

# Commercialising Water

Conflict & the Privatisation of the Water Sector

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# Abstract

The global water crisis demands a new way of assessing water management, especially because of its role in previous as well as ongoing conflicts. In the last three decades, we have witnessed a wave of water management privatisation. The effects of this widespread privatisation have been varied and some are still unknown. This thesis aims to understand what elements of water management privatisation explain conflict. By developing a two-step theoretical framework and research design (with critical connotations), where qualitative and quantitative methods are combined to establish a more comprehensive comparative framework and analysis, this study fill several research gaps on the relation between privatisation of water and conflict in the Gaza Strip, Jordan, Israel and Yemen. The findings presented in the first step of the analysis conclude that each case illustrates a specific combination of different elements of privatisation of water management explaining the rise of political conflict. Though, with the implementation of a second step and a contextual perspective, the critical role of contextual factors is presented, in particular the importance of “unequal access” which is concluded to be an important factor in all cases displaying political conflict.

*Keywords:* Privatisation, Water, Conflict, Water Management, Middle-East, Fuzzy Set Qualitative Comparative Analysis, Comparative Contextual Analysis

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# 1 Introduction

“And we made from water every living thing” (Quran, verse 21:30). This quote, from the English translation of the Quran, does not only establish that water has a spiritual and social meaning to every living being, but it outlines the most critical aspect of water: water is vital. Survival is based on the access to water.

At the World Water Forum in the Hague in 2000, suddenly, two individuals from the audience got up on stage and revealed their naked bodies where they in black letters had inscribed "No to Water Privatization" and "Yes to Water as a Human Right". As they chained themselves to the podium where Egypt's Minister of Public Works and Water Resources, Mahmoud Abu Zeid, was supposed to start his inaugural speech of the conference, more people from the balconies of the conference hall started to unfold banners and scatter leaflets over the audience (BBC 2000). This act of protest reflects the wide range of social movements protesting against privatisation in different parts of the world; in Bolivia, India, South Africa, to name a few. Even in Ireland, where as many as 100,000 people have flooded the streets to march against the privatisation of water during the last ten years (Barraqué - Zandaryaa, 2011: 2; Zérah - Janakarajan - Llorente, 2011: 211; Bakker, 2003).

Water and its management are generating strong reactions. The privatisation of water during the last three decades has frequently been followed by noteworthy disagreement, public protests, hostility, violence, and social conflict (Castro, 2008: 74-75; Lobina – Hall – Motta, 2005: 288). Also, this life source seems to involve moral sensitivities where profiting from the distribution of it provokes harsh emotions (Prasad 2006: 669; Davis 2005: 147). As a result of climate change, an increasing unpredictability of weather patterns and more droughts water management will be made a priority, not only because of it being a source to life but also as a way to handle conflicts (Falkenmark, 2013: 343).

This “global water crisis”, as it is commonly referred to by academics and policymakers, has been assessed by several academic fields. While the dominant approach involves instrumental and infrastructural tools to eradicate water poverty, little attention has been given to the conflictual trajectory this might create (Clement, 2013: 154). The lack of water is perceived to cause conflict; however, while travelling in the desert landscape on the busier roads of West Bank there is something else more obvious that strikes one’s mind: it is not the lack of resources, but the uneven distribution. The almost Intrusive verdant Israeli settlements and dusty Palestinian villages raise the question of water management in relation to unequal access. The critical understanding by scholars within Political Ecology, stating that changes in water management might give rise to a chain of different social mechanisms, including conflict, is especially thought-provoking in this setting. Water and water management is obviously a cradle sensitive to changes,

and water privatisation has been a well-trodden subject in academic circles. However, practitioners and scholars are yet to arrive to a consensus. Despite the fact that water management in relation to conflict is a “hot topic”, there are still many under-researched areas by which future scholars’ contributions have been called for.

Most research on water privatisation and its effects, derived from the academic and political institutions, are either focusing on or re-using data from a very few cases in specific parts of the world (Sub-Saharan Africa, Latin America, and South-East Asia) (Hall - Lobina – Motte, 2005: 289-291). Most likely because data availability is limited and only three large projects on water management (from 1980 to 2001) has been carried out in North-Africa and the Middle-East, (Budds – McGranahan, 2003: 107). Another under-research area relates to the methodological aspects of earlier research within Political Ecology. A vital contribution will be to introduce a framework with a combination of qualitative-quantitative methods and its results to this research field, where only a few or none have been conducted. Another contribution would naturally be to embrace the topic of disputes; privatisation and its effects.

With the aim of exploring the debate of public-private management of water and its effects, and contributing to this research field, the primary purpose of this study is to study privatisation of water management in the Middle-East and its relation to conflict during the last two decades. Hence, the research question will be formulated in the following way:

*What elements of privatisation of water management in the Gaza Strip, Jordan, Yemen, and Israel can explain political conflict?*

To be able to answer the above research question, this study has adopted a theory developing ambition; combining the more instrumental approach established in Boudet, Jayasundera and Davis’ (2011) study with Bakker’s critical work embracing the importance of contextual aspects, both establishing the relation between privatisation of water and conflict. In addition, this study has adopted a “two-step” research design, where qualitative and quantitative methods are combined to establish a more comprehensive comparative methodological framework and analysis. With this developed framework and by providing previous literature with new findings on studies in the Middle-East, the results demonstrate the importance of a contextual “human-water” perspective to the presumed *causal pathway*, and more specifically the significance of “equal-unequal access” in the formation of privatisation of water management. In short, by adopting a critical perspective to Boudet et al., this thesis will hopefully fill in the research gaps on privatisation of water management and conflict.

## 1.1 Disposition

Chapter two introduces prior research and the broad interdisciplinary approach to water privatisation. This is followed by the more specific relation between water and conflict and the debate between the *instrumental* and *contextual* perspective on water privatisation. In chapter three, the theoretical framework referring to Boudet et al. and their instrumental approach in addition to Bakker and her more contextual approach. This is concluded in a section on the develop theoretical framework adopted to this study, involving definitions of the variables. In chapter four, the research design and methodology are presented, explaining the two-step approach were a quantitative-qualitative fs/QCA is combined with a comparative contextual analysis. In chapter five, the analysis of the four cases establishing the raw data and processed data of the fs/QCA and the findings from a contextual comparative analysis. Finally, in chapter six, the project elements and contextual factors of privatisation explaining political conflict is discussed.



## 2 Previous research

### 2.1 An interdisciplinary approach

While this study will primarily focus on the type of water management and its effects, this limitation is derived from several fields of research. This chapter, concerning previous research, is divided into three subfields: (1) the historical background and theoretical debate with proponents and opponents of water privatisation, (2) the relation between water and conflict, and (3) the relation between privatisation of water and conflict.

This study involves a wide range of different theoretical approaches, yet, at the same time excluding much research on water. While a wide range of insights from different subfields on water has been useful for this study's broader understanding of the topic, the research described here is narrowed to the literature on water in relation to privatisation and conflict, since broader understandings are perceived outside the scope of this study.

#### 2.1.1 Historical background & the public private binary

To generate profit from water management, this demands large infrastructural investments. These large-scale investments create a threshold or a 'natural monopoly' that limits the potential of competitive price adjustments (Mill in Davis, 2005: 159; Spiller – Savedoff, 1999: 121), hence, stressing the need for governmental supervision to encourage competition within the private market. In the 1990's, almost one billion people in the Middle-East and the rest of the world lacked access to adequate drinking water, as a result from inefficiency, under-investment and rent-seeking behaviour. In the light of this, it seemed unjustifiable to not involve private investment in the water sector. Additionally, with governments' inability to eradicate this issue, it was deemed unethical not to invite private actors into water management (Marin, 2009: 18-20).

At the International Conference on Water and Environment held in Dublin in 1992, water was recognised as an economic good and part of the broader Washington Consensus on development. It was acknowledged that water, like any other good, should be the subject of market prices (Marin, 2009: 147). This new paradigm of private investment in the water management sector resulted in the creation of the world's three largest water companies (Veolia Environnement *Vivendi*, Suez Environmental and Thames Water), providing water for over 300

million individuals in 200 countries (Bronwen, 2005: 3). For a more detailed explanation of this privatisation paradigm see “The New Water Paradigm: the privatization of governance and the instrumentalization of the State” by Mattias Finger, in *The Business of Global Environmental Governance* by David L. Levy and Peter John Newell (ed.).

With an expansion of privatisation of water management worldwide, various constellations of public-private partnership emerged. These collaborations in turn decide the level of autonomy for private actors (Bakker, 2010: xvi). For a more comprehensive understanding of privatisation of water management see the definition in the next chapter.

Regarding the effects generated from the privatisation of water, there are two major camps of opponents and proponents discussing the public-private binary. In short, the proponents of privatisation of resources argue that: introducing market principles will increase efficiency, allow for capital investment, and create a motivation to conserve water. It has also been pointed out that the government itself is more likely to criticise and act against a private operator than against a governmental corporation (Massarutto, 2011: 290; Marin, 2009: 3-4). Opposed to these arguments, the opponents of privatisation of resources claim that profit-driven management will not improve general access to water. Instead, they argue for the opposite, that commodifying water creates unequal distribution. Furthermore, opponents have emphasised it to be highly unethical to commodify and make profit of a resource as vital as water (Bakker, 2003: 44).

## 2.1.2 Water in relation to conflict

To be able to understand the social mechanisms that changing patterns in water management might generate, we are required to broaden our understanding to involve human behaviours and the relations between humans and water. This “human-water approach” presents a vital critique towards the technical and instrumental view on water, namely; the ambiguous and dynamic nature of water (on an individual perspective) is often overlooked, that water might be seen as an “ecological necessity, an industrial input, a religious symbol, a commodity, an economic good or a public good” (Bakker, 2010: 3). Hence, it might be interpreted, according to this approach, that changes in water management will have various consequences, including consequences of socioeconomic, cultural as well as an ecological character (Bronwen, 2005: 11; Harvey, 2003: 158).

Many researchers have speculated whether changing patterns in access to water might give rise to conflict. However, there is little consensus on this presumed correlation. Among the more recognised researchers within this field, Homer-Dixon (1999) proposes that unequal access to water might, through ‘social effects’, generate conflict. He puts special emphasis on the decreasing access to water as a catalyst to conflict, and other researchers have come to similar conclusions (e.g., Gizzelis – Wooden, 2010; Hauge – Ellingsen, 1998; Raleigh – Urdal, 2007). However, Homer-Dixon and his supporters have been widely criticised. For instance, Zeitoun et al. (2013) have critiqued the importance of unequal or

decreasing access, proposing that it is rather the *securitisation* of a particular resource that might give rise to conflict (ibid: 5). Similarly, others have recognised that other variables might be of greater importance, in contrast to Homer-Dixon's understanding (e.g. Couttenier – Soubeyran, 2013; Salehyan – Hendrix, 2014; Theisen, 2008). Nonetheless, Homer-Dixon, as well as his critics, have been accused of an oversimplification; assuming that there is a direct linkage between the dependent variable (i.e. conflict) and the independent variable (i.e. resources). Critics have emphasised that an analysis of such complex variables as conflict and water is required to include variables "in between", namely other variables that will uncover the complex and dynamic nature of water (Barraqué - Zandaryaa, 2011: 5). Others have emphasised that this linkage should rather be understood as a "causal combination" where independent variables are understood and *set in relation to* other variables (independent variables) as well as the outcome (the dependent variable). Within a set-theoretic relational approach, causality is understood as, not based on correlations but as causal combinations (Boudet et al. 2011: 501; Ragin, 2006: 3). Another significant shortcoming of previous research involves a lack of attention towards political, economic and the contextual aspects of water (Botton – Merlinsky, 2011: 123-124). Anthropological studies have shown that stability and sustainability rather than efficiency and equal access are more important when dealing with the prevention of conflict (Mosse, 1997: 498-499).

In short, there is a lack of consensus on what variables (and how these variables) might cause conflict.

### 2.1.3 The relation between privatisation of water & conflict

At the World Bank's Energy Forum in 2003, a representative from the global consulting firm, Deloitte, noted a "growing political opposition to privatization in emerging markets due to widespread perception that it does not serve the interests of the population at large" (Hall et al, 2005: 287). While a limited number of researchers have examined the relationship between privatisation and conflict, even fewer have assessed water privatisation and its linkage to conflict; a contentious issue where consensus among researchers is rare. In this section and applied to this study's theoretical framework, the debate on water privatisation and its relation to conflict will be assessed.

In recent decades, several practitioners and scholars have noted that conflicts have derailed and caused delays in privatisation projects around the world (see Birdsall – Nellis, 2003; Castro, 2008; Davis, 2005; Guasch, 2004; Klein, 1996; Prasad, 2006). In Ghana, Honduras, and India, as well as in more industrialised countries such as France, Germany and the US, privatisation projects have been met with significant levels of conflicts. One of the most commonly cited examples is the 'Cochabamba Water War' in Bolivia in 2000. This water conflict involved a series of violent protests in response to the privatisation of the city's water supply company, the result of raised water rates and unequal access to water (Nickson – Vargas, 2002: 99; Perreault, 2006: 151). Then, what is it about privatisation that

tends to give rise to conflict? Hall et al. (2005), have proposed that privatisation has never functioned well due to several embedded flaws. While many scholars similarly criticise the privatisation apparatus as a whole, only a few scholars have pointed to *specific elements* within the privatisation apparatus. Among these few scholars, Castro (2006: 3-4) and Swyngedouw (2005: 92-93) argue that the assumed autonomy of private companies, where firms remain less accountable to democratic principles and rules of transparency, tend to cause grievances and subsequently conflict. This, in turn, will result in a reduced level of state autonomy which will affect the state's capability to overhaul price rates and capacity to create competitive bidding (Bakker, 2008: 247). Furthermore, by employing privatisation, some have emphasised the risk of producing a few large companies who can invest in multiple locations, using the same blueprint and, thus, ignoring local customs and local complexity (Bronwen, 2005: 4).

In reference to *privatisation of water management*, although both proponents and opponents have acknowledged that privatisation of water often fails to deliver what it has promised (Araral, 2009; Bakker, 2003; Bel - Warner, 2008; Dore et al., 2004; Hailu et al., 2012; Tan, 2012), there is still a lack of consensus on the epistemological and ontological assumptions concerning how privatisation of water management and its relation to conflict should be interpreted. While the proponents-opponents debate mainly focuses on the "evils of neoliberalism" (Davis et al. 2010: 291), other researchers have focused on the specific elements within the privatisation apparatus and their relation to conflict. The more instrumental or institutional perspective on privatisation of water management have examined the specific project elements within the privatisation apparatus, arguing for the idea that the right blueprint might be able to provide "a frictionless privatisation" (Boudet et al, 2011; Orr – Scott, 2011: 179; World Bank, 2007: xxviii, 134-135). In contrast to this approach, post-structural critics from the discipline of Political Ecology have accused this former approach of being too simplified; an analysis of such complex and dynamic variables as privatisation and water requires contextual aspects to be taken into account. It is furthermore important to note that scholars derived from this critical approach generally have little trust in the privatisation of water and the adhering belief in tearing down centuries of old traditions surrounding water allocation with new maximising tools (Bresnihan, 2015: 116; Bakker, 2010: 221-222). In reference to privatisation and the conflictual situation in the Middle-East, it has been noted that "the persistence of century-old Islamic and customary rights coupled with technological and economic progress introduced from outside over the past thirty years have led to the present water problems" (Kohler, 2000: 177). These arguments are of course derived from opponents of privatisation of resources, and it is important to note that modern management at the same time have been able to increase water allocation per capita (AQUASTAT 2018). Nevertheless, the insights derived from involving the contextual and complex nature of water and privatisation are essential, especially to improve a more simplified approach to the privatisation of water management and its relation to conflict.

The theoretical framework (as well as the research design) developed in this study involves insights gathered from the instrumental approach as well as the more critical approaches, in this study defined as the *instrumental* approach and the

*contextual* approach. Something which few scholars have done on privatisation of water management in relation to conflict.

### 3 Theory

With a theory developing ambition, to contribute to critical aspects of earlier theoretical frameworks, this study will combine two different theories: (1) the influential scholar within the discipline of Political Ecology, Karen Bakker, and her work on water and privatisation and (2) Boudet, Jayasundera and Davis' study on infrastructural investments in the private-sector and conflict derived from a more instrumental approach. Hence, in this chapter the theoretical framework will be presented, beginning with an outline of these scholars' academic work and viewpoints, followed by the theoretical framework developed for this study.

Boudet, Jayasundera and Davis' study on "Drivers of Conflict in Developing Country Infrastructure Projects: Experience from the Water and Pipeline Sectors" (2011) entails prior research of major infrastructural investments on pipelines and water in the private-sector and their association with the emergence of conflict in different parts of the world (Boudet et al., 2011: 498-499). By examining several independent variables, using a multivariate analysis, Boudet et al. conclude that seven different *project elements* of privatisation of water management were drivers of conflict. In this thesis, project elements are defined in accordance with the definition provided by Boudet et al, as "procedural and organizational aspects of a [privatisation] project" (2011: 499).

The project elements (of either high or low degree) causing conflict according to the analysis presented by Boudet et al. are: (1) significant economic impact on households, (2) host country as equity partner, (3) high number of connections to international NGOs, (4) little proactive consultation, (5) international financial institution involvement, (6) competitive bidding, (8) contract type and (7) large size (ibid: 498, 507). These project elements are further discussed and defined in the section presenting the theoretical framework (see 3.2). The presumed causal pathway is in their study presented in accordance with Ragin's view on "set-theoretic relations". Within the idea of set-theoretic relations "causality" is understood, not based on correlations (i.e. an independent variable causes the dependent variable), but as a "causal combination" (i.e. independent variables combined, and set in relation to the outcome, will generate the outcome) (Boudet et al., 2011: 501; Ragin, 2006: 3).

This presumed causal pathway is furthermore dependent on if there is a "legal conflict" in the area. Boudet and his colleagues' definition of conflict is differentiated into two different aspects: (1) *legal conflict* refers to "that which occurs within the formal structures provided by the host country, project sponsors, or development agency for voicing concerns or opposition to a conflict" (ibid: 499) and; (2) *political conflict* refers to that which occurs outside of these structures, such as peaceful or violent strikes/rallies/demonstrations, arrests, injuries or damages to projects (ibid: 499, 503, 510). In short, according to Boudet et al, these

seven project elements of privatisation of water management in addition to legal conflict explain political conflict.

Even though their study entails a comprehensive model of several variables, some simplified explanations of this more instrumental approach make it easily criticised. By overlooking the contextual features of these variables, Boudet et al. are likely excluding factors that are essential to explain the different or similar outcomes of the cases analysed. For this purpose, this study involves a “two-step” design adding a contextual perspective to the theoretical framework, involving contextual factors. This critical perspective and these contextual factors derive from Bakker’s study on privatisation of water management.

The vast amount of research produced by Bakker entails a cross-disciplinary viewpoint derived from Urban Environment, Human Geography and Development Studies. By adopting the “human-water approach”, she criticises the simplified and de-contextualised models of earlier research, emphasising that the debate surrounding the public-private binary ignore the complex interrelationships between human communities and water usage. The importance of an individual and local perspective is especially highlighted in this regard. Bakker argues that the fundamental issue with privatisation of water management is the fact that “private actors – particularly those motivated by profit – will fail to conserve resources and will cause negative environmental impacts over the long term” (2014: 475), this in reference to the fall of the “state hydraulic paradigm” - in this study referred to as “post-state hydraulic paradigm”. The rise and fall of the state hydraulic paradigm entails the rise and fall of state involvement in the management and ownership of water in the nineteenth, twentieth and twenty-first century. While sufficient supply of water provided by the state enabled populations to achieve basic living standards and resulted in a facilitation of social inclusion, privatisation experiments resulted in the exclusion of poor neighbourhoods by private companies “which cherry-picked profitable neighborhoods and types of consumers” (Bakker, 2014: 471-472; Bakker, 2010: 60, 85). Furthermore, Bakker highlights the negative environmental impacts the profit-driven management of water tend to have in developing countries, what Bakker terms an “ecological fix” (Bakker, 2014: 475).

In sum, while reviewing Bakker’s research on privatisation and water, especially three factors within the “post-state hydraulic paradigm” stands out as recurring themes. These are interpreted as vital to Bakker’s contextual explanation of the effects of privatisation and, thus, important to involve in a critical analysis of the privatisation of water management. The three central factors within the “post-state hydraulic paradigm” and its effects are: (1) unequal access to water, (2) ecological fix, and (3) water security-related fears (Bakker, 2011: 364; Bakker, 2014: 472, 480, 487). A detailed definition of these factors follows in following section.

In the section below, the theory developing ambition will be further discussed; presenting a new model on how to understand and analyse privatisation, water, and conflict by combining Boudet et al. and Bakker’s theoretical frameworks and results.

### 3.1 Theoretical framework - defining variables

In the section below, the variables applied in the analysis will be presented. For the operationalisation of the variables see the next chapter. It is important to note that this model and the conceptualisation of these variables are based on the assumption of “causal combinations”, that these variables in *combination* and in *relation to* the outcome will generate the outcome. Furthermore, before turning to the conceptualisation of the variables, it is important to note that the conceptualisation of privatisation is complex and differ between scholars. In this study, privatisation is understood in accordance with the definition provided by Davis (2005: 148), Kessides (1993: 98) and Bakker (2003: 337), some of the more prominent scholars in the field. Hence, privatisation is defined in line with “a gradation” of four different types of privatisation; ranging from the *lightest* form of privatisation (i.e. where specific activities are controlled by a state provision service) to the *heavier* form of privatisation (i.e. where ownership is completely transferred to private interests).

This study, the research design as well as the theoretical framework, is divided in two steps, where the first step involves the variables provided by Boudet et al. and the second step involves Bakker’s contextual perspective where specific contextual factors are analysed:

(1) The first step encompasses the dependent variable, which refer to political conflict, and the independent variables, which refer to eight project elements. The project elements include; *contract type, economic impact on households, role for host country as equity partner, proactive consultation, international financial institution involvement, competitive bidding, and size*. Additionally, the independent variables include *legal conflict*. While Boudet et al. have included “connections to international NGOs” in their independent variables, this study will not, and instead include this concept in “legal conflict”. Boudet et al. argue that connections to international NGOs are included within the concept of legal conflict; if there is a legal conflict one might expect a high level of connections to international NGOs, and the reverse might be expected if no legal conflict exists (Boudet et al, 2011: 500; Jayasundera, 2009: iv). Hence, this variable will be added to the legal conflict variable.

(2) The second step involves the contextual perspective, where Bakker’s “post-state hydraulic paradigm” and the adhering three factors are included; *unequal access to water, ecological fix and water security-related fears*.

Below follows the conceptualisation of the different variables and factors, divided into the two-step design.



### 3.1.1 The first step

#### *Dependent variable*

#### **1. Political conflict**

The dependent variable in this study is limited to a specific type of conflict, namely *political conflict*. This variable refers to the model and study made by Boudet et al, where the dependent variable similarly refers to political conflict, conceptualised as; that which occurs outside of institutional structures, such as peaceful or violent strikes/rallies/demonstrations, arrests, injuries, or damages to projects (Boudet et al. 2011: 499, 503, 510).

#### *Independent variables*

#### **2. Contract type**

This variable is, in short, conceptualised as “lease or concession”, i.e. whether a privatisation project and the adhering contract encompasses high levels of responsibility and transparency (i.e. concession, or high levels of autonomy) or low levels of responsibility and transparency (i.e. lease, or low levels of autonomy). This variable will allow for an analysis of differences in levels of autonomy of privatisation of water management in different contexts. This project element is highlighted in Boudet et al. and have been introduced by several other scholars (see for example Jayasundera, 2009: 12; Boudet et al. 2011: 499, 503, 504; Bakker, 2010: 27-28).

#### **3. Economic impact on households**

This variable is conceptualised as whether there is an increase or decrease of economic costs for households, i.e. if there is an increase or decrease in prices of water after a contract is signed with a private company. This variable is based on the assumption that political conflict is more likely to emerge when a change in management affects local consumers’ economy (Davis 2005: 145-146; Boudet et al. 2011: 500, 502, 506).

#### **4. Role for host country as equity partner**

This variable is conceptualised according to the assumption that if an infrastructural project derived from foreign investors fails to engage the local state or community this might generate anger. If only foreign investors are involved in the benefits of the project and the officials and local community do not have any personal investments in project, these local actors will have less incentives to ensure a frictionless project and are more likely to blame potential failures on the external actor (Boudet et al. 2011: 500-501).

#### **5. Proactive consultation**

This variable is conceptualised in line with the assumption that if proactive consultation (i.e. regular consultations with the public) is involved in the infrastructural project, this will result in less opposition as well as “reduced

financial risk (from delays, legal disputes, and negative publicity), direct cost savings, increased market share (through good public image), and enhanced social benefits to local communities” (Environment Division 1998 in Davis et al 2011; Beierle – Cayford, 2002: 11-12; Boudet et al, 2011: 500, 502). In short, if proactive consultation is involved in a privatisation project the likelihood of political conflict is small.

#### **6. International financial institution involvement**

This variable is conceptualised in line with the assumption that if Western institutions, such as the World Bank, are contributing with investments and founding of the infrastructural project in a non-Western country, which in turn results in increased involvement, regulations, and oversights by these institutions, this will most likely attract local opposition. Hence, projects that are fully sponsored by Western funds are more likely to be associated with political conflict (Boudet et al. 2011: 502-503).

#### **7. Competitive bidding**

This variable is conceptualised in line with the idea of “sole-sourcing”, which refers to the where one company is awarded a contract without competitive bidding. This is thus based on the assumption that, to produce the *right prices* in a water management contract a formal, structured, competitive process is required. A process with multiple competitive bidders is commonly understood as a way of arriving at a reliable bid. Hence, the assumption is that the inclusion of high levels of competitive bidding following regulatory frameworks might prevent local and international grievances, and political conflict is more likely to occur if there are low levels of competitive bidding (i.e. sole-sourcing or non-competitive bidding) (Boudet et al. 2011: 500, 502).

#### **8. Size**

This variable is conceptualised in accordance with the assumption that the overall size of a project is related to the “size” of the public opposition (Dear, 1992: 292). If the project’s size is large, measured in terms of the size of the USD investment, political conflict is more likely to occur because larger projects are expected to intensify reactions compared to small investments (Boudet et al. 2011: 499-500).

#### **9. Legal conflict**

This variable is conceptualised according to the assumption that the presumed causal pathway (project elements of privatisation correlating with conflict) is dependent on if there is a “legal conflict” in the area. Legal conflict refers to “that which occurs within the formal structures provided by the host country, project sponsors, or development agency for voicing concerns or opposition to a conflict” (Boudet et al. 2011: 499).

### 3.1.2 The second step

This second step in the theoretical framework is based on the arguments made by several scholars within the discipline of Political Ecology; a local “human-water” perspective and inclusion of contextual factors are required to provide a comprehensive and reliable analysis of the privatisation of water management (Wolf, 1972: 202; Bakker, 2010). This concept is conceptualised according to the interpretation of Bakker’s understanding of the “post-state hydraulic paradigm”, where especially three factors are understood as vital to include in an analysis of the privatisation and its effects. The first factor within this concept, and which is included to this second step of the theoretical framework, is (I) *unequal access to water* which refers to the level of social inclusion/exclusion as an effect of the distribution of and access to water. Bakker has emphasised that privatisation and profit-driven projects have resulted in private companies “cherry-picking” profitable neighbourhoods and types of consumers, which in turn tend to generate public opposition (Bakker, 2014: 471). The second factor highlighted by Bakker is (II) *ecological fix* which refers to the gains made by profit-driven actors at the expense of the environment, where actors temporarily devolve costs onto the environment, which likewise tend to generate public opposition (Bakker, 2011: 364; Bakker, 2014: 475). The third relates to (III) *water security-related fears*. Given the broader security concerns associated with water; based on the fact that water is one of the most vital resources for all living beings and the fact that water stress “is already a widespread and growing phenomenon” and “is not likely to be offset by [potential] water efficiency” (Bakker, 2014: 480), it has been assumed that local communities (as well as governmental institutions) “may be less willing to cede control over the development of water resources and large-scale hydraulic infrastructure to nonstate [or private] actors” (ibid).

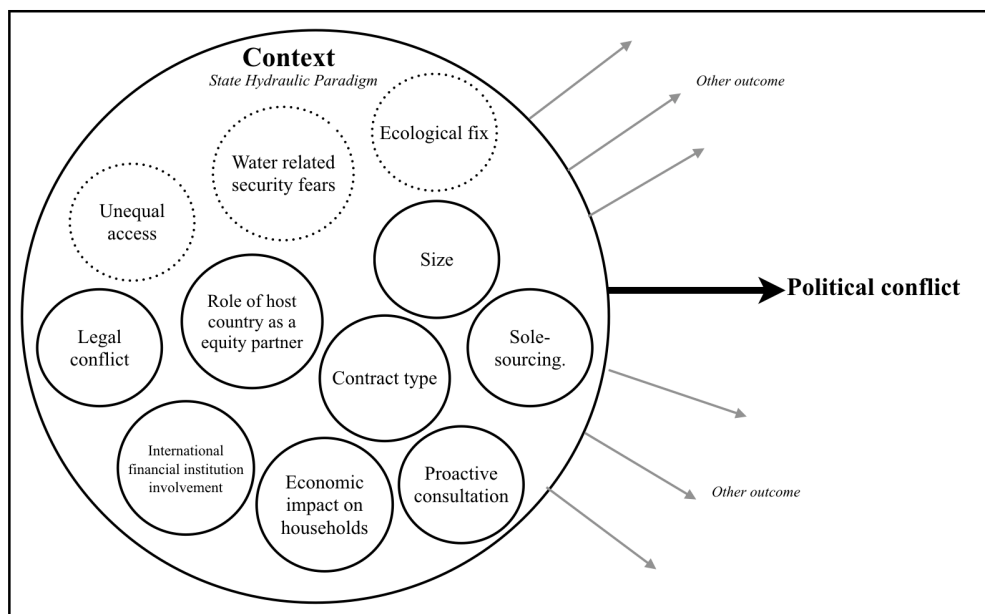


Figure 1. Conceptual model of the theoretical framework

## 3.2 Limitations

This study involves several limitations. The first limitation refers to the level of analysis. The selected variables refer to the domestic level of analysis, excluding effects or variables on an international level (see Levy, 1998: 151). Evidence of several cases suggests that changing patterns in water management might have effects on interstate politics (Zeitung, 2008: 19-20). While the international level of analysis allows for a broader understanding of the variables and their effects, these require different frameworks and additional data. The limited time frame and scope of this study, however, do not allow for further expansion, thus, referring only to the domestic level of analysis.

Secondly, it is important to note that the theories adopted to this study are founded and refer to contexts that are different from the ones in the Middle-East, presenting this study with a risk of focusing on and analysing elements that might not be as important in the Middle-East region. However, the fact that the Middle-Eastern region reflects an under-research area on privatisation of water management calls for theory development and that previous theories are applied to this specific region.

Thirdly, this study intends to remain impartial, although the primary focus concerns conflictual outcomes of privatisation. Hence, not focusing on potential positive outcomes such as increasing coverage of water networks and an increase of water quantity (World Bank, 2007: 136). Even though privatisation of water management, given the "right" circumstances, might reduce the likelihood of conflict, the majority of privatisation projects of water management in developing countries have failed to deliver what was promised (Araral, 2009; Bel - Warner, 2008; Tan, 2012).

Fourthly and lastly, due to the limited scope of this study, it has been necessary to exclude detailed descriptions of each case's historical and contextual background. The failure or successful adaption to neo-liberal reforms and privatisation is, of course, dependent on the geopolitical and geo-economic conditions as well as the specific regulative and historical trajectories of each case. As has been concluded by Spulber and Sabbaghi; all states are not equally adaptive to privatization (1998: 198-199). Due to the limited scope, this study will analyse the specific contextual backgrounds surrounding the project elements and exclude a more comprehensive analysis – however, the study will take this critical limitation into account.

# 4 Methodology

## 4.1 Research design

This study intends, as already been stated, to combine a contextual and critical perspective with a more instrumental perspective of privatisation of water management. This has created a need for more advanced “two-step” research design which involves both qualitative and quantitative features. The first step involves the same methodology that was adopted by Boudet et al. (2011), namely a *Fuzzy Set Qualitative Comparative Analysis* (fs/QCA). While this method involves some complex features, to improve the reliability of the generated results as well as introduce the contextual factors to this analysis, this method will be supported by a more traditional *Comparative Contextual Analysis*, the second step of the research design. In the following section, these methods and how they will be applied to this study are presented in more detail.

### 4.1.1 Fuzzy Set Qualitative Comparative Analysis (fs/QCA) & Comparative Contextual Analysis

The fs/QCA method was first established by Charles Ragin (1987; 2009; 2017). In line with the research question and the aim of this study, a fs/QCA method embraces the possibility of several independent variables explaining one single outcome. This method allows for several different independent variables to be coded through in-depth material of several cases, hence, differing from other more traditional comparative case study designs, which only allow for a small number of independent variables and cases. Furthermore, this fs/QCA recognises the set-theoretical relational idea of “causal combinations” (i.e. independent variables combined, and set in relation to the outcome, will explain the outcome), in contrast to more commonly adopted methods based on correlations.

The fact that a database of material, on simply privatisation or privatisation in relation to conflict, is missing from this research field makes any large-N study challenging to apply. This limited availability of material has made it necessary to use “desktop studies” of news-articles, academic journals, and books. The fs/QCA allows for setting up unique criteria for each variable and based on these criteria is able to calibrate the gathered information.

The fs/QCA method is based on a *Boolean algebra* to determine the different *causal pathways*. The different values of the independent variables are put together to provide evidence for the concluding results. These key causal combinations, or “recipes”, refers to a binary scale, or *crispy set*, where 1 is *fully in* and 0 is *fully out*. In this study, however, this way of determining causal pathways have been broadened to involve a broader set of values than the binary scale of 1 and 0; involving *fuzzy set values* with interval, ordinal, or nominal indicators, coded by values “in-between”, ranging from 0 to 1, e.g., .20, .40, .60. In short, this will allow us to foresee the causal combination between the independent variables and dependent variable; that privatisation influences conflict, and not the other way around.

The data program called *Compass* (fsqca), established by Ragin (2017), has been adopted to this study's research design, mainly because this data program is required within a fs/QCA. When the raw data have been codified, the values are processed in the *Compass* program, which in turn determines the *consistency* and *coverage*. *Consistency* “reflects the frequency with which a combination of causal conditions leads to a particular outcome” (Boudet et al., 2011: 505; Ragin, 2006: 1). Thus, if the consistency score reflects more than 80 percent (0.8), this means that we can conclude with certainty that a specific combination of causal conditions (i.e. a combination of variables) explains a particular outcome (i.e. the dependent variable) (Ragin, 2009: 119). *Coverage*, on the other hand, relates to the empirical relevance of the causal pathway, i.e. this combination of causal conditions that explains a particular outcome corresponds to a certain degree with the case studies included in the analysis (Boudet et al., 2011: 505; Ragin, 2006: 1). As already been mentioned earlier, this presumed causality, which consistency and coverage refers to, reflects the “causal combination” where the independent variables combined, and set in relation to the outcome, are assumed to explain the outcome (Boudet et al. 2011: 501; Ragin, 2006: 3).

In the second step of this study's research design a *comparative contextual analysis* is applied. The comparative contextual analysis incorporates the assumption that actors on the domestic and individual level are shaped by contextual factors (Findlay – Henham, 2007: 104-105). In a *comparative contextual analysis*, the focus lies on contextual aspects of the social reality, reflecting historical, social, political as well as economic features, since these aspects shape the local context and the potential outcome (Ibid: 109). Moreover, this method involves both structural features and agents into the analysis. This second step of the methodology relates to the results provided in the fs/QCA, as well as additional information on the contextual factors (referring to Bakker's “post-state hydraulic paradigm”).

Hence, this second step is essential to incorporate a contextual perspective to the analysis, to be able to grasp the more qualitative and contextual aspects that are difficult to merely reduce to number. Moreover, this comparative contextual analysis is made possible due to the relatively small number of cases involved in this study, in comparison to other fs/QCA studies that involves a greater number of cases.

## 4.2 Operationalisation

The operationalisation of the dependent variable and independent variables is presented in the figure below. This operationalisation is based on Boudet et al. (2011: 501-503) and, in some cases, these have been slightly modified to correspond with the case studies.

| <i>Dependent variable</i>                              | <i>Fuzzy set variable and definition<br/>Evidence of:</i>   |
|--|---|
| <b>Political conflict</b>                              | 0.0 No conflict.<br>0.2 Some opposition formed.<br>0.4 Peaceful strikes or rallies.<br>0.6 Evidence of more than five peaceful strikes, rallies or demonstrations.<br>0.8 Evidence of more than five injuries and violence in rallies and/or demonstrations.<br>1.0 One or more dead resulting from strikes, rallies, or demonstrations.  |
| <i>Independent variables</i>                           |   |
| <b>Contract type</b>                                   | 0.0 Light form of privatisation. <i>Public provision service</i><br>0.25 Little role of privatisation. <i>Management contract</i><br>0.75 major role privatisation. <i>Concessions cooperative and communal arrangements</i><br>1.0 Private owned. <i>Build-operate-transfer (BOT) or build-operate-own (BOO)</i>   |
| <b>Legal conflict</b>                                  | 0.0 No evidence of legal conflict.<br>0.2 Tension between formal parties involved in contract.<br>0.4 Any public meetings or hearings.<br>0.6 Labour disagreements, conflict between fractions of government or municipality.<br>0.8 Renegotiations and major official grievances.<br>1.0 Injunction lawsuit (national or international).   |
| <b>Economic impact on households</b>                   | 0.0 Price decrease at contract signing following 'flat' pricing during pre-signing.<br>0.2 Price decrease at contract signing following some increases during pre-signing.<br>0.4 No price increases following contract signing.<br>0.6 Price increase following contract signing as per contract stipulations.<br>0.8 Price increase following contract signing beyond contract stipulations; increase is not 'large'.<br>1.0 Price increase following contract beyond contract stipulations; increase is 'large'. |
| <b>Proactive consultation</b>                          | 0.0 Some proactive consultation.<br>0.6 Some incomplete, insincere activity proactive consultation.<br>1.0 No proactive consultation.   |
| <b>International financial institution involvement</b> | 0.0 Project company received no funding from any OECD sources.<br>0.6 A bilateral aid agency (or an export credit agency) of an OECD country was involved in any capacity) in the project.<br>1.0 World Bank was involved (in any capacity) in the project.   |
| <b>Host country as equity partner</b>                  | The local government's equity share of the project company;<br>0.0 >50%<br>0.6 ≤50%<br>1.0 None   |
| <b>Size</b>  | 0.0 Small <0.1 billion.<br>0.6 Medium >0.1 billion <1 billion.<br>1.0 Large >1 billion.   |
| <b>Competitive bidding</b>                             | 0.0 Fully competitive bidding with more than 2 bidders.<br>0.4 Effort taken to implement competitive bidding, but contract or other conditions favoured one company.<br>0.8 Effort taken to implement competitive bidding but only one company remained at final stage.<br>1.0 Deliberate sole-sourcing   |

### 4.3 Case selection & time frame

There is a lack of case studies on privatisation of water carried out in the Middle-East. This has provided this study with a difficulty in data availability, which in turn has laid the foundation for why this study only has incorporated a few cases – where data have been easier to obtain. These cases are: the Gaza strip’s 1997 management contract and its suspension; Jordan’s 1999 management contract; Yemen 2002 concessions cooperative and communal arrangements and the intensive local conflict over water; and Israel’s 2006 private entrepreneurship or build-operate-transfer and the civil mass protest. These cases, in turn, are estimated to be among the top countries with perpetual water stress (World Resource Institute 2018). Furthermore, this selection provides this study with cases with both “positive” and “negative” outcomes. Namely, the Gaza Strip and Yemen indicates a high level of the dependent variable (positive), Jordan refers to a lower level of the dependent variable (negative), and Israel relates to somewhere in-between (positive-negative). By involving both positive and negative cases, a comparative analysis with greater degree of validity is possible. Even though different, all these cases involve the tension and dynamics between privatisation, water, and conflict.

By adopting a fs/QCA method, this study is presented with the option of a minimum of four cases and the maximum of 16 variables (Berg-Schlosser - de Meur 2008: 28). As already been mentioned, due to the limited availability of data this study will adopt the minimum number of cases.

The selection of the time frame of each case refers to Kessides’ definition of privatisation contracts’ usual duration. Kessides (1993: 98) notes that a management contract usually extends to 5-7 years, while other contract types lack a time limit. Hence, a 7-year period, from that the contract is signed, will frame this study’s data collection and analysis.

In the end of the twentieth century and the beginning of the twenty-first century, many states in the Middle-East conducted several privatisation projects of water management. In addition to the chosen cases, Kuwait, Egypt, Oman, Lebanon, Saudi Arabia, Qatar, and Bahrain all embraced privatisation (World Bank 2007: 43-44). However, due to a lack of academic material and the fact that the data from these cases were predominantly from potentially biased NGOs, these cases have not been included in this study.

In other case studies in the Middle-East, such as the West Bank, Egypt and Oman, the privatisation projects were opposed and terminated it begun (Budds – McGranahan, 2003: 107). While these cases are in line with the argumentation that privatisation steer conflict, since there was no actual privatisation project in these areas the effects of different project elements cannot be analysed. In this study, the Middle-East is narrowed to and defined according to Cambridge dictionary (2018) which does not embrace the North-African continent.



## 4.4 Data collection & material

The “rough” codification provided with a fs/QCA codification enables an analysis of various interacting variables, however, it might involve some validity errors. The qualitative material on privatisation tends to be financed by companies or NGOs with a specific agenda. In a critical examination of the material, avoiding biased information and using triangulation have been required to strengthen the study’s validity. The majority of the data analysed in this study is derived from academic publications in books and journals from different research fields, in addition to information derived from well-established and impartial NGOs and news-reports. For instance, the data on Yemen is partly based on Mewes’ book on *Decentralization on the Example of the Yemeni Water Sector* (2011), in addition to a number of academic articles from other research fields; from Economics (e.g. Beh-Alameer, 2012) and Political Science (e.g. Moore 2011) and various research projects and news-reporting (e.g. ECC, 2018a; Ferguson, 2015).

It is important to note, what might be the most significant limitation of the findings provided in this study, the findings are shaped and limited to the available data. However, by involving both primary and secondary sources and triangulation to this study, in addition to excluding information that is debated (or included with a short argumentation on why they are considered in the appendix), this limitation might be averted. This might increase the intersubjectivity of the codified data set for future researchers to examine and use.

In the chapter below, the coding process is exemplified, with a description of the multiple sources and considerations that have been involved in the data collection.

# 5 Analysis

## 5.1 Raw data & codification

In the figure below, the values from the qualitative codification and the raw data before being processed in Compass are presented. To strengthen the intersubjectivity of this analysis, the codification process of one variable (the dependent variable; political conflict) for one case (Israel) is presented in more detail below.

| <i>Fuzzy set</i> | <b>Political conflict</b> | <b>Legal conflict</b> | <b>Economic impact on households</b> | <b>Contract type</b> | <b>Non-competitive bidding</b> | <b>Proactive consultation</b> | <b>International financial institution involvement</b> | <b>Host country as equity partner</b> | <b>Size</b> |
|------------------|---------------------------|-----------------------|--------------------------------------|----------------------|--------------------------------|-------------------------------|--|---------------------------------------|-------------|
| c1 Gaza Strip    | 0.8                       | 0.6                   | 0.4                                  | 0.33                 | 0.0                            | 0.0                           | 1.0  | 0.4                                   | 0.6         |
| c2 Jordan        | 0.2                       | 0.8                   | 0.6                                  | 0.33                 | 0.8                            | 0.6                           | 1.0  | 0.0                                   | 0.6         |
| c3 Yemen         | 1.0                       | 0.2                   | 0.8                                  | 0.67                 | 0.8                            | 0.6                           | 0.6  | 0.0                                   | 0.0         |
| c4 Israel        | 0.6                       | 0.4                   | 1.0                                  | 1.0                  | 0.8                            | 0.0                           | 0.0  | 1.0                                   | 1.0         |

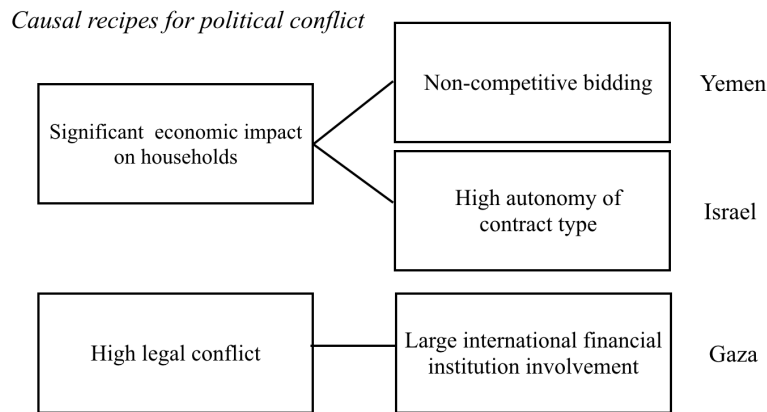
The dependent variable labelled political conflict has in the case of Israel been valued to 0.6, i.e. in accordance with the categorisation *Evidence of more than five peaceful strikes, rallies, or demonstrations*. In establishing this value, a qualitative examination of Israel’s water policy was carried out. Most data derive from the much encompassing academic work of *Water Policy in Israel Context, Issues and Options* (2013) by Becker (ed.). In the book, the chapter written by Spiritos and Lipchin (2013) reviews the privatisation project of desalination plants based on a *build–operate–own* contract type. The authors point to the fact that the price increase of water in connection to the privatisation project has generated civil protests in Israel (Ibid., 117). Due to its peaceful nature, the large protests, encompassing a quarter of a million protesters, still only generated a relative low value of 0.6. This information is supported by news articles which points to the fact that “young people, retired couples and families marched” (Kershner, 2011; Spiritos – Lipchin, 2013: 116), and that no article mentions riots, violence, or

injuries (Associated Press 2011). A similar codification and considerations has been given to each of the 36 variables of the four cases. In Appendix 1, the material collected to these variables as well as the specific considerations of each nominated value are presented.

## 5.2 Results – with fuzzy set qualitative comparative analysis

In the figure below the results are presented, after each variable have been codified and processed through Compass.

Causal pathways/recipes (graphically):



*Solution coverage: 0.642857*  
*Solution consistency: 0.946429*

The figure illustrates the consistency and coverage of the presumed causal pathway (see chapter 4 for a more detailed conceptualisation of consistency and coverage). According to the above results, we can with certainty (limited to the variables included in this study) conclude a consistency of 94 percent and a coverage of 64 percent of the presented causal pathways. When processed through Compass, these causal combinations appear to explain conflict in the cases presented.

While all cases and their recipes presented in the figure (Yemen, Israel and Gaza Strip) meet the consistency threshold (80 percent consistency), Jordan (as a “negative case” with low level of conflict) did not, since it did not produce a recipe that met the consistency threshold, thereof not included in the figure. In the Gaza Strip, *legal conflict* together with *international financial institution involvement* indicates a causal pathway; i.e. these variables, in combination, explain political conflict. In Israel and Yemen, *economic impact on households* are included in a causal pathway generating conflict. However, in relation to Yemen, *economic impact on households* explains political conflict in combination with *non-competitive bidding*. In contrast, *economic impact on households* in combination with *contract type* explain political conflict in Israel.

However, while the results provided by the fs/QCA present the analysis with causal combinations, they present simplified results and lack more comprehensive explanations to why these pathways differ between the cases. The second step of this analysis involves a more comprehensive analysis with a *comparative contextual analysis*, where contextual factors of human-water relations within the concept of the “post-state hydraulic paradigm” will be included and analysed in relation to the above results.

### 5.3 Results – with comparative contextual analysis

In this section, the results provided in the fs/QCA will be contextualised in relation to the concept of the “post-state hydraulic paradigm”, focusing on *unequal access*, *ecological fix* and *water related fears*. The figure below illustrates a case overview followed by the comparative contextual analysis, where a contextualisation of each case is presented.

*Case details and overview*

| State     | Year | Contract type       | Area                 |
|-----------|------|---------------------|----------------------|
| Palestine | 1997 | Management contract | Gaza Strip           |
| Jordan    | 1999 | Management contract | Greater Amman        |
| Yemen     | 2002 | Commercialisation   | Yemen                |
| Israel    | 2005 | Build–operate–own   | Israel, desalination |

#### 5.3.1 Yemen & Israel

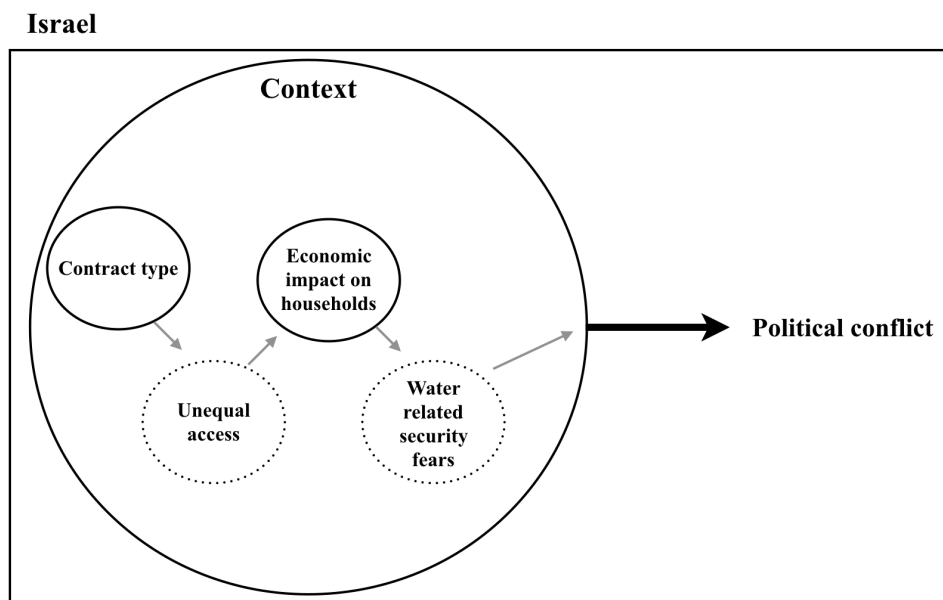
According to the results provided by the fs/QCA, Yemen and Israel, present a similar causal pathway, where *economic impact on households* is included as a causal variable. However, in the case of Yemen, this variable is presented in combination with *non-competitive bidding*, and in the case of Israel this variable is presented in combination with *contract-type*.

In relation to *economic impact on households*, the privatisation projects in both Yemen and Israel have generated increased costs on water prices. Market mechanisms for competitive prices have failed in both cases, where local elites (Yemen) or private companies (Israel) have taken over the provision of the major part of the water allocation (Sahooly, 2003: 141; Spiritos – Lipchin, 2013: 117). However, while this might explain the importance of *economic impact on households*, a more comprehensive approach is needed to explain the differences in causal combinations between Israel and Yemen.

##### 5.3.1.1. Israel – desalination plant

In 1959, Israel wrote in its constitution: “The water resources of the State are public property, subject to the control of the state and destined for the needs of the

inhabitants and development of the country” (*Section 1, Water Law 5719-1959*, in Spiritos – Lipchin, 2013 :117). Even though such a state-centric approach has been branded into the Israeli constitution, in 2005, the private company Global Environmental Solutions Ltd (GES) began a privatisation project of water management in the region, called Ashkelon desalination plant. In 2013, 25 percent of Israel’s drinking water came from this privatisation project (RO Legislative Council Secretariat, 2015: 3; Kislev, 2011: 13). With a seven-year drought in Israel, the government decided to ask manufactures to increase their production in the Ashkelon desalination plant. Thus, the *contract type* reflected high levels of autonomy and responsibility for the privatisation project, and low levels of autonomy and responsibility for the state. As a result, the price on water increased with 6-7 percent. A long tradition of maintaining low water prices in Israel was broken, and this, in turn, came to severely affect the consumers (Spiritos – Lipchin, 2013 :117). This explains the *significant economic impact on households*. While these variables evidently were of great importance in the Israeli case, they do not explain this causal combination and the linkage to political conflict. When involving the concepts of *water security-related fears* and *unequal access* in the analysis, it becomes clear that increased water prices (generating an unequal access between rich and poor) and lack of local control over water and a securitisation<sup>1</sup> of water (as a result of higher levels of autonomy for the privatisation project in addition to increased water prices), have had influential impact on the outcome. In 2011, about 250,000-270,000 public protesters were marching the streets in Israel to protest against the privatisation of water management (Feitelson, 2013: 26-27; Kershner, 2011; Associated Press, 2011).



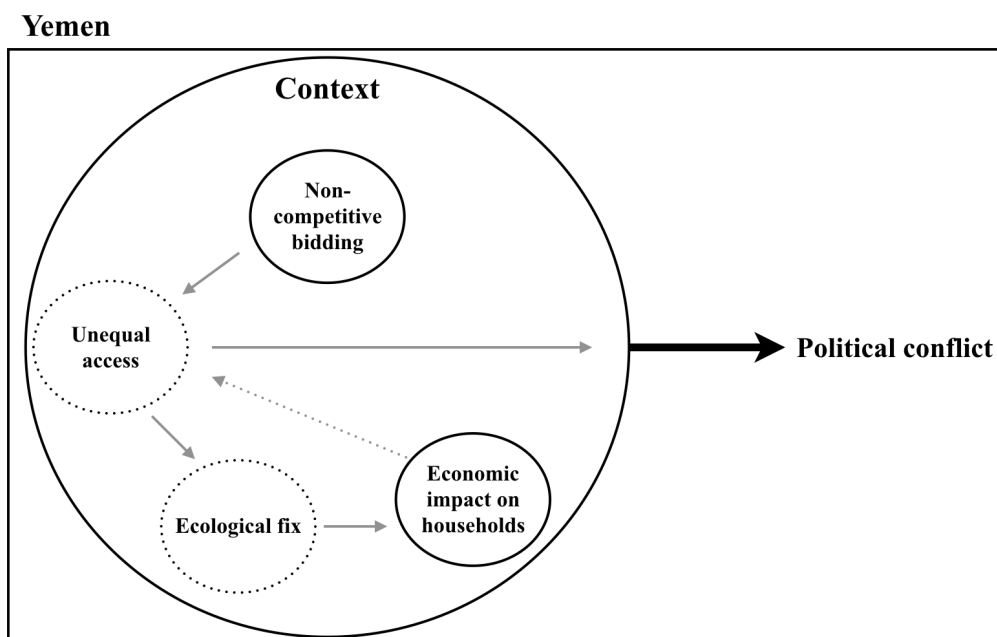

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<sup>1</sup> *Securitisation* refers to the process in which a subject is made into matters of security, similar to the process of politicisation but tend to generate more extreme measures and consequences. The term was first coined by the influential scholars Buzan, Weaver and de Wilde (1998: 25). Even though this concept is not included in the theoretical framework of this study, it relates to the idea of Bakker’s *water security-related fears* and is central to the understanding of this factor. This is why securitisation is included in this study’s analysis.

### 5.3.1.2. The Yemen case of decentralising the water sector

“I see unlicensed drilling rigs as mobile artillery batteries, and the tankers that distribute the groundwater as missiles landing in every neighbourhood” (Ferguson, 2015). This quote reflects the effect of Yemen’s decentralisation and communal arrangements in the twenty-first century. The decentralisation of water management in Yemen, which started in 2000, has led to the fact that 95 percent of the urban population’s water resources is now (since 2011) provisioned by autonomous private water companies (Mewes, 2011: 159-160; Sahooly, 2003: 151). Hence, a small political elite has provided a small group of commercialising actors access to ground water, which in turn have generated a complete lack of competitive bidding. This has generated a price increase on water, with decreasing access to groundwater for the rest of the public. We see how both *non-competitive bidding* and *significant economic impact on households* are important elements in the privatisation of water management. However, it is also important to note that, while these features are evidently important in the privatisation of water management in Yemen, they are connected to an *unequal access* where a small elite have greater access to water than the rest of the public. In addition, with diminished governmental supervision of the access to ground water, the small elite of commercialising actors are benefitting from an ecological fix; the private company “tries to minimize his personal loss at the expense of the common resource” (Yemen farmer in Moore 2000: 45). These features have clearly been influential in generating a violent conflict over water, involving tribes destroying their neighbours water infrastructure (ECC, 2018a; World Bank 1994, iii, Moore 2011: 45).

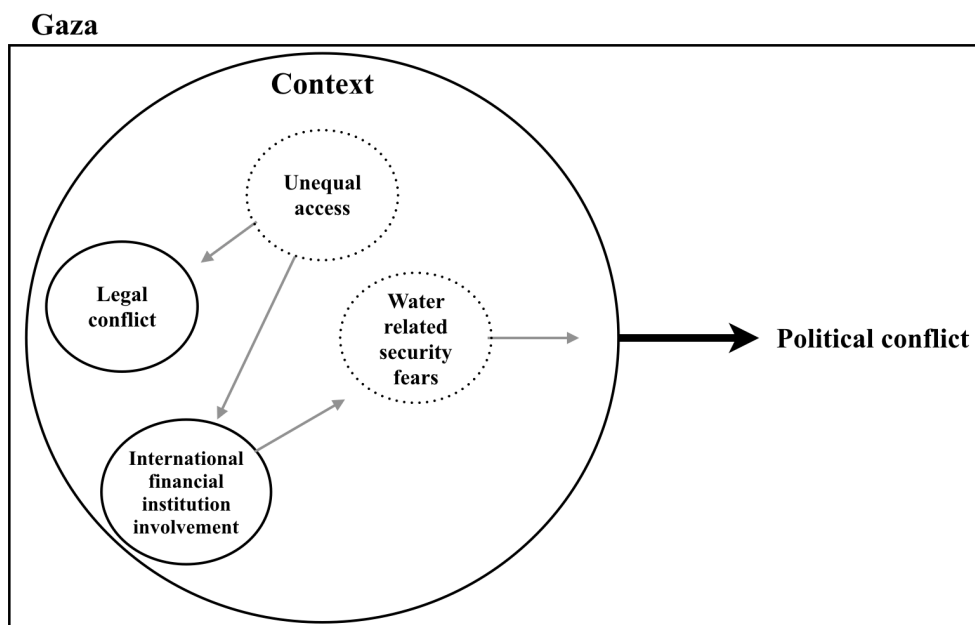
In short, the privatisation project in Yemen, characterising a decentralisation of the water sector, has evidently given rise to the political conflict in the region - in combination with an ecological fix and an unequal access.



### 5.3.2 Palestine – the Gaza Strip

In 1997, a privatisation project was established between the Palestinian authority and a French private company called Suez Lyonnaise des Eaux. The privatisation project was part of and made possible via the Oslo Accords and supported by the World Bank. It involved a set of benchmarks and performance rating system, which were established as incentives to enhance investments and efficiency (Saghir - Sherwood – Macoun, 1999: 3). While this project was agreed upon by both partners, the benchmarks and performance rating system made the privatisation actors to prioritise some issues, which yielded higher performance payment, than other “softer” issues – such as training and public relations (Ibid: 4). This prioritisation generated more profits for the company but was based on unequal access, where the private company was “cherry picking” which areas and which issues to focus on, based on what would generate more profit and higher performance rating. Evidently generating *unequal access*. Around the turn of the millennium, the privatisation project was ended due to inside legal conflicts over these issues (Hall - Bayliss - Lobina, 2002: 25).

In late 2000 and the outburst of the al-Aqsa Intifada, violent uprisings targeting the unsatisfactory implementation of the Oslo Accords spread out in the Palestinian territories, to enhance the autonomy of the Palestinian Authority. While the significant *international financial institution involvement* and *legal conflict* evidently played a role in the reduced Palestinian autonomy, their connection to the outburst of the political conflict is not that clear. By involving the features of *unequal access* and *water security-related fears* to this analysis, which is clearly connected to the privatisation project and especially to the reduced Palestinian control over its scarce water resources, this causal combination can be understood in more detail.



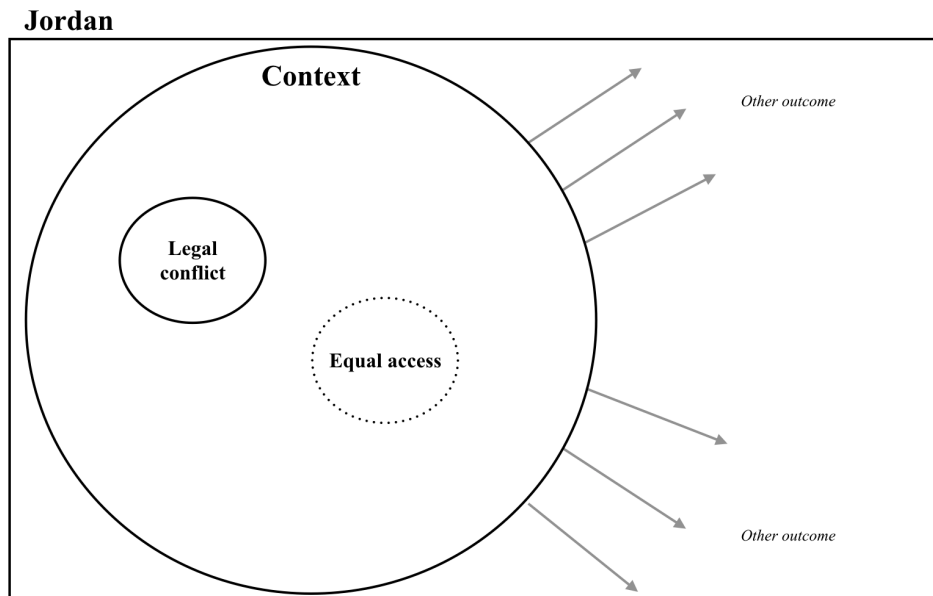
### 5.3.3 Jordan – Greater Amman

Jordan (focusing on the Greater Amman region) was selected as a “negative” case to this study. Jordan demonstrates a low (or insignificant) level of political conflict, and as a result, when processed through a fs/QCA analysis, a causal pathway between political conflict and the privatisation project elements was not found. There could be several reasons why the privatisation project; the management contract via the private company Suez Environmental, did not generate a political conflict.

One of the more distinctive characteristics of the contemporary water supply system in Greater Amman is its rationing system, where households have received water once a week since 1987. The population of Greater Amman has learned to adapt to the extreme water scarcity in the region this way; where water is stored once a week either in large water tanks or provisional plastic barrels (Potter – Darmame, 2009: 121). The privatisation project via Suez Environmental was introduced in 1999 and managed the prevention of “lost” water, upgrading the water networks as well as improvements in billing and debt collection (Potter - Darmame – Nortcliff, 2007: 5300). The privatisation Suez Environmental introduced a proposal of an “around the clock service”, which would introduce the privatisation project with more profit and enhance employment possibilities. However, this new proposal would also generate an *ecological fix*, where commercialising forces would have to provide more water in an area with widespread water scarcity, hence potentially drain the existing water supplies. In January 2007, the privatisation project of water management in Greater Amman was terminated and effectively “deprivatised”, placed in the hands of a local state-owned company called Meyahona (“Our Water” in English) (Potter – Darmame, 2009: 116).

When examining the raw data, it becomes evident that Jordan, in contrast to the other cases, demonstrates a significant higher level of *legal conflict* (0.8). The *ecological fix* introduced by the private company is evidently connected to the legal conflict between local authorities and the private company. *Water security-related fears* might also be involved and explain this inside tension; where a potential drain of water supplies has generated a fear to be deprived of the most vital life source. Consequently, the Ministry of Water and Irrigation (MWI) are now reluctant to allocate risks to the private sector and has continued with the efficient rationing system of water, though, now controlled by local authorities (Potter – Darmame, 2009: 116).





## 5.4 Comparing Israel, Yemen, Gaza & Jordan

The fs/QCA and the qualitative comparative analysis illustrates that political conflict emerges in all cases except Jordan. With the cases included in this study *unequal access* has been prevalent in all cases showing conflict, (e.g. the Gaza Strip, Yemen, and Israel). However, in Jordan, where no substantial political conflict emerges, the rationing water network has provided *equal access* to almost all citizens. Hence, a trend can be concluded when applying a contextual perspective; evidently *unequal access* is a critical factor when studying the causal combination of which factors explain political conflict. This general observation is resonating with the prior-research stating importance of scarcity and uneven distribution of resources (e.g. Hauge – Ellingsen, 1998).

## 6 Conclusions

With reference to the findings of this study, it can be concluded that the causal pathways differ between cases in the Middle-East; where different combinations of different project elements of privatisation of water management can explain political conflict. The different causal pathways put together involve: (*significant economic impact on households; legal conflict; contract type; non-competitive bidding* together with *unequal access, ecological fix and water related security fears*). However, one factor is prominent in all cases analysed; *unequal access*, or in the case of Jordan where no political conflict has occurred; *equal access*. This suggests that unequal access, in combination with several other contextual factors and project elements of privatisation of water management, can explain political conflict. It is important to note that this study's findings are based on the assumption that the quantitative and qualitative material is correctly coded and limited to the variables included (excluding other potential variables and causal pathways).

The aim of this study has been to fill in the gap of earlier research on privatisation of water management. This has been done by developing a two-step analysis, incorporating critical perspectives to previous research, and applying this to the Middle-East, where such research in this area is still missing. While these findings were made possible through the complex methodological tools of a *fuzzy set qualitative comparative analysis* and a *contextual comparative analysis*, and a combination of Boudet et al. and Bakker's research, there are several limitations to the adoption of these frameworks that became apparent throughout the analysing process. While Bakker's framework contributes with the critical contextual perspective and contextual factors, she does not determine the nature of these so-called factors and how they are to be applied to a qualitative analysis. In line with the findings in this study, *unequal access* is perceived a particularly important aspect when analysing privatisation, water, and conflict. However, this "aspect" or "factor" is not explained as an independent variable. According to this study's findings, future scholars are invited to conceptualise unequal access as an independent variable; to further examine its importance as "causative".

Concerning the selected variables, as has already been concluded in the second chapter on previous research, there is not yet a consensus on what variables can explain or cause conflict. This study is limited to the variables conceptualised by Bakker and Boudet et al. included in their framework, thus, excluding other potential variables. According to the findings in this study, there are some independent variables that are more evidently excluded from the analysis and that might be viewed as important to understand the conflictual trajectory of the specific case studies, namely: (1) drought and (2) prior violent conflicts.

(1) In the case of Israel, the seven-year drought have evidently played a part in the water security-related fears in relation to the privatisation of water management,

and has likely played a part in the other cases as well. Future scholars are invited to incorporate and examine this variable in relation to the framework produced in this study. The implementation of drought as an additional variable could increase the understanding of the causal combination of the other variables.

(2) This study has tried to involve an understanding of the local regulations in regard to water, however, excluding a historical perspective of the specific cases. Prior levels of conflict might affect the social and cultural stigmatisation against violence. This aspect might be interpreted as critical when comparing Yemen with more intense fighting over water and the peaceful demonstrations in Israel. Hence, a data-set measuring the frequency or history of conflict could be critical to understand the level of violence. In addition, a heritage of earlier conflicts regarding water might also be critical to understand the rise of conflict.

Within this field of research, there is a need for a combination of both quantitative and qualitative studies (with critical connotations). Despite the fact that some important variables and factors are excluded from this study, the data gathering on privatisation of water in the Middle-East and the codification of this material as well as the critical addition to the analysis will hopefully fill the research gap in this area. Such contributions could be critical to understand interstate conflict and cooperation over water. In accordance with this study's findings, water can be concluded to play a vital role in the ongoing conflicts in the Middle-East and will most likely continue to do so in the future. With rising insecurities and notorious humanitarian crises, more focus is needed on the domestic level. Combining a critical contextual and an instrumental perspective could help to understand this, and in the long run perhaps prevent conflicts.

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## 8 Appendix 1.

This section is summarising the sources and considerations for the qualitative data used in the codification for the fs/QCA.

|   |   |
|---|---|
| <b>Israel</b>                                   | <i>Nominated value given from established categories based on qualitative research and sources and context specific argumentation for the given value</i> |
| Political conflict                              | 0.6 Not including the conflict with the Palestinians regarding water. (Feitelson 2013: 26-27; Kislev 2011: 51; Kershner 2011; Associated Press 2011).     |
| Legal conflict                                  | 0.4 (Feitelson 2013: 25, 30-31)   |
| Proactive consultation                          | 0.0 (Feitelson 2013: 25)  |
| International financial institution involvement | 0.0 (Spiritos – Lipchin 2013: 114-115)  |
| Host country equity                             | 1.0 (Spiritos – Lipchin 2013:115)   |
| Size  | 1.0 (Spiritos – Lipchin 2013: 115; Kislev 2011: 9)  |
| Contract type                                   | 1.0 BOO-contract Ashkelon Desalination Plant, began construction in 2003 and was put into operation in 2005 (Spiritos – Lipchin 2013: 117; Kislev 2011)   |
| Competitive bidding                             | 0.8 (Spiritos – Lipchin 2013: 117)  |
| Economic impact on households                   | 1.0 Coincided with a seven-year drought (Spiritos – Lipchin 2013 :117)  |

|   |   |
|---|---|
| <b>Yemen</b>                                    | <i>Nominated value given from established categories based on qualitative research and sources and context specific argumentation for the given value</i>     |
| Political conflict                              | 1.0 (Moore 2011: 45; ECC 2018a).  |
| Legal conflict                                  | 0.2 (Mewes 2011: 151; ECC 2018b).   |
| Proactive consultation                          | 0.6 (Sahooly 2003: 139).  |
| International financial institution involvement | 0.6 Primarily the World Bank lenders in Germany and the Netherlands (Moore 2011: 43; Sahooly 2003: 139).  |
| Host country equity                             | 0.0 Small between the elite and government (Mewes 2011: 123; Sahooly 2003: 141; Ward 2009: 235-236).  |
| Size  | 0.0 Political reform, relative small investment through decentralisation of the autonomy (Mewes 2011: 55-56; UNCDF 2008: 21).                                 |
| Contract type                                   | 0.67 Communal arrangements and decentralisation executive, and regulatory functions (Mewes 2011: 22, 54, 85-90, 125, 128; Moore 2011: 44; Sahooly 2003: 139). |
| Competitive bidding                             | 0.8 Interest of private elites (Moore 2011: 45; Mewes 2011: 159-160; Sahooly 2003: 151).  |
| Economic impact on households                   | 0.8 (Beh – Alameer 2013: 1383-1384; Moore 2011: 41).  |

|   |  |
|---|--|
| <b>The Gaza Strip, Palestinian territory</b>    | <i>Nominated value given from established categories based on qualitative research and sources and context specific argumentation for the given value.</i> |
| Political conflict                              | 0.8 The conflict included is explicitly relating to the water management changes (Saghir - Sherwood – Macoun 1999: 2).                                     |
| Legal conflict                                  | 0.6. The conflict included is explicitly relating to the water management changes (Saghir - Sherwood – Macoun 1999: 2; Hall - Bayliss - Lobina, 2002: 25). |
| Proactive consultation                          | 0.0 (Saghir - Sherwood – Macoun 1999: 1; Ghuraiza – Enshassi 2004: 1095)   |
| International financial institution involvement | 1.0 (Saghir - Sherwood – Macoun 1999: 2; Clarno 2008: 171-172).  |
| Host country equity                             | 0.4 (Enshassi -Al-Najjar - Kumaraswamy 2009: 126-127)  |
| Size  | 0.6. (Saghir - Sherwood – Macoun 1999: 3)  |
| Contract type                                   | 0.33. Management contract (Saghir - Sherwood – Macoun 1999: 1; Cowen - Cowen 1998: 28).  |
| Competitive bidding                             | 0.0 (Saghir - Sherwood – Macoun 1999: 1).  |
| Economic impact on households                   | 0.4. (Al-Ghuraiza, Enshassi: 2004: 1999-2000).   |

|   |  |
|---|--|
| <b>Jordan, greater Amman</b>                    | <i>Nominated value given from established categories based on qualitative research and sources and context specific argumentation for the given value.</i>           |
| Political conflict                              | 0.2 (The World Bank 2008: 75).   |
| Legal conflict                                  | 0.8 (The World Bank 2008: 75; Potter – Darmame 2009: 116; Potter - Darmame – Nortcliff 2010: 5301).  |
| Proactive consultation                          | 0.6 (Suleiman 2002: 44; Al-Jayyousi 2010: 199).  |
| International financial institution involvement | 1.0 (Suleiman 2002: 22; Suleiman - Well - Gustafson 2008: 54-55).  |
| Host country equity                             | 0.0 Greater Amman <i>select</i> stakeholders by Suez Environmental (Suleiman 2002: 20, 22; Al-Jayyousi 2010: 199-200; Potter - Darmame – Nortcliff 2010: 5300-5301). |
| Size  | 0.6 (The World Bank 2008: 75; Potter - Darmame – Nortcliff 2010: 5300; the World Bank group 2001: 9)   |
| Contract type                                   | 0.33 Management contract (Suleiman 2002: 16; Al-Jayyousi 2010: 199-200).   |
| Competitive bidding                             | 0.8 Opportunistic bidding for foothold in the region (Suleiman 2002: 44 Gerlach - Franceys 2009: 338-339).   |
| Economic impact on households                   | 0.6 (Potter – Darmame 2010: 123; Potter - Darmame – Nortcliff 2010: 5300-5301).  |