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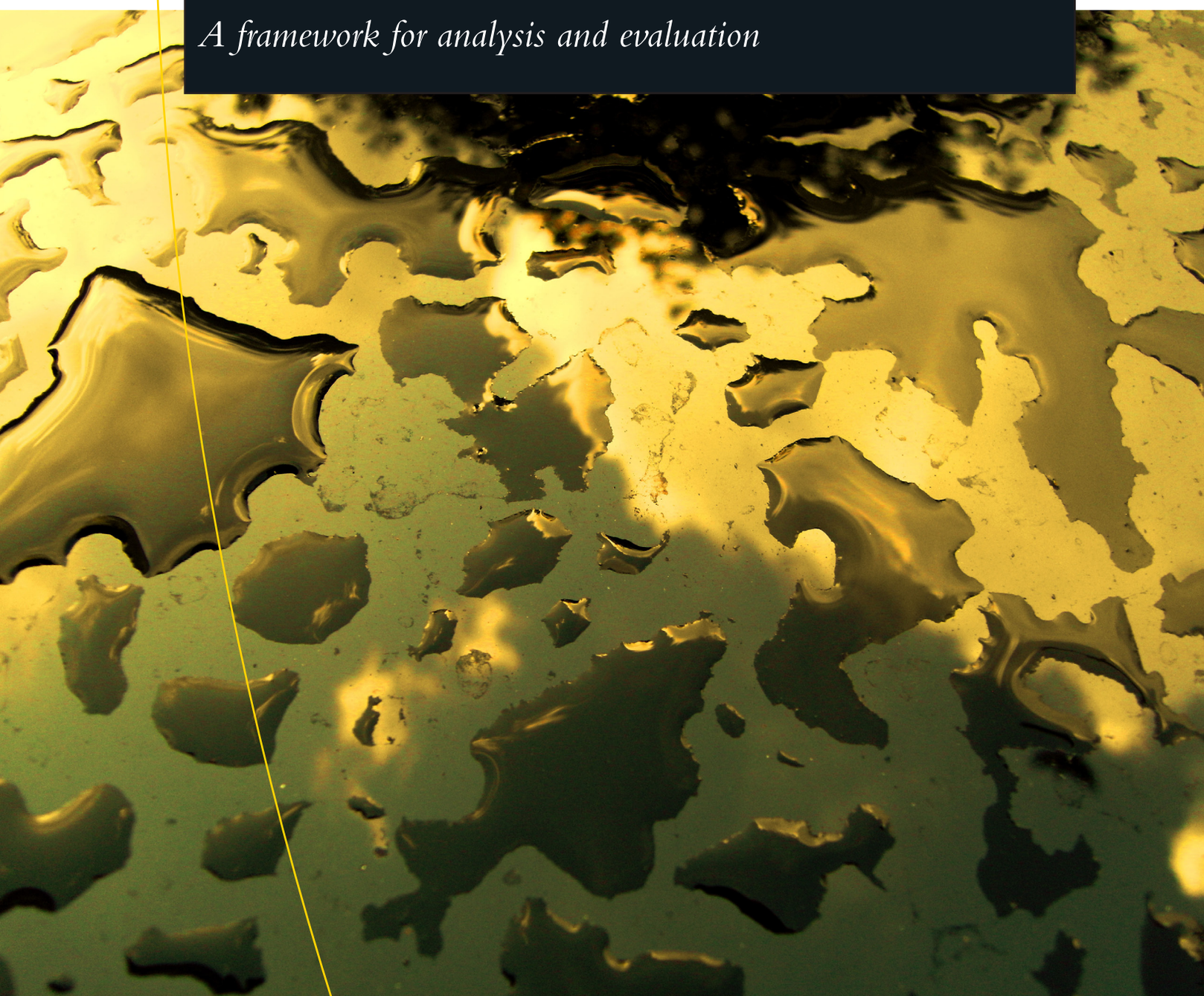
Governance Models and Partnerships in the Urban Water Sector

A framework for analysis and evaluation



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INTRODUCTION

This working paper is part of a research project on governance models and partnerships in water supply and wastewater management in urban areas. The project is a collaboration between Utrecht University and Tilburg University, both of which are located in the Netherlands.
Water governance models range from systems that are public (water supply by federal, local or regional governmental agencies, or public water boards), private (privatised supply or production of water, either on a small scale through local markets or by private multinationals) or public-private (interaction and cooperation between public and private actors). The basic idea behind this project is that the specific context determines not only whether or not a model will function, but also the relevance of the specific criteria used to assess its functioning.
The aim of the project is to come up with workable ('specific context proof') governance models to enhance the organization of water supply and wastewater management in urban areas in terms of different criteria, including service delivery, efficiency of the system, resource conservation, pricing mechanisms and quality of water supplied.

To this end, the project has been divided into four steps:

1. the development of a framework for assessing the working of different types of governance models in water governance;
2. the study of the different governance models - public, public-private and private - used in water supply and waste water management in urban areas in different countries and contexts, followed by an assessment of the strengths and weaknesses of each model within specific contexts;
3. an overview of best practices and analysis of already existing knowledge;
4. the development of a tool to select or improve governance models, using the framework and the knowledge on innovative governance models.

This working paper addresses step 1. The paper provides three building blocks that together constitute a framework to analyze, assess, and improve the working of governance models.
These three building blocks are:

1. a classification of governance models (chapter 2);
2. a set of criteria for assessing the functioning of different types of governance models in water governance (chapter 3);
3. an exploration of how to relate context to the functioning of governance models (chapter 4).

In terms of *practical relevance*, the assessment tool, in combination with the overview of best practices, aims to help governments and organizations involved in water to take decisions to improve the water chain.
In terms of *scientific relevance*, the project will (a) teach us more about which governance model works in what context (socio, political, economic, cultural), (b) which governance model is best suited to 'govern the commons' in a specific context and (c) how public value and public values can be safeguarded in different governance models. Furthermore, the project (d) aims to unravel the complex nature of the public-private distinction, examining models where, for example, the financing of an organization is public, but the implementation private, or the legal form of an organization is private, while its task is public, etc.

The research project started with a study of public private partnerships in China and India during the period 2011-2013 (see A. Michels and C. van Montfort, 2011, 2013a, 2013b and 2014). After a more general analysis of public private partnerships, the project focused on partnerships in the water sector. In collaboration with TERI Delhi and TERI-Netherlands, and financially supported by the Netherlands Organization for Scientific Research (NWO), the University of Tilburg and Utrecht University organized on November 21, 2013 a one-day workshop on partnerships in drinking water supply and wastewater management in urban areas. During this workshop, speakers from The Netherlands and India discussed various forms of partnerships in drinking water supply and wastewater management. The various types of public-public partnerships, public-private partnerships,

and partnerships between private parties (such as citizens collectives, NGOs and multinationals) were explored.

This working paper builds on the results of the workshop and further examines the different forms of partnerships and the ways in which these can be analysed and evaluated.

1 - Research Question

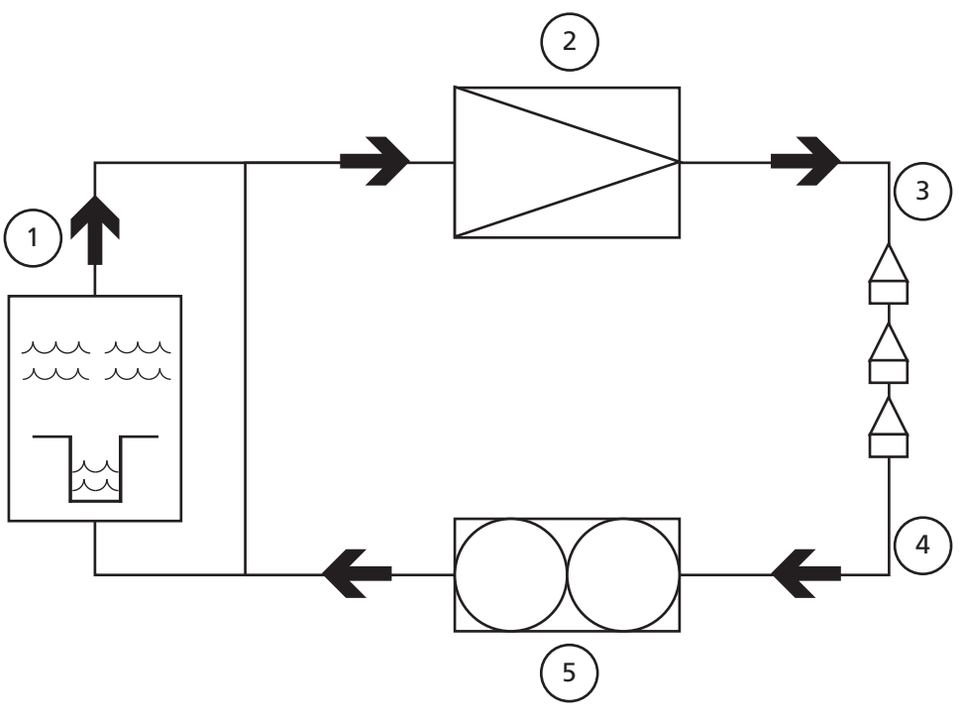
Worldwide, the governance of water issues is among the most challenging issues facing urban governments today. This is particularly true with regard to problems such as ensuring access to clean drinking water and recycling wastewater (OECD 2011). Improving the efficiency and effectiveness of the 'water chain' (the system of interconnected organizations in the water sector) is in everyone's interest. To this end, however, collaboration is vital, as governments are dependent on the knowledge, money, and experience of other public organizations, private companies, or civil society. This has led to the emergence of an array of governance models, ranging from public (on different government levels, or governmental agencies, or in the form of public-public partnerships) or public-private (through interaction and cooperation between public and private actors), to private (on a small scale, through partnerships between NGOs and the population, or private multinationals, such as Veolia) (Bell and Hindmoor 2009).

In recent years, countries with fast growing economies such as India, China and several African countries (e.g. Ethiopia, Rwanda or Ghana) have been experimenting with various governance models, thereby aiming at improving service delivery in water, while making use of the knowledge, experience and money provided by other parties. Europe has gained experience with various water governance models that have been public, private and combinations of both. But what works in a European context might not always work in a different socio-political and legal context. It is therefore important to establish what works in which context, or, to put it otherwise, to determine which conditions have to be met for a specific governance arrangement to be successful.

Various types of governance arrangements may also engage in several different activities, since there are multiple tasks when it comes to organizing the urban water supply. The following steps can be distinguished, which together form the drinking water and wastewater cycle (see figure 1):

1. extraction of water from water resources (e.g. ground water or surface water);
2. purification of water into drinking water;
3. distribution of drinking water to users;
4. collection and disposal of wastewater;
5. treatment of wastewater.

Figure 1: the drinking water and wastewater cycle



Water governance models, including several types of partnerships, often engage in some or several of these activities. Apart from these activities, actors can be involved in other ways as well, such as managing, controlling or regulating the overall system, supervising the activities of other actors or simply owning the water supply infrastructure.

Obviously, the variation in governance models and in actors involved in the organization of the drinking water and wastewater cycle around the world is endless. This report proposes to address questions that, until now, have gone unanswered about the functioning of different governance models in the water sector and about which models works best in what circumstances (Mahalingam 2013).

Hence the central question of this paper is: *Which type(s) of governance model (s) in urban drinking water supply and waste water management work(s) best in what context?*

The aim of this paper is not to provide a definitive answer to this question. Instead, the paper provides three building blocks that together constitute a framework to analyze, assess, and improve the working of governance models.
These three building blocks are:

1. a classification of governance models;
2. a set of criteria for assessing the functioning of different types of governance models in water governance;
3. a tentative idea of how to relate context to the functioning of governance models.

This working paper is organized accordingly.
We start with a classification of governance models, using several examples in the water sector to illustrate the various governance models.

We then present a set of criteria for assessing the working of different governance models, based on insights derived from the following three theoretical perspectives[1]:

1. the work of Elinor Ostrom and others on how to govern 'the commons' (Ostrom 1990; Dietz, Ostrom and Stern 2003) in a sustainable way;
2. the studies performed by Mark Moore and others (Moore 1995; Moore 2003; Bozeman 2007) that provide a better understanding of how to secure public value (desired output/outcome) in complex governance models; and
3. the literature on *good* governance and *good* urban governance. This literature focuses on the question of how public values such as responsiveness, accountability and 'the rule of law' can be safeguarded.

In the final chapter, we explore relevant aspects of context and discuss how these may relate to the working of governance models in drinking water provision and wastewater management.

1 Compare Araral & Wang (2013), who combine knowledge from public sector economics, institutional economics, political economy and public administration to define a research agenda for 'water governance 2.0.'. See also Shirley (2002) who uses an analytical framework that is grounded in the new institutional economics and focuses on the influence of economic forces, laws, rules and social norms on water reforms. The approach in this working paper combines institutional economics with the output-oriented 'public value' model and the normative 'governance' approach.

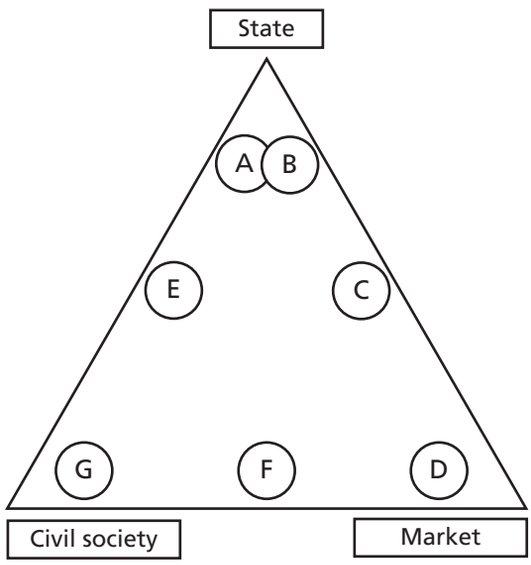
2 - Different Types of Water Governance Models

In order to come to some kind of classification of the different governance models, and to clarify the differences between them, we have used the well-known triangular model for the characterization of organizations (see figure 2). This model distinguishes three societal domains – state, market and civil society – based on the notion that there are differences in organizations in terms of culture, coordination mechanisms, rationalities and action logics (see: Brandsen, Van de Donk & Putters 2005: 750). In the model, 'state' refers to public organizations, 'market' to private organizations (e.g. companies and businesses), while civil society comprises nongovernmental organizations, social movements, volunteer groups and cooperatives. In the figure below, various governance arrangements are shown within the scope of this triangular model of state, market and civil society. These are:

A. Public organizations
B. Public-Public Partnerships
C. Public-Private Partnerships
D. Private companies
E. Partnerships between civil society and public organizations
F. Partnerships between civil society and private organizations
G. Grassroots civil society organizations

When it comes to drinking water and wastewater management, there are several different governance arrangements (also Van Dijk 2008). However, it is not always easy to ascertain whether a governance arrangement should be regarded as public, private or otherwise, as it can be difficult to determine the degree of 'publicness' (see: Bozeman 1987). Some business (market) organizations, for example, are owned entirely by the government, resulting in a situation in which they can be viewed as public as well as private. Also, there are business firms that create 'shared (public and private) value' (see the example of Nestlé in the Moga area in India, in: Biswas & Tortajada 2014).

Figure 2: different types of governance arrangements in the urban water sector



Karré (2011) provides a model that can be used to characterize organizations on a continuum extending from private to public. In the model, organizations can be scored on the following ten dimensions: legal form; ownership; activities; funding; the market environment; value orientation; strategic orientation; relationship with a public principal; managerial autonomy and executive autonomy. The scores on these ten scales can then be used to establish the degree to which organizations can be considered public and/or private. Other dimensions, such as financing and the market environment, may also determine whether an organization is public or private (see: Algemene Rekenkamer 2005: 16).

In this paper, we mainly focus on the legal form, the ownership, funding, the market environment and the relationship with a public principal in order to determine whether an organization should be considered public or private.

The different governance arrangements and forms that are commonly used in the public water sector are listed in table 1, illustrated by examples from the water sector.

Table 1: different types of governance arrangements, forms and examples

Type of governance arrangement	Examples	
A. Public organizations	State owned enterprises	Ten regionally operating water companies in the Netherlands
B. Public-Public Partnerships	Alliance consisting of various government organizations	Waternet in Amsterdam, in the Netherlands
C. Public-Private Partnerships	Concession contract between municipalities and companies	Several municipalities in France
	Concession contracts between municipalities and companies complemented by regulatory agencies	Thames PAM Jaya (TPJ) and PAM Lyonnaise Jaya (PALYJA), the municipality of Jakarta and the Jakarta Water Supply regulatory Body (JWSRB) in Indonesia
	DBFO- contract between a consortium of private companies and a public regional water board	Delfluent in the Netherlands
	BOT-contract between a private company and the government	The Yuvacik Reservoir in Izmit in Turkey and the Turkish government
D. Private companies	Business enterprises	Ten regionally operating companies in the United Kingdom
E. Civil Society-Public Partnerships	Private initiative supported by the (local) government	Orangi project in Pakistan
F. Civil Society-Private Partnerships	Alliance between NGO and private company	Water filters Delhi India
G. Civil Society organizations	Self-governed common-pool resources	Lombok Indonesia

A. PUBLIC ORGANIZATIONS

In the Netherlands, there are in total ten enterprises that together are responsible for the extraction and purification of drinking water, as well as for the distribution to customers. These enterprises function as private companies (companies limited by shares) with private funding, but are wholly owned by state organizations, who are the shareholders (municipalities and provinces). There is one exception, namely 'Waternet', which is a public-public partnership (see next paragraph).

Public organizations

Organization form	Organization type	Activities
State owned enterprises ('Drinkwaterbedrijven')	Public	The extraction of drinking water from water resources, purification into drinking water and distribution to customers

B. PUBLIC-PUBLIC PARTNERSHIPS

Hall et al. (2009) called public-public partnerships (PUP's) a promising but undervalued form of partnership, defining these as "a peer relationship forged around common values and objectives, which exclude profit-seeking. Neither partner expects a commercial profit, directly or indirectly." (Hall et al. 2009: 2). They identified over 130 PUPs in around 70 countries:

"This means that far more countries have hosted PUPs than host public-private partnerships (PPPs) in water – according to a report from PPIAF in December 2008, there are only 44 countries with private participation in water. These PUPs cover a period of over 20 years, and been used in all regions of the world. The earliest date to the 1980s … Many of the PUP projects have been initiated in the last few years, a result of the growing recognition of PUPs as a tool for achieving improvements in public water management." (Hall et al. 2009: 2).

An example of a PUP in the Netherlands, mentioned in the study by Hall et al., is that of Waternet. Although public organizations mainly organize the drinking and wastewater cycle in the Netherlands (see A), with each organization being responsible for a single task within the cycle, there is one public-public partnership, namely 'Waternet'. Waternet operates as a (non-profit) foundation that works for the regional water board (in Dutch: 'Waterschap') 'Waterschap Amstel, Gooi en Vecht' and the municipality of Amsterdam.

Public-Public Partnerships

Organization form	Organization type	Activities
Foundation commissioned by public actors (a regional water board and a municipality)	Public	Managing the entire drinking and waste water cycle, including having the ownership of infrastructure

C. PUBLIC-PRIVATE PARTNERSHIPS

- **France**

In France, the municipalities are responsible for the urban water supply. They are prohibited from selling water and sanitation assets to private companies. However, they are allowed to delegate responsibilities for the supply of water services to private companies for a certain period in time, by means of a contract in which the private organization is constrained by the highest administrative

court in France, the 'Conseil d'Etat', to act accordingly. These contracts are referred to as concession contracts and are awarded via tender procedures. The private organization winning the bid is granted a time-bound contract, usually for an extended period of, for instance, 30 years, which confers the exclusive rights to the operation of the urban water supply in a certain region. The French system is regulated solely by the contracts (in contrast to regulation by separate regulatory agencies), although there is a regulatory body for assessing the water quality (Iwanami & Nickson 2008: 292-293).

Public-Private Partnerships France

Organization form	Organization type	Activities
Municipality	Public	Ownership of infrastructure
Private company	Private	Managing the entire drinking and waste water cycle

- **Indonesia**

Another country in which the French model of urban water supply and wastewater management is used, is Indonesia. In Jakarta, the private companies Thames PAM Jaya (TPJ) (responsible for the eastern part of Jakarta) and PAM Lyonnaise Jaya (PALYJA) (responsible for the Western part of Jakarta), are contracted by means of a 25-year concession contract with the municipality of Jakarta. In addition, a regulatory body called the Jakarta Water Supply regulatory Body (JWSRB) was established in 2001. Iwanami and Nickson (2008: 291-292) refer to a trend in this respect, pointing to the growing number of regulatory agencies that are being established to serve as a counterweight to the concession contract arrangements between private businesses and municipalities. Evidently, therefore, some countries opt to put in place strong regulatory agencies that are responsible for regulating and monitoring the urban water supply.

Public-Private Partnerships Indonesia

Organization form	Organization type	Activities
Municipality	Public	Ownership of infrastructure
Private company	Private	Managing the entire drinking and waste water cycle
Regulatory agency	Public	Regulating, monitoring and supervising the system

- **The Netherlands**

The only public-private initiative in this area in the Netherlands is the Consortium Delfluent. This is a partnership between four different national and international companies (Evides Industriewater, Veolia Water, DIF and Strukton), together with the regional water board ('Waterschap') Hoogheemraadschap van Delfland, a Dutch regional entity focused on water. Based on a design-build-finance-operate contract (DBFO) for 30 years that was signed in 1999, the consortium is responsible for designing, building, financing and operating wastewater treatment facilities.

Public-Private Partnerships The Netherlands

Organization form	Organization type	Activities
Regional Water Board ('Waterschap')	Public	Ownership of infrastructure
Consortium of private companies	Private	Designing, building, financing and operating a facility for the treatment of waste water

- **Turkey**

Yet another arrangement that falls under the category of public-private partnerships, is that of the build-operate-transfer agreement (BOT). An example may be found in Izmit, a municipality in Turkey, where a BOT agreement, under which a 15-year contract was concluded between the Turkish government and the UK-based Thames Water company, came to an end in 1999. The 900-million US dollar contract for the construction of a water reservoir for the treatment and distribution of water to end users also provided that the water would be purchased over a 15 year period at negotiated prices. In the end, the municipality of Izmit and neighboring municipalities refused to buy water from the plant, because it was too expensive. The Turkish government was then expected to compensate the subsequent loss of millions of dollars in revenue (Hall & Lobina 2004: 273-274).

Public-Private Partnerships Turkey

Organization form	Organization type	Activities
Government	Public	Ownership of infrastructure
Private company	Private	Building, operating and transferring a water reservoir used for the treatment and distribution of water to users

D. PRIVATE COMPANIES

In the United Kingdom, ten businesses are responsible for the entire drinking and wastewater cycle, on the basis of territorial licenses. There is also an Office of Water Services (OFWAT) that acts as an economic regulator. This is a body that falls under the responsibility of the government, but it operates independently and can make decisions with regard to the water companies, without approval beforehand and without the possibility of intervention or overruling (Iwanami & Nickson 2008).

Private companies

Organization form	Organization type	Activities
Business enterprise	Private	Managing the entire drinking and waste water cycle and having the ownership of infrastructure

E. CIVIL SOCIETY-PUBLIC PARTNERSHIPS

According to Hall et al. (2009, see B.) in their study on public-public partnerships (PUPs), partnerships between civil society organizations and governmental organizations constitute a specific form of PUP. As they point out: "One feature of PUPs is that they can easily and flexibly involve civil society actors as well, including trade unions, community groups and citizens. PUPS can also develop out of community initiatives (and) some PUPs are generated directly on the initiative of trade unions and civil society. " (Hall et al. 2009: 4).

In their study, they identified a number of examples of partnerships between civil society organizations and public authorities (Hall et al. 2009: 5-10). One of these is the Orangi project in Pakistan, where a community organization planned and developed a sewerage network. By using local labor and micro finance, they paved the lanes over sewers following natural drainage channels The municipal authority built large mains sewers in the settlements to support the development (Hall et al. 2009: 6)

Civil Society-Public Partnerships

Organization form	Organization type	Activities
Municipality	Public	Facilitator of community plans
Community organization	Civil society	Planning and developing a sewerage network

F. CIVIL SOCIETY-PRIVATE PARTNERSHIPS

There are many small-scale examples of partnerships between non-governmental organizations (NGO's) and companies, in particular in underdeveloped regions. One example is the project 'A healthy future for Delhi's dwellers'. The project aims to improve the quality of water supplied to the slum areas in New Delhi. The project is a collaborative effort between the Dutch NGO Plan Nederland and a company that produces water filters. The NGO supports the initiative by training Indian women to sell the water filters.

Civil Society-Private Partnerships

Organization form	Organization type	Activities
Non-governmental organization	Civil Society	Improving the awareness of the relevance of good water quality
Private company	Private	Produces and sells water filters

G. CIVIL SOCIETY ORGANIZATIONS

According to Ostrom (2002: 1317), there are many different governance arrangements for common-pool resources (including water), one of which is a self-governed common-pool resource. This is a system that is not governed by external authorities, such as local, regional, national or international authorities, but by actors who are appropriators, people who make use of resources exclusively, often without permission of any authority (Ostrom 2002: 1317). These initiatives can be regarded as bottom-up governance institutions (Pennington 2013: 1). Some common-pool resources, often located far from centers of governmental authority, are governed entirely by appropriators. Such arrangements are rare in modern political economies. However, in rural areas in some countries, many common-pool resources are self-governed systems (Ostrom 2002: 1317-1318). In Nepal, for example, there are farmers who construct and maintain their own water systems, and monitor and enforce conformance to their rules (Ostrom 2002). Furthermore, the farmers who developed their own agreements about water distribution, have proven to be more successful in growing rice, keep their systems in a better state and distribute water more equitably than government systems do (Ostrom 2002: 1318-1323).

Another example is the water management system in villages on the island of Lombok in Indonesia, where the villagers took the initiative to construct, maintain and monitor collective drinking water

facilities (Lepot and Doosje 2013). Leadership and social control within the community appeared to be crucial factors in making this arrangement a success.

Civil society organizations

Organization form	Organization type	Activities
Self-governing individuals/groups	Civil Society	Ownership of infrastructure, managing drinking water facilities and monitoring and controlling the system

Although there are many more forms of governance arrangements, this chapter has provided an overview of the most commonly used models in the water sector. In the next chapter, we will develop a set of criteria to assess the functioning of these models.

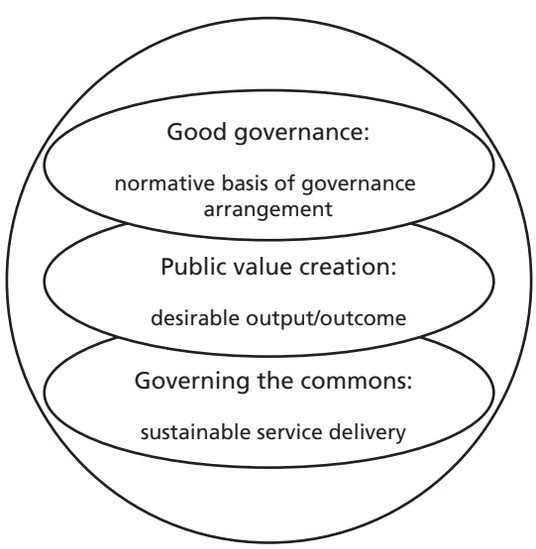
3 - Assessing the Working of Governance Models

To develop a set of criteria for assessing the functioning of different types of governance models in water governance, we used insights from:

(a) the work of Elinor Ostrom and others on how to govern 'the commons' (Ostrom 1990; Dietz, Ostrom and Stern 2003) in a sustainable way;
(b) the work of Mark Moore and others (Moore 1995, 2003 and 2013; Bozeman 2007), who provide a better understanding of how to secure *public value* (desired output/outcome) in complex governance models;
(c) the literature on good governance and good urban governance. This literature focuses on the question of how *public values* like responsiveness, accountability and 'the rule of law' can be safeguarded (Van der Wal et al. 2008).

Combined, these perspectives offer a solid basis for the development of a comprehensive evaluation tool for governance models in drinking water supply and waste water management, as they couple the criteria for sustainable service delivery and output/outcome orientation with the normative requirements of good governance, as shown in figure 3.

Figure 3: theoretical perspectives combined



- **Common-pool resources**

Water is an example of what is called a common-pool resource. Other examples are: terrestrial and marine ecosystems, groundwater basins, the atmosphere and irrigation systems (Ostrom et al. 1999: 278-279). Common-pool resources are systems of natural or man-made resources from which it is difficult to exclude users (Ostrom et al. 1999: 278-279; Ostrom et al. 1994). Figure 4 demonstrates the two characteristics of common-pool resources, i.e., the difficulty of excluding individuals (it is hard to exclude individuals from goods that come from open resources) and the high subtractability of these resources (appropriation by one person determines the availability for others). It does so by comparing common-pool resources with other types of goods.

Figure 4: A general classification of goods

Exclusion	Subtractability: Low	Subtractability: High
Difficult	Public Goods	Common-Pool Resources
Easy	Toll Goods	Private Goods

Source: Ostrom 1994: 7

Common-pool resources differ from 'commons', in that the latter describes a broad set of things, systems such as knowledge and the digital world, access to which is difficult to limit, yet appropriation of which by an individual does not subtract a quantity from another person's use (Ostrom 2008: 10-11). In contrast, most common-pool resources are sufficiently large as to allow the simultaneous use by multiple actors. However, if these resource units are highly valued, with many actors benefitting from their use, a phenomenon referred to as 'the tragedy of the commons' can occur. In that case, the subtraction of units from the common-pool resource by an individual creates negative externalities for others; and the users are caught in an inevitable process that leads to the destruction of the resource on which they depend.

In other words: they produce outcomes that are not in anyone's long-term interest (Ostrom et al. 1999: 278, 279). This problem occurs in the case of highly valued, open-access common-pool resources where those involved and/or authorities do not establish effective governance regimes (Ostrom 2002: 1317). Part of the problem is that there are different types of users: "those who always behave in a narrow, self-interested way and never cooperate in dilemma situations (free-riders); those who are unwilling to cooperate with others unless assured that they will not be exploited by free-riders; those who are willing to initiate reciprocal cooperation in the hopes that others will return their trust and perhaps a few genuine altruists who always try to achieve higher returns for a group" (Ostrom et al. 1999: 278-279).

- **Property rights**

Governance regimes can be involved in the regulation of who is allowed to make use of resource units; the timing; quantity; location; the technology used; who is obliged to contribute to, provide or maintain the resource system; how activities are to be monitored and enforced; how conflicts are to be resolved and how the rules about performance of the resource system and strategies of participants will be changed over time (Ostrom 2002: 1317). As we have seen in the preceding chapter, there are many different governance arrangements for common-pool resources. The type of governance arrangement used for common-pool resources depends partly on who owns the property rights to the system (see table 2). Property rights are important, as, without property rights, common-pool resources can be exploited to an extent that huge, long-term effects ensue for everyone. For example, without clearly defined property rights, fisheries can harvest as much fish as they want, leading to massive overfishing of the world's oceans (Ostrom 2008: 10).

Table 2: Types of property rights systems used to regulate common-pool resources

Property rights	Characteristics
Open access	Absence of enforced property rights
Group property	Resource rights held by a group of users who can exclude others
Individual property	Resource rights held by individuals (or firms) who can exclude others
Governement property	Resource rights held by a governement that can regulate or subsidize use

Source: Ostrom et al. 1999: 279

- **Self governance**

Governance regimes for common-pool resources can sometimes even be self-governed systems. As said before, self-governed systems are systems that are not governed by external authorities, such as local, regional, national or international authorities, but by actors who are appropriators, people who make use of resources exclusively, often without permission of any authority (Ostrom 2002: 1317). While these arrangements are rare in modern political economies, in other countries many common-pool resources are self-governed systems (Ostrom 2002: 1317-1318).

According to Ostrom (2002: 1318-1323, 1335) earlier theorists assumed that self-governed systems could never work, as appropriators are short-term, profit maximizing actors. According to these theories, the appropriators gain property rights to what they harvest (fish) and sell their harvest in an open competitive market. They also make no effort to change or manage the resource system and act independently, not communicating or coordinating their activities in any way. Each fisherman will only take his own marginal costs and revenues, paying no attention to the effect of the subtraction for other people or for the health of future fishing. Also, this theory presumes that external authorities are needed to impose rules on appropriators who produce excessive external effects for others.

In her work, Ostrom (2002: 1318) argues that, based on empirical research, this conventional theory needs some adjustment. There is evidence that this theory is not generalizable, since there are resource systems in which appropriators do coordinate and communicate their activities with others. There are systems where water is the resource unit that are owned and governed by appropriators themselves, in contrast to systems that are owned and operated (but in some cases not governed) by national government. As we have seen in the previous chapter, in Nepal, there are farmers who construct and maintain their own water systems, and monitor and enforce conformance to their rules (Ostrom 2002: 1323). Furthermore, the farmers who developed their own agreements about water distribution, were more successful at growing rice, they kept their systems in a better state and distributed water in a more equitable way than government systems do (Ostrom 2002: 1318-1323).

In general, Ostrom recognized not only that decentralized forms of governance could address dilemmas that are associated with common-pool resources, but that they are often better at delivering sustainable management than centralized alternatives (Pennington 2013: 1).

- **Design principles**

However, Ostrom argues that these decentralized forms of governance can only work properly if a number of 'design principles' are taken into account. She views these principles as essential elements or conditions that help to explain the success of robust self-governed common-pool resource institutions (Ostrom 1990: 90). Although the design principles were designed for self-governed systems (see the complete list of design principles in table 3), a number of these principles could also apply in cases where government is almost absent or collaborating with other parties in the private sector or civil society. For example, the design principle stating that most individuals who are affected by operational rules can participate in modifying these rules, could apply, as could the principle calling for monitoring by monitors who actively audit common-pool resource conditions and appropriator behavior. The availability of conflict-resolution mechanisms could also be included.

In summary, to utilize common-pool resources in a sustainable way it is necessary (1) to define property rights clearly, (2) to organize the utilization and exploitation as much as possible on the basis of decentralized self governance structured by (3) abide by a number of design principles.

B. PUBLIC VALUE CREATION

Ostrom's theory about common-pool resources describes the preconditions for a sustainable common-pool resource management (e.g. drinking water). The second theoretical perspective explored in this paper is that of the public value framework formulated by Mark Moore. This perspective focuses mainly on the outcome. Attention for public value creation is important for public sector organizations and nongovernmental organizations, but also for partners and co-producers, since it enables a shift from a primary focus on results and efficiency towards achieving broader public value creation (O'Flynn 2007: 358). The focus on results and efficiency originates from New Public Management (NPM), a theory of reform in the public sector that emerged a few decades ago.

Table 3: Design principles illustrated by long-enduring common-pool resource institutions

1. Clearly Defined Boundaries
Individuals or households with rights to withdraw resource units from the common-pool resource and the boundaries of the common-pool resource itself are clearly defined.
2. Congruence
A. The distribution of benefits from appropriation rules is roughly proportionate to the costs imposed by provision rules.
B. Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to provision rules.
3. Collective-Choice Arrangements
Most individuals affected by operational rules can participate in modifying operational rules.
4. Monitoring
Monitors, who actively audit common-pool resource conditions and appropriator behavior, are accountable to the appropriators and/or are the appropriators themselves.
5. Graduated Sanctions
Appropriators who violate operational rules are likely to receive graduated sanctions (depending on the seriousness and context of the offense) from other appropriators, from officials accountable to these appropriators, or from both.
6. Conflict-Resolution Mechanisms
Appropriators and their officials have rapid access to low-cost, local arenas to resolve conflict among appropriators or between appropriators and officials.
7. Minimal Recognition of Rights to Organize
The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.
For common-pool resources that are part of larger systems:
8. Nested Enterprises
Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.

Source: Ostrom 1990:90

NPM attempted to introduce businesslike principles, such as effectiveness and efficiency, into the public sector. Managing by budget and rules was replaced by management by initiative, responsibility and performance (Talbot 2009: 168). However, the focus on NPM has led in some cases to an overemphasis on cost efficiency and cost reduction, instead of achieving the broader goal of public value creation (Spano 2009: 328-329).

According to Moore (1995: 28), "the aim of managers in the public sector is to create public value, just as it is the aim of managers in the private sector, to create private value". Moore (2005: 16) defines public value as the equivalent of "the sum of individual satisfactions that can be produced by any given social system or governmental policy". In that regard, it can be seen as "the greatest good for the greatest number" (Moore 2005: 16). Moore also regards public value as "managerial success in the public sector with initiating and reshaping public sector enterprises in ways that increase their value to the public in both the short and the long run" (Moore 1995: 10). In short, "the higher the level of

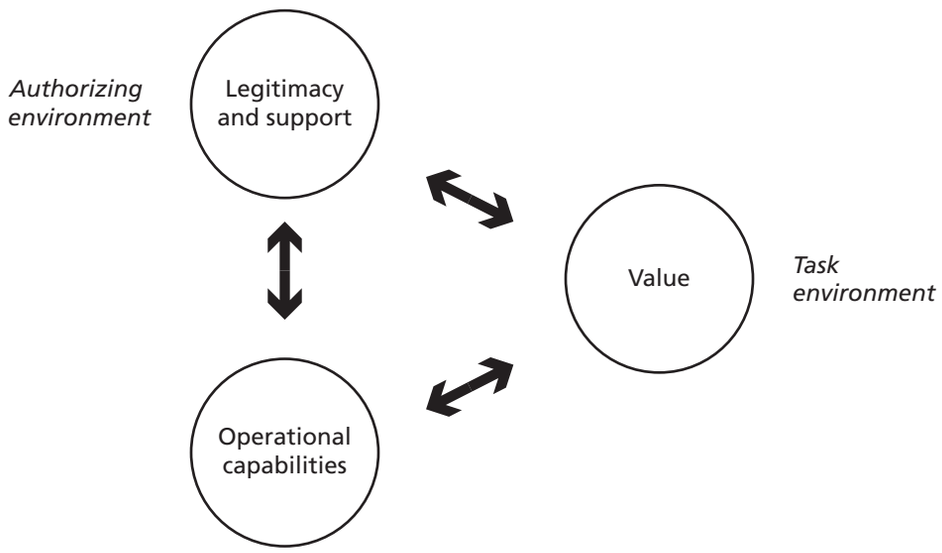
needs satisfied (…), the higher the amount of public value created" (Spano 2009: 330). Citizens are regarded as the primary recipients of public value creation (Rainey 2009: 70).
It should be stressed that public value creation is not the exclusive preserve of the public sector. Many different organizations, belonging to the voluntary sector, the informal community or even the private sector, can be (partly) responsible for public value creation (Benington 2009: 237).
Furthermore, Moore (1995: 37) argues that public value not only consists of public services, but that it also includes regulations, obligations and other actions. For example, public value is also added by improving living conditions in a broad sense, such as an improved quality of life for individuals, better social relationships, higher levels of safety in cities, less pollution and higher public transport efficiency (Spano 2009: 331).

Moore developed a concept of strategy in the public sector, aimed at determining not only what constitutes value in the public sector, but also how this can be achieved. In his view, managers should focus their attention on three complex issues, which should be considered before acting. These issues are (see: Moore and Khagram, 2004: 2):

- what is the important public value the organization seeks to produce?
- what sources of legitimacy and support can be relied upon when taking action and could provide the resources necessary?
- what operational capabilities (including investments and innovations) can the organization rely upon to deliver the desired results?

This concept developed into an important management tool for public value creation, referred to as 'the strategic triangle' (shown in figure 5), which is "intended to focus managerial attention on three crucial issues, when they think about positioning their organizations in the environments in which they are operating" (Moore et al. 2001: 11). Although Moore's strategic triangle was developed for organizations as such, his tool can also be applied to partnerships between organizations (see e.g. Van der Meer, 2012).

Figure 5: The strategic triangle



Source: Moore 1995: 173

In the triangle, the authorizing environment is separate from the task environment. According to Moore (1995), legitimacy and support combined with operational capabilities will lead to the creation of public value. The figure consists of the following three circles, in which:

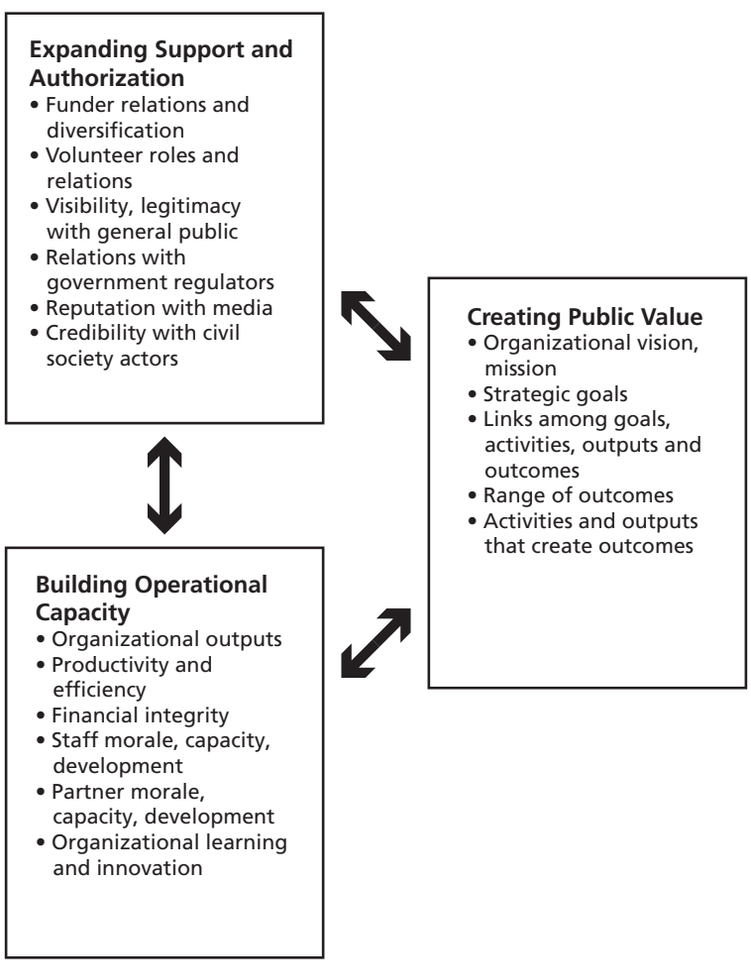
- the value circle is concentrated on the purposes and goals an organization seeks to achieve, together providing it with a purpose, a reason for existence;
- the legitimacy and support circle focuses attention on the sources of legitimacy and support on which an organization can draw, such as financial sources that can be used to carry out programs, or political authorization, support and legitimacy;
- the circle of the operational capabilities refers to the resources, such as 'financial resources', 'skills', 'working capacity', that are needed to achieve the desired results.

The basic idea is, therefore, that a plausible story about the public value to be produced must have been formulated, that the financial resources needed are able to be mobilized and that the operational capacity, required to achieve the desired goals is present. All three of these links must be in place. If any one of the three variables changes, it will have an effect on the other two. If, for instance, the mission of an organization changes, different requirements and demands in terms of the organization

and its employees will be necessary. This principle applies the other way around as well; when policies, the societal climate or economic circumstances change, the strategy of an organization will inevitably change as well (Karré and Van Montfort 2011: 46).

In order to expand legitimacy and support, to build operational capability and to create public value, certain needs have to be met. Moore (2003) suggests a number of measures through which support and authorization can be expanded, operational capacity built and public value created (Talbot 2008: 5). These are presented in figure 6. As can be seen, the creation of public value, for example, requires an organizational vision, a mission to accomplish and strategic goals. In addition, it is important to link goals, activities, outputs and outcomes to each other (Moore 2003).

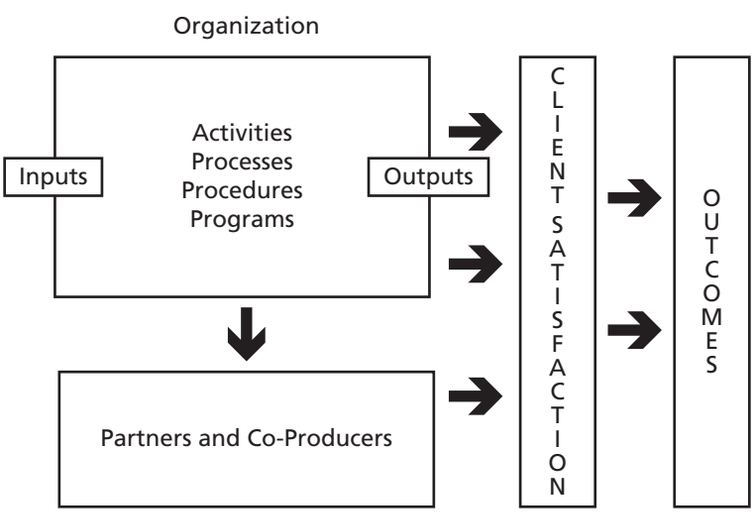
Figure 6: Public value framework for accountability and performance management



Source: Moore et al. 2001: 23; Moore 2003

Public value focuses on the produced outcomes, but the processes followed in order to create public value, are just as important as those outcomes (O'Flynn, 2007: 358). The process that is needed for output to be delivered to clients, and the forthcoming outcomes, are displayed in figure 7. Basically, support and authorization, and the material resources provided (input the organization receives from the authorizing environment), are converted into outputs (the set of activities, processes, procedures and programs), resulting in satisfied clients and desired outcomes (Moore 2003).

Figure 7: Production processes and value chains



Source: Moore 2003

As societal effects and client satisfaction are difficult to determine (Kelly et al. 2002: 8), measuring the results of public value creation is no easy task. According to Moore (2003), the ultimate public value created by governmental or nonprofit organizations can be measured by the satisfaction felt by clients, and by extension, the social outcomes that are produced for society at large. When clients put their money down, they show how much they value the output. And, if next to client satisfaction the output also helps to achieve social outcomes and perhaps change the lives of these clients, even greater public value is created (Moore 2003). The distinction between these two outcomes, prompted Benington to differentiate between two different types of public value, i.e. between that which the public values and that which adds value to the public sphere (Benington 2009: 234-235). The former emphasizes the relevance of engaging with users, citizens and communities (that benefit from created public value), while the latter highlights the general public interest, not only in the present, but also in

the longer term, for generations to come. Hence, in public value creation, both the value produced for individuals, and for the community as a whole should be considered, for today's users and those in of the future (Spano 2009: 333).

However, next to an emphasis on delivering actual services and achieving social outcomes, public or nongovernmental organizations seeking to create public value must also strive to establish and maintain trust and legitimacy, according to Moore's theory on public value. The process of creating public value, consisting of inputs, outputs and outcomes, can impact strongly on the trust and legitimacy in public organizations. It is a process that encourages compliance and active cooperation or even co-production between individuals, organizations and the state and legitimizes the raising of public funds for carrying out collective action projects the market would not provide. In general, this increases social capital by raising overall levels of trust in society (Talbot 2008: 4). In other words, legitimacy and support, combined with operational capabilities, not only lead to the creation of public value, this relationship also applies the other way around. This explains the reciprocal relation between the creation of public value and (the two components of) the authorizing environment (see figure of 'the strategic triangle', above). Legitimacy, the "generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions" (Suchman 1995: 574), is then created through processes of public value creation.

In his recent work *Recognizing public value* (Moore 2012 and 2013), Moore introduced an instrument to 'measure' public value, called the 'public value scorecard' (PVS). This instrument – based on the Balanced Scorecard concept developed by Kaplan and Norton – operationalizes the three elements in the strategic triangle. The PVS makes also visible what actions are necessary to build legitimacy and support in order to achieve the desired public value possible and what kind of improvements in the existing operational capabilities are needed.

PUBLIC VALUES

Related to, yet different from public value, is the concept of 'public values'. According to Kelly et al., appropriate values can stimulate the creation of public value, whereas unfit values can obstruct this process (Kelly et al. 2002: 4). A definition of the concept is given by Bozeman (2007: 132): in contrast to values in a general sense, "public values are those providing normative consensus about (a) the rights, benefits, and prerogatives to which citizens should (and should not) be entitled; (b) the obligations of citizens to society, the state, and one another; and (c) the principles on which governments and policies should be based". Although many authors have pointed out that the values pursued by organizations are diverse, multiple and conflicting (Rainey 2009: 72), various attempts have been made to abstract the distinct values striven for by public organizations (Davis & West 2009: 1-3). Beck Jørgensen and Bozeman (2007), for instance, distinguished seven major value constellations, or categories, of public values, each containing a set of associated values.

1. values associated with the public sector's contribution to society;
2. values associated with transformation of interests to decisions;
3. values associated with the relationship between the public administration and politicians;
4. values associated with the relationship between public administration and its environment;
5. values associated with intra-organizational aspects of public administration;
6. values associated with the behavior of public-sector employees;
7. values associated with the relationship between public administration and the citizens.

Beck Jørgensen and Bozeman subsequently went on to conclude, on the basis of a literature review, that a set of associated values could be linked to each value constellation (see table 4).

This set of values will be taken into consideration when developing a framework for assessing the functioning of different governance models. As we will see, quite a number of these values are also considered to be elements of good governance.

Table 4: Elicited public values by category

Value category	Value
Public sector's contribution to society	Common good
	Public interest
	Social cohesion
	Altruism
	Human dignity
	Sustainability
	Voice of the future
	Regime dignity
	Regime stability
Transformation of interests to decisions	Majority rule
	Democracy
	Will of the people
	Collective choice
	User democracy
	Local governance
	Citizen involvement
	Protection of minorities
	Protection of individual rights
Relationship between public administrators and politicians	Political loyalty
	Accountability
	Responsiveness
Relationship between public administrators and their environment	Openness-secrecy
	Responsiveness
	Listening to public opinion
	Advocacy-neutrality
	Compromise
	Balancing of interests
	Competitiveness-cooperativeness
	Stakeholder or shareholder value
Intraorganizational aspects of public administration	Robustness
	Adaptability
	Stability
	Reliability
	Timeliness
	Innovation
	Enthusiasm
	Risk readiness
	Productivity
	Effectiveness
	Parsimony
	Business-like approach
	Self-development of employees
	Good working environment
Behavior of public-sector employees	Accountability
	Professionalism
	Honesty
	Moral standards
	Ethical consciousness
	Integrity
Relationship between public administration and the citizens	Legality
	Protection of rights of the individual
	Equal treatment
	Rule of law
	Justice
	Equity
	Reasonableness
	Fairness
	Professionalism
	Dialogue
	Responsiveness
	User democracy
	Citizen involvement
	Citizen's self-development
	User orientation
	Timeliness
	Friendliness

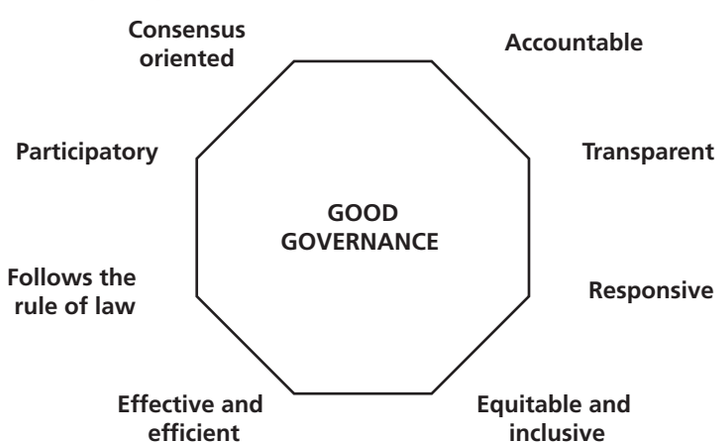
Source: Beck Jørgensen and Bozeman 2007: 360

C. GOOD GOVERNANCE

A final relevant concept is that of 'good governance', which is increasingly being used in the literature in reference to developmental countries. However, there are several understandings and interpretations of what the term entails. According to the World Bank doctrine, formulated in 1989, "good governance is epitomized by predictable, open and enlightened policy-making (that is, transparent processes); a bureaucracy imbued with a professional ethos; an executive arm of government accountable for its actions; and a strong civil society participating in public affairs; and all behaving under the rule of law" (World Bank 1989; 1994). The United Nations subsequently underlined the importance of the term by stating that the fight against dehumanizing conditions of extreme poverty depended on: "good governance at the International level and on transparency in the financial, monetary trading systems" (United Nations, 2000: 4). In other words, the concept of good governance has both normative and prescriptive implications. According to Börzel et al., in the end, good governance means legitimate governance (Börzel et al. 2008: 6-7).

Currently, 'good governance' is used by various institutions worldwide. Good governance is seen as an answer to corruption, administrative inefficiency and lack of transparency in governing mechanisms (Denkers & Jägers 2008: 3; Michels & Van Montfort 2014: 5). The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) has identified eight major characteristics of what good governance entails, which are shown in figure 10 (see UNESCAP 2013):

Figure 10: Characteristics of good governance



Source: UNESCAP 2013

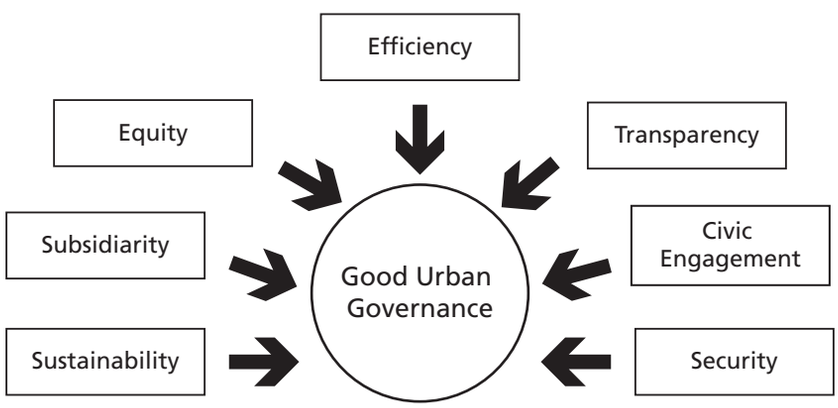
These eight characteristics are:

- participatory (either direct or indirect participation by means of legitimate intermediate institutions or representatives is possible so that the concerns of the most vulnerable in society could be taken into consideration);
- consensus oriented (mediation of the different interests in society to reach a broad consensus in society on what is in the best interest of the whole community and how this can be achieved);
- accountable (government and other actors, such as civil society and private sector organizations must be accountable to the public and to the institutional stakeholders);
- transparent (decisions and their enforcement are done in a manner that follows rules and regulations; moreover, information is freely available and directly accessible to those affected by these decisions);
- responsive (institutions and processes try to serve all stakeholders within a reasonable timeframe);
- effective and efficient (results are produced by processes and institutions that meet the needs of society while making the best use of resources at their disposal, taking into consideration the sustainable use of natural resources and protection of the environment);
- equitable and inclusive (all members of society should feel that they have a stake in decisions and that they are not excluded from the mainstream of society);
- following the rule of law (fair legal frameworks that are impartially enforced, which requires an independent judiciary and incorruptible police force that protects human rights).

Other principles of good governance are also mentioned. The common principles distilled by Denkers and Jägers (2008: 4) from the extensive literature on good governance are: transparency, accountability, participation, rule of law, effectiveness, efficiency, proportionality, consistency and coherence. Others note that conditions such as predictability, sound financial management, anti-corruption efforts, respect for human rights and democracy can also be linked to 'good governance' (Börzel, Pamuk & Stahn 2008: 6).

A related concept is the concept of 'good urban governance'. UN-HABITAT (the United Nations Human Settlements Programme), defines this concept as "the exercise of political, economic, social and administrative authority in the management of an urban entity. It is the sum of the many ways individuals and institutions, public and private, plan and manage the common affairs of the city. It is a continuing process through which conflicting or diverse interests may be accommodated and cooperative action can be taken. It includes formal institutions as well as informal arrangements and the social capital of citizens" (Auclair & Jackohango 2009: 3). The principles associated with 'good urban governance' are shown in figure 11 (see: Auclair & Jackohango 2009: 6-9):

Figure 11: Principles of Good Urban Governance



Source: Auclair & Jackohango 2009: 6

Most of these principles are very similar to those distinguished by UNESCAP (see figure 10). There are, however, a few additional elements. The first is sustainability, referring to the fact that urban stakeholders should balance the social, economic and environmental needs of the present and future generations by taking into account the resources, utilization, urban poverty reduction and environmental concerns through long term strategies. Another is subsidiarity, meaning that responsibilities for service delivery should be allocated on the basis of the closest appropriate level consistent with efficient and cost-effective service delivery, as decentralization and local democracy are seen as key to enhancing the responsiveness of policies and initiatives to the priorities and needs of the citizens. Security is the third new element to be introduced. According to this principle, all individuals have the right to protection of life, property and liberty, cities must strive to avoid human conflicts and natural disasters and freedom from persecution, forced evictions and security of tenure

should be ensured.

Van den Dool et al. (2014) characterize the concept of 'good urban governance' slightly differently, distinguishing a number of aspects that incorporate the values of good governance discussed in the above. These aspects are categorized into input, output and system values. The set of core values, to which, according to these authors, all variations of the concept refer, is presented in table 6:

Table 6: Good Governance and Values Catalogue

Input values (what goes into the system)	**Output values** (what comes out of the system)	**System values** (the constitution of the system)
Democracy as responsive 'rule *by* the people' Core Value: **Responsiveness** Related input values: *Representation, rapport, participation, access, openness*	Democracy as effective 'rule *for* the people' Core Value: **Effectiveness** Related output values: *Productiveness, efficiency, vigour, added value, problem-solving*	Democracy as resilient 'rule *of* the people' Core Value: **Resilience** Related system values: *Dynamic stability, self-regulation, sustainability, adaptability, cohesion in diversity*
Rule of Law/Rechtstaat as 'rule *by* the law' 'rule *for* the law' Core Value: **Reliability** Related process values: *Lawfulness, correctness, integrity and civility, accuracy, transparency and accountability, proportional and fair play equality of rights and impartial treatment*		Rule of Law/Rechtstaat as 'checks and balances' Core Value: **Counterbalance** Related system values: *Countervailing powers, checks and balances, oversight and control, supervision and surveillance*

Source: Van den Dool et al. 2014

As the table shows, there is a strong focus on the core values responsiveness, effectiveness, resilience, reliability and counterbalance. Responsiveness and effectiveness are seen as important because of the notion that governance of the people, should also entail governance by the people and for the people (Hendriks 2010). In other words, good urban governance "not only considers the demands of its citizenry (that is, 'is responsive'), but also acts efficaciously upon these demands (that is, 'is effective')" (Putnam 1993: 63). A governance model can be considered responsive if this is constituted by representation, participation, rapport, access and openness. It is effective if it can deliver productiveness, efficiency, vigor, added value and problem solving (Hendriks & Drosterij 2012: 27). Another core value of this model is reliability, which is seen as a process value; the emphasis is on the

process of governance, in which formal rules and deeply felt social desires come together, resulting in principles such as lawfulness, correctness, integrity and civility, accuracy, transparency and accountability, proportionality and fair play, equality of rights and impartial treatment. The remaining core values, resilience and counterbalance, are emphasized because of their importance for the overall system of urban governance. On the one hand, dynamic stability, self-regulation, sustainability, adaptability and cohesion in diversity are important for a governance system to maintain, even when under pressure. On the other hand, there are conditions that should counterbalance this governance system, such as countervailing powers, checks and balances, oversight and control, supervision and surveillance.

With regard to all these different principles, a distinction can be made between input and output legitimacy (Börzel et al. 2008: 7). Output legitimacy refers to the extent to which the effects of political decisions are perceived to be in the best interest of the people, and is therefore concerned with solving societal problems in an effective and efficient manner. On the other hand, input legitimacy is about the alignment of political decisions with the preferences of people that are affected by these decisions. In that sense, principles such as efficiency and effectiveness can be perceived as belonging to output legitimacy, while characteristics such as participation, democracy and the respect for human rights are associated with the input legitimacy dimension. The rule of law stands somewhat in between, as it can function as a safeguard of institutions in both dimensions (Börzel et al. 2008: 7).

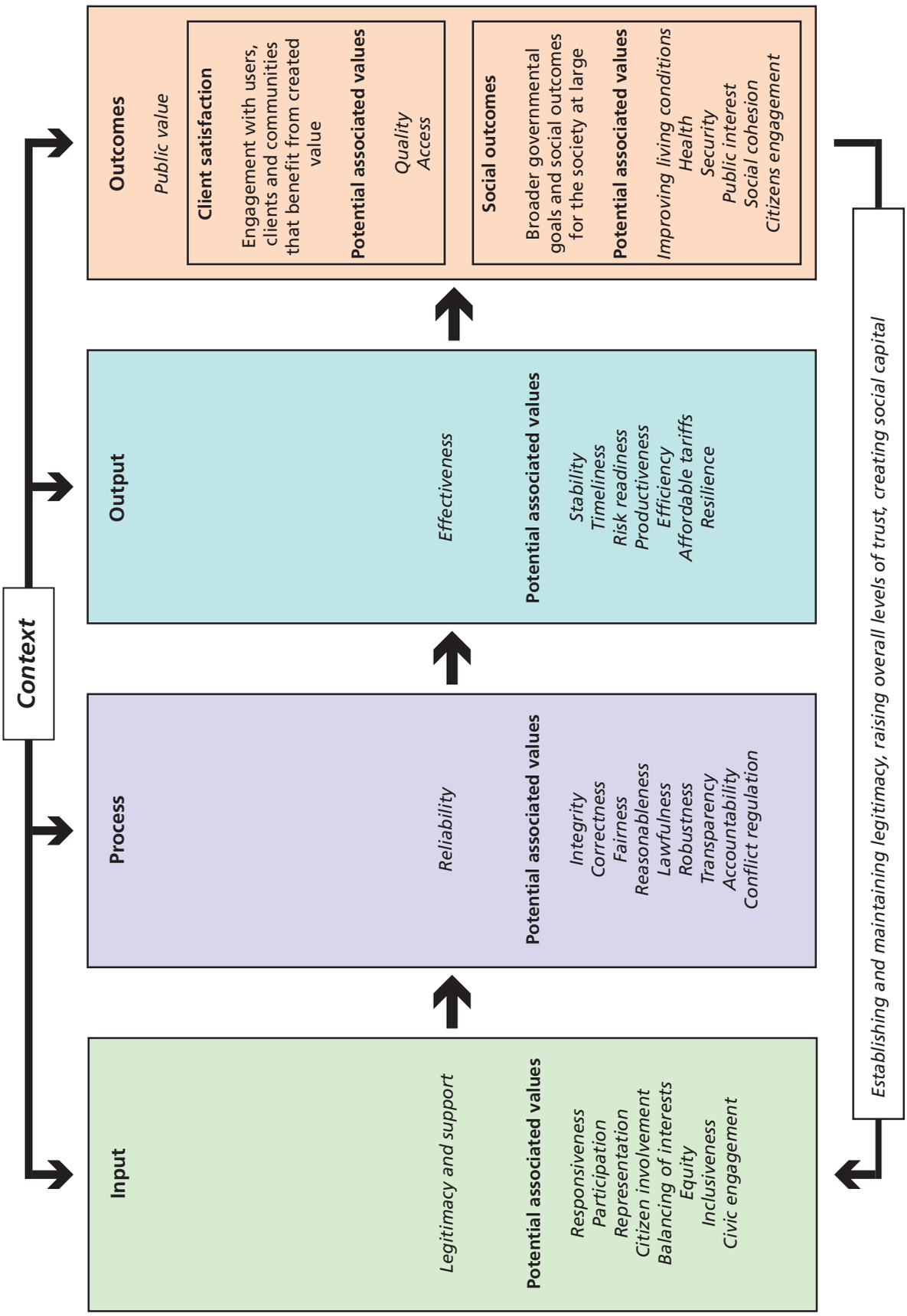
BRINGING THE MODELS TOGETHER

Ostrom provided a set of design principles for decentralized forms of governance models. Moore emphasized that in creating public value, organizations need to strike a balance between their goals, the support from the environment and the operational capacities. In addition, Moore emphasized that public value can be measured by looking at the output (public services) and the outcome (client satisfaction, but also social outcomes). And, finally, the discussion about public values and good governance brought forth a set of normative values that are considered to be important in public service delivery.

These principles and values can be categorized into four sets of criteria that constitute a framework for assessing urban water governance models. These are: input-, process-, output-, and outcome criteria. Simply put: a governance arrangement needs the support of the people and the stakeholders involved (input); the activities, processes and procedures within the arrangement or organization that is responsible should be reliable, robust and correct (process); the arrangement should lead to an effective service delivery (output); and, clients should be satisfied and the arrangement should contribute to the public interest and the society at large (outcome).

Figure 12 presents an evaluation framework for assessing different governance models in the drinking water supply and wastewater management, that is based on the theoretical perspectives described in this chapter. It offers a rough blueprint for a framework for assessing urban water governance models (compare UNDP 2013 and Rogers and Hall 2003: 27-29; see also de Boer et al. 2013), which should be developed further. We build on earlier work done by, amongst others, the UNDP (2013), the OECD (2011, 2012) and the Water Governance Centre (Havekes et al. 2013).

Figure 12: An evaluation framework for assessing governance models



4 – Context Matters

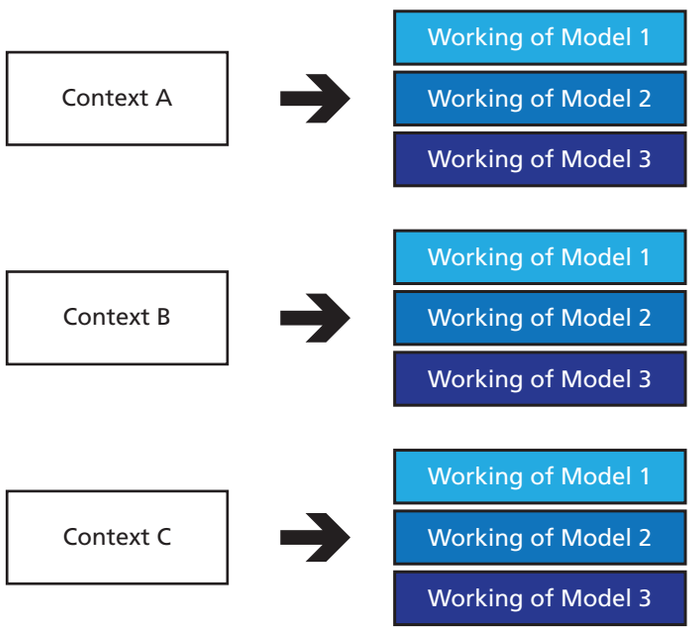
Figure 12 presents an evaluation framework to assess different urban water governance models (compare Havekes et al. 2013). However, before applying this evaluation framework, it is important to realize that context matters in the functioning of different governance models. It does so in two ways. First, because something works in one place (in the sense that criteria a), b) and c) are met in one specific context or country), this does not automatically mean that it will also work in another country or context. For example, a public water supply model may provide a stable supply of good quality drinking water, whereas in another country or region, it fails to do so, due to a weak government and regulatory system. And second, what is seen as a relevant criterion in one context may be seen as less relevant compared to other criteria in another context. For example, in some countries the stability of the water system is considered far more important than citizen participation and stakeholder involvement. In sum, context and environment form important building blocks for assessing and improving governance models in the water sector (see also the concept of 'realistic evaluation' as developed by Pawson and Tilley 1997).

Some relevant contextual elements are:

- Rules and legislation. Including rules and legislation about privatization, the prices of public services, and about contracts with private parties; In addition, the conflict regulation mechanisms applied when conflicts arise between the parties of the governance arrangement.
- Political institutions and rule of law. E.g. state dominance versus plural society (who decides?); freedom of information; checks and balances; rule of law (are there countervailing powers?). These have an impact on the extent to which different interests are involved in decision-making, information is available to all stakeholders, and parties are held accountable.
- Historical legacy. Institutional choices that were made in the past may prevent certain options from being taken into consideration when contemplating improvement of a specific model or choosing between different models.

Figure 13 presents a simple visualization of the relation between context and the working of governance models ('the working of governance models' refers to the fulfillment of the criteria in figure 12).

Figure 13: Context and the working of governance models



In order to learn from others and to improve existing models, there are two strategies that can be followed. As the figure shows, different models can be compared in a similar context, establishing the strengths and weaknesses of each model in that specific context. However, the functioning of similar models can be compared in various contexts, to thus establish the fit of a specific model in a specific context (contingency approach).

5 – Conclusion

WHERE ARE WE NOW?

We started this report with the question: *Which type(s) of governance model(s) in urban drinking water supply and waste water management work(s) best in what context?* The question contains three elements: 1. types of governance models, 2. what works best?, and 3. In what context? The report provided three building blocks, addressing these three elements, that together constitute a framework to describe, assess, and improve the working of governance models.

1. We started with a classification of types of governance models. These included different types of public, private and combinations of public and private arrangements. This classification forms the basis for the *description* of a particular model.
2. We then developed a set of criteria for assessing the working of different types of governance models in water governance. This set of criteria was based on different theoretical insights with respect to common-pool resources, public value and public values, and good (urban) governance. The criteria that finally constituted the evaluation framework for assessing urban water governance models could be categorized into input-, process-, output-, and outcome criteria. This evaluation framework can be used to assess the functioning of a specific model.
3. And, finally, we developed some first thoughts about the relation between the context and the working of governance models. This needs to be developed further by filling it with country and case specific descriptions of governance models in water. Ultimately, this data base could be used for comparing specific cases with other models in similar contexts, or with similar models in other contexts, and thus form a basis to *learn from others* and to *improve* a specific governance model.

WHAT NEEDS TO BE DONE?

In 2013, the UNDP observed that: "data collection and assessment and monitoring systems in relation to water governance reform are areas that are grossly neglected or severely underdeveloped by most water decision-makers" (UNDP, 2013). This report may be seen as a first step to fill this gap. However, much work remains to be done. What is especially needed, is a collection of case

descriptions of different models in various countries. Further research could benefit from data collection by international organizations such as the UNDP and the OECD, more in particular from the OECD Water Governance Initiative.

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Governance Models and Partnerships in the Urban Water Sector

A framework for analysis and evaluation

Water governance models range from systems that are public, private or public-private. This paper addresses the question: which type(s) of governance model(s) in urban drinking water supply and wastewater management work(s) best in what context? The paper provides three building blocks that together constitute a framework to analyze, assess, and improve the working of governance models in drinking water and wastewater management. To develop a set of criteria for assessing the functioning of different types of governance models in water governance, the authors used insights from the work of Elinor Ostrom (how to 'govern the commons'?), the work of Mark Moore ('how to create public value'?) and literature on good (urban) governance.

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