms of the expected output. The fact that many unambiguous quantitative norms have been used to indicate the expected service level has also facilitated transparency. In contrast to the suggested complexity of project information (Grimsey & Lewis, 2002; Hood, Fraser, & McGarvey, 2006), the relatively straightforward norms used in this case make the information provided understandable. The introduction of private sector management techniques in the form of performance monitoring, has facilitated or even increased transparency in comparison to the level of transparency provided at the former water plant, as suggested by Hirsch and Osborne (2000). Monitoring activities provided by the procurer (incidental tests) and the consortium (continuous performance monitoring) facilitate transparency on performance. At the start, however, monitoring was not always carried out correctly and that led to inaccuracies. However, the information provided was not misleading and this goes against earlier findings by Altshuler and Luberoff (2003) and Hodge (2004). Despite the procurer requesting greater transparency in comparison to the original water plant, it carries out relatively little supervision and that might be explained by the high level of trust and communication between the procurer and consortium. The long-term financial planning provided for financial transparency although the impact of the project on the rest of the water board's financial housekeeping was not adequate. This does coincide with earlier findings (Altshuler & Luberoff, 2003; Hodge, 2004).

Responsibility was defined as the degree to which the consortium complies with the contractual agreements and the output specifications. The consortium's small amount of pro-activity in terms of responsibility at the start of the construction phase might be explained by the perceived or actual lack of clear indication in the output specifications. Eventually the consortium provided what was expected during the construction and operational phases. The quality of the output specifications entailing quantitative norms, the various risk sessions held with the consortium, and the close communication between the procurer and consortium seem to have provided the consortium with insight into the procurer's expectations in areas of responsibility. In addition to the importance for compliance of contract completeness and of high quality output specifications (Brown, Potoski, & Van Slyke, 2010; Domberger & Jensen, 1997), the findings also reveal the importance of the less formal coordination that took place through intensive and continuous communication

between the two, procurer and consortium. A blame game with respect to responsibility as suggested by Hood and McGarvey (2002), occurred more often between consortium partners rather than between the procurer and consortium. These conflicts were managed effectively by the consortium's contract manager who tried to overcome problems arising from financial demarcation. Furthermore, the detailed interface agreement between the consortium partners helped to avoid conflicts with respect to responsibility.

Quality was defined as the procurer's degree of satisfaction in relation to the asset and its actual operation by the consortium. With some exceptions, the procurer is satisfied with the overall quality of the asset and with the service delivery provided by the consortium. And with the exception of the odor-problem, this case does not affirm the quality-shading hypothesis (Evatt Research Centre, 1990; Box, 1999). Integral long-term procurement seems to have facilitated technical optimization and thereby quality. The careful preparation of the construction and, especially, the operational phases has guided the consortium in such a way that the expected quality has indeed been delivered. Both the fact that the primary process of the water cleaning plants is isolated from any direct users and the technical character of the operation process seem to positively influence the procurer's perception of quality. Although this case provides some indication that quality might indeed have been increased in comparison to the former plant (Domberger, Hall, & Li, 1995; Fumagalli, Garrone, & Grilli, 2007; Galiani, Gertlerand, & Schargrodsky, 2005), this case does not provide hard evidence for such improvement given that the study has focused on the *perceived* quality.

6. Discussion

The aim of this study was to assess empirically what has happened with transparency, responsibility and quality in the very first DBFMO project in the Dutch water sector. The findings provide indications for modest optimism. Tools such as the output specifications, the long-term contract and performance monitoring, and the adequate way in which cooperation between the procurer and consortium has been managed, have provided considerable opportunities for the safeguarding of all three values. The suggestion of a loss of public values in this type of situation (Terry, 1998), is therefore not supported by the findings of this case study. This, however, does not mean that public values are safeguarded in DBFMO by definition. In fact, their safeguarding seems to depend greatly on the quality of the contract, output specifications, monitoring activities and the management of informal coordination in terms of communication and trust.

Given the limitations of the single-case study, it remains to be seen to what extent these findings can be generalized to other DBFMOs. A comparative case study between more cases in the water sector could reveal whether the findings derived from this study are atypical or representative. Moreover, comparing DBFMOs that are used for different products and in other sectors might reveal whether the nature of the project does influence the safeguarding of public values. For the moment, this case study paves the way for the application of future DBFMOs in the water sector.

References

Altshuler, A., & Luberoff, D. (2003). *Mega-projects: The changing politics of urban public investment*. Washington, DC: Brookings Institute Press.

Bakker, K. J. (2003). From public to private to…mutual? Restructuring water supply governance in England and Wales. *Geoforum, 34*(3), 359–374.

Beck Jørgensen, T., & Bozeman, B. (2002). Public values lost? Comparing cases on contracting out from Denmark and the United States. *Public Management Review 4*(1) 63–81.

Beck Jørgensen, T., & Bozeman, B. (2007). Public values: An inventory. *Administration & Society, 39*(3), 354–381.

Bel, G., & Warner M. (2008). Does provatization of solid waste and water services reduce costs? A review of empirical studies. *Resources, Conservation and Recycling, 52*, 1337–1348.

Biswas, A., & Tortajada, C. (2010). Water supply of phnom penh: An example of good governance. *International Journal of Water Resources Development, 26*(2), 157–172.

Bloomfield, P. (2006). The challenging business of long-term public–private partnerships: Reflections on local experience. *Public Administration Review, 66*(3), 400–411.

Boeije, H. (2005). *Analyseren in kwalitatief onderzoek: Denken en doen*. Amsterdam, the Netherlands: Boom.

Bozeman, B. (1987). *All organizations are public. Comparing public and private organizations*. Washington, DC: Beard Books.

Box, R. (1999). Running government like a business. Implications for public administration theory and practice. *American Review of Public Administration, 29*(1), 19–43.

Brown, T., Potoski, M., & Van Slyke, D. (2010). Contracting for complex products. *Journal of Public Administration Research and Theory, 20*(1), i41–i58.

Bult-Spiering, M., & Dewulf, G. (2006). *Strategic issues in public-private partnerships. An international perspective*. Oxford, UK: Blackwell.

Child, J., Faulkner, D., & Tallman, S. (2005). *Cooperative strategy*. New York, NY: Oxford University Press.

Collins, N., & Butler, P. (2003). When marketing models clash with democracy. *Journal of Public Affairs, 3*(1), 52–62.

Domberger S., Hall, C., & Li, E. (1995). The determinants of price and quality in competitively tendered contracts. *Economic Journal, 105*(433), 1454–1470.

Domberger S., & Jensen, P. (1997). Contracting out by the public sector: Theory, evidence, prospects. *Oxford Review of Economic Policy, 13*(4), 67–78.

Edelenbos J., van Buuren, A., & van Schie, N. (2011). Co-producing knowledge: Joint knowledge production between expertss, bureaucrats and stakeholders in Dutch water management projects. *Environmental Science & Policy, 14*, 675–684.

Edelenbos, J., & Teisman, G. (2008). Public-private partnership: On the edge of project and process management. Insights from Dutch practice: The Sijtwende spatial development project. *Environment and Planning C: Government and Policy, 26*(3), 614–626.

Eisenhardt, K., & Graebner, M. (2007). Theory building from cases: Opportunities and challenges. *The Academy of Management Journal Archive, 50*(1), 25–32.

Evatt Research Centre. (1990). *Breach of contract: Privatization and the management of Australian local government*. Sydney, Australia: Pluto Press.

Fereday, J., & Muir-Cochrane, E. (2008). Demonstrating rigor using thematic analysis: A hybridapproach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods, 5*(1), 80–92.

Francis, J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M., & Grimshaw, J. (2010). What is an adequate sample size? Operationalising data saturation for theory-based interview studies. *Psychology and Health, 25*(10), 1229–1245.

Frederickson, G. (1999). Ethics and the New Managerialism. *Public Administration & Management: An Interactive Journal, 4*(2), 299–324.

Fumagalli, E., Garrone, P., & Grilli, L. (2007). Service quality in the electricity industry: The role of privatization and managerial behavior. *Energy Policy, 35*, 6212–6224.

Galiani, S., Gertler, P., & Schargrodsky, E. (2005). Water for life: The impact of the privatization of water services on child mortality. *Journal of Political Economy, 113*(1), 83–120.

Grimsey, D., & Lewis, M. (2002). Accounting for private partnerships. *Accounting Forum, 26*(3–4), 245–270.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 59–82.

Harper, B. (1996). Trust but verify: Innovation in compliance monitoring as a response to the privatization of utilities in developed nations. *Administrative Law Review, 48*(4), 593–626.

Hirsch, W., & Osborne, E. (2000). Privatization of government services: Pressure group resistance and service transparency. *Journal of Labor Research, 21*(2), 315–326.

Hodge, G. (2004). The risky business of public-private partnerships. *Australian Journal of Public Administration, 63*(4), 37–49.

Hodge, G., & Greve, C. (2007). Public-private partnerships: An international performance Review. *Public Administration Review, 6*(3), 545–558.

Hodge, G., Greve, C., & Boardman, A. (2010). Introduction: The PPP phenomenon and its evaluation. In G. Hogde, C. Greve, & A. Boardman (Eds.), *International handbook on public-private partnerships* (pp. 3–16). Northampton, MA: Edward Elgar.

Hood, J., & McGarvey, N. (2002). Managing the risks of public-private partnerships in Scottish local government. *Policy Studies, 23*(1), 21–35.

Hood, J., Fraser, I., & McGarvey, N. (2006). Transparency of risk and reward in U.K. Public-Private Partnerships. *Public Budgeting & Finance, 26*(4), 40–58.

Klijn, E. H., & van Twist, M. (2007). Publiek-private samenwerking in Nederland: Overzicht van theorie en praktijk. In J. Boonstra (Ed.), *Ondernemen in allianties en netwerken: Een multidisciplinair perspectief* (pp. 161–196). Deventer, the Netherlands: Kluwer.

Lonsdale, C. (2007). The Challenge of Public-Private Partnerships. *Local Government Studies 33*(2) 311–319.

Milward, B., & Provan, K. (2000). Governing the hollow state. *Journal of Public Administration Research and Theory, 10*(2), 359–379.

Michener, G., & Bersch, K. (2013). Identifying transparency. *Information Polity, 18*(3), 233–242.

Osborne, D., & Gaebler, T. (1992). *Reinventing government: How the entrepreneurial spirit is transforming government*. Reading, MA: Adison Wesley.

Osborne, D., & Plastrik, P. (1998). *Banishing bureaucracy: The five strategies for reinventing government*. New York, NY: Penguin Books Ltd.

Rainey, H., & Bozeman, B. (2000). Comparing public and private organizations: Empirical research and the power of the a priori. *Journal of Public Administration Research & Theory, 10*(2), 447–469.

Reynaers, A. M. (2014). Public values in public–private partnerships. *Public Adminsitration Review, 74*(1), 41–50.

Reynaers, A. & Grimmelikhuijsen, S. (2015). Transparency in public–private partnerships: Not so bad after all? *Public Administration*.

Steenhuisen, B. (2009). Competing public values. Coping strategies in heavily regulated utility industries (Doctoral dissertation, NGInfra Academy, Delft, the Netherlands).

Terry, L. (1998). Administrative leadership, Neo-Managerialism, and the Public Management Movement. *Public Administration Review, 58*(3), 194–200.

Tortajada, C. (2010). Water governance: Some critical issues. *Water Resources Development, 26*(2), 297–307.

van Buuren, A., Klijn, E. H., & Edelenbos, J. (2012). Democratic legitimacy of new forms of water management in the Netherlands. *International Journal of Water Resources Development, 28*(4), 629–645.

van der Wal, Z., & Huberts, L. (2008). Value solidity in government and business: Results of an empirical study on public and private sector organizational values. *The American Review of Public Administration, 38*(3), 264–285.

Weihe, G. (2008). Public-private partnerships and public-private value trade-offs. *Public Money and Management, 28*(3), 153–158.

Wittmer, D. (2000). Individual moral development. An empirical exploration of public- and private sector differences. *Public Integrity, 2*(3), 181–194.

Zeithalm, V. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing, 52*(3), 2–22.

Zhong, L., Mol, A., & Fu, T. (2008). Public-private partnerships in China's urban water sector. *Environmental Management, 41*(6), 863–877.