

# Water-using corporations as agents of water security, management and governance

Exploring cases from stewardship initiatives in South Africa to global  
networks of power

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Suvi Sojamo

# Water-using corporations as agents of water security, management and governance

Exploring cases from stewardship initiatives in  
South Africa to global networks of power

**Suvi Sojamo**

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This dissertation explores the largest water-using corporations as agents of water security, management and governance. An analytical framework is constructed to investigate different forms of corporate power and strategies, their drivers and legitimacy to engage on water. The framework is applied to, and tested with, three case studies: 1) corporations dominating the water-intensive global agro-food value chains and networks, 2) corporations engaging in the development of corporate water stewardship principles and practices, and 3) corporations engaging in corporate water stewardship initiatives and projects in South Africa.

The corporations studied are found to have remarkable power to change water management and governance processes with implications for water security from global to local level. The corporations dominating the agro-food value chains and networks are identified to be part of a global 'virtual water hegemony', and corporations engaging in the development of the corporate water stewardship principles and practices to be contributing to an emerging transnational water governance regime. Predominantly driven by water scarcity, stakeholder pressure and public sector failure to act as the custodian of water resources, the corporations are shown to have become increasingly active and proactive in their water engagement strategies and tactics. Legitimacy of their engagement is found to be questionable, however. The corporations studied are yet to embrace water in their strategic cores. Equal participation, accountability and transparency are found to be in need of improvement in all the engagement processes in focus. Outcomes of the processes are shown to include much needed drive and resources for multistakeholder collaboration on water, but previous concerns of fragmentation, re-inventing wheels and private capture of public institutional processes and resources are also confirmed.

The findings of the dissertation show how water-using corporate engagement has become increasingly central to processes of water management and governance. If water security for all is to be reached instead of risk management for a few, however, corporate engagement demands further scrutiny and guidance. The analytical framework developed is proposed as one tool for this purpose. Policy efforts globally are recommended to be targeted towards ensuring equal participation, accountability and transparency in corporate water stewardship initiatives and broader processes of water management and governance where corporations engage.

**Keywords** water-using corporations, water security, water management and governance, value chains and networks, corporate water stewardship, corporate power, legitimacy, South Africa

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**Tekijä**

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**Väitöskirjan nimi**

Vettä käyttävät yritykset vesiturvallisuuden ja vesivarojen hallinnan vaikuttajina – tapaustutkimuksia vesivastuullisuusaloitteista Etelä-Afrikassa globaaleihin vallan verkostoihin

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Tässä väitöskirjassa tarkastellaan vettä käyttäviä yrityksiä vesiturvallisuuden ja vesivarojen hallinnan vaikuttajina. Väitöskirjassa rakennetaan analyttinen viitekehys, jonka kautta tutkitaan yritysten vallan muotoja ja strategioita, toiminnan ajureita, ja toiminnan legitimitettä. Viitekehystä testataan ja sovelletaan kolmeen tapaustutkimukseen: 1) vesi-intensiivisiä globaaleja ruoka- ja maatalousarvoketjuja – ja verkostoja hallitsevat yritykset, 2) vesivastuullisuuden periaatteiden ja käytänteiden kehittämiseen osallistuvat yritykset, ja 3) vesivastuullisuusaloitteissa ja hankkeissa Etelä-Afrikassa toimivat yritykset.

Väitöskirjan tulokset osoittavat tutkituilla yrityksillä olevan huomattavasti vaikutusvaltaa vesivarojen hallinnan prosesseihin ja vesiturvallisuuteen globaalilta paikalliselle tasolle. Vesi-intensiivisiä ruoka- ja maatalousarvoketjuja- ja verkostoja hallitsevien yritysten tunnustetaan olevan osa globaalia 'virtuaaliveden hegemoniaa', ja vesivastuullisuuden periaatteita ja käytänteitä kehittävien yritysten kontribuoineen ylikansallisen vesivarojen hallinnan regiimin syntyyn. Veden niukkuuden, sidosryhmien paineen ja julkisen sektorin paikoittaisen epäonnistumisen vesivarojen hoitajana osoitetaan erityisesti vaikuttaneen yritysten aktiivisempaan ja proaktiivisempaan toimintaan vesivarojen hallinnassa. Yritysten toimijuuden legitimitetistä löydetään kuitenkin puutteita. Yksikään tutkituista yrityksistä ei ole vielä sisäistänyt veden kokonaisvaltaisesti kestävää käyttöä osaksi liiketoimintansa strategista ydintä. Myös sidosryhmien tasapuolisessa osallistumisessa eri hallinnan prosesseihin ja prosessien vastuullisuudessa ja läpinäkyvyydessä havaitaan puutteita. Yritysten proaktiivisen toiminnan osoitetaan johtaneen osallistavan vesivarojen hallinnan aktivoitumiseen ja parempaan resurssointiin, mutta tulokset vahvistavat myös aiemmat huolet hallinnan pirstaloitumisesta ja prosessien ja resurssien yksityisen kaappauksen uhasta.

Väitöskirjan tulokset osoittavat vettä käyttävien yritysten roolin tulleen keskeiseksi vesivarojen hallinnassa. Yleisen vesiturvallisuuden takaamiseksi yksityisen riskienhallinnan sijaan yritysten toimintaa täytyy kuitenkin tarkastella kriittisesti ja ohjata, mihin väitöskirjassa kehitetyn analyttisen viitekehysten ehdotetaan tarjoavan välineen. Vesipolitiikan globaaliksi tavoitteeksi suositellaan sidosryhmien tasapuolisen osallistumisen, vastuullisuuden ja läpinäkyvyyden takaamista niin yritysten vesivastuullisuushankkeissa kuin laajemmassa vesivarojen hallinnassa, mihin yritykset vaikuttavat.

**Avainsanat** vettä käyttävät yritykset, vesiturvallisuus, vesivarojen hallinta, arvoketjut- ja verkostot, yritysten vesivastuullisuus, yritysten valta, legitimitetti, Etelä-Afrikka

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## PREFACE

In spring 2010, I approached Professor Tony Allan at King's College London regarding interesting Master's thesis topics. Tony immediately responded that I should look into the role the world's largest agribusiness corporations play in global water security. The water politics research community had come up with sophisticated theories and case studies of transboundary water interaction between states and the role of corporations in water supply and sanitation service reforms and marketisation, but hardly anyone had paid attention to the position and capacity of big water-using businesses to affect the way water resources were managed and governed. I took up the research challenge, which eventually led to continuing to PhD. However, my work has only scratched the surface of an issue better understanding of which is paramount to a fair water future.

“Water” and “corporations” is a combination of words that is easily flammable. Stronger engagement of the private sector actors including water-using corporations in sustainable development and in developing its technologies and practices is increasingly called for. Businesses that have been doing so have been criticized though of private appropriation of resources and capture of institutional processes, their engagement being feared to lead to enforcement of pre-existing power asymmetries or creating starker water inequities and injustices than ever before.

In my view research has a key role to play in throwing water to these flames. Ideologically laden simplifications and generalisations of all private sector actors and their actions as malign is naïve, but so is disregarding the various pervasive, persistent and privileged forms and workings of corporate power over water in our societies. It is important to ask, where our water challenges come from, to whom they are a risk, who can do something about them, how and why. Only with that understanding we can make well-grounded value judgments and build a present and a future that are sustainable and just.

My faith is in people who strive to tackle the pressing water issues of our times, in academia, public sector, business, NGOs and civil society alike. I hope this dissertation helps to raise awareness and inspires further explorations of the interdependencies we have regarding water and the intrinsic and instrumental value of water systems and water ecosystems to us all.



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This dissertation would not have been possible without the support and guidance of the following individuals and organisations.

Even though sustainability and justice issues related to water have been my calling from early teens onwards\*, discovering the Water and Development Research Group (WDRG) and their courses at the Helsinki University of Technology in 2007 was a revelation – it was actually possible to study and research water politics, management and governance, the coolest topic ever! Professor Olli Varis was kind enough to give me, a stubborn and overtly enthusiastic Bachelor's student, a chance to work in his group. He played also a key role in encouraging me to dare to apply for Master's studies at King's, and afterwards gave me the opportunity to return for the PhD, and to build my research project as I wanted. Olli, a huge thank you for believing in me, and supervising my PhD process. Dr. Marko Keskinen, my PhD instructor, is another key person in WDRG who has been fundamental in my growth process as a water professional, from facilitating contact to King's to understanding and sharing the wonders and worries of working in the field of water. Thank you, Marko! I am privileged to have a chance to continue working with and learning from you, and Olli too, in Winland. Special thanks goes to the rest of the current and past WDRG colleagues as well: Professor Matti Kummu, Mirja Kattelus, Mira Käkönen, Matleena Muhonen, Miina Porkka, Dr. Timo Räsänen, Dr. Mizanur Rahaman, Dr. Aura Salmivaara, Dr. Joseph Guillaume, Juho Haapala, Anne Hyvärinen, Mika Jalava, Dr. Jialiang Cai, Hafsa Munia, the Master's students who've joined us throughout these years, and the other colleagues in the Water and Environmental Engineering Research Group. Thanks for the collaboration and support and sharing the everyday joys, pains and the philosophical discussions with me in the office!

Another community of water experts and academics that has been essential to this dissertation is the London Water Research Group (LWRG). Professor Tony Allan, thank you for guiding me in my Master's studies and in choosing my PhD topic, and for opening the doors to the rooms and arenas of global water politics. You have and continue to be an amazing inspiration. Professor Jeroen Warner, thank you for your invaluable insights into the theories of water politics and governance and your kind encouragement and guidance. Dr. Martin Keulertz, it has been a pleasure to explore the world of big businesses, water and food security with you. Thank you for your collaboration and support! A big thank you goes to my other co-authors as well, Elizabeth Burlon (née Larson) and Marco Daniel. Thank you for sharing your research with me and your peer-support, it has been equally invaluable. Dr. Mark Zeitoun, thank you for welcoming me

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\* Secondary school essay "Water, the source of life". My literary skills have not improved much since.

to the UEA, your generous support and instruction. You truly helped me in the most difficult phase of this research process. Dr. Naho Mirumachi and Dr. Ana Cascão – your way of working, insight and intellect have been my guiding stars. Thank you for all those discussions and shared adventures! Same goes to the other colleagues from London, Oxford and the UEA: Dr. Marta Antonelli, Dr. Michael Gilmont, Francesca Greco, Dr. Daniel Florentin, Dr. Alex Money, Dr. Nina Hissen, Elin Langemar, Professor Bruce Lankford, Dr. Nathaniel Matthews, Musa McKee, Dr. Lucio Esposito, Dr. Tony Colman, Dr. Jessica Budds and everyone else I have had great conversations with – thank you!

Half of this dissertation process I have also had the privilege to work under the instruction and guidance of Dr. Nicholas Hepworth. Nick, thank you for welcoming me to the Water Witness (WWI) team, giving me all the amazing opportunities to experience, learn and research the world of corporate water stewardship. Your insights, ethic and vision have fundamentally shaped my thinking and work. I wouldn't be in this position without you. Thank you also to the other brilliant people I have got to meet and collaborate with while working for WWI and conducting my research in the field: Dr. Nicole Kranz, Stuart Orr, Dr. Christine Colvin, Dr. Guy Pegram, Dr. Hannah Baleta, Dr. Ken Caplan, Ruth Matthews, Dr. Dave Tickner, Dr. Ashok Chapagain, Jonathan Kampata, Jason Morrison, Mai-Lan Ha, Peter Schulte, Cate Lamb, Elspeth Donovan, Dr. Klaudia Schachtschneider, Claire Bramley, Adrian Sym, Alexis Morgan, Adrien Portafaix, Scott McCready, Janek Hermann-Friede, Robin Farrington, Sonja Berdau, Karam Singh, Charon Marais, Jochem Verberne, Manfred Matz, Peter Newborne, Nathaniel Mason. The list goes on. You have all influenced my thinking, inspired me and given hope that a more sustainable and just water future is possible. A big thank you also to my Finnish stewardship team for support: Jussi Nikula, Helena Wessman and Kirsi Usva – I am looking forward to continuing our collaboration!

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There is a group of people without whom this dissertation would not exist, but whose names I won't disclose: my informants. Thank you all of you who have dedicated time to my interviews, your contribution is highly appreciated and valued.

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the encouragement and support. You have been crucial in shaping my appreciation of nature and my social consciousness, the key drivers of my work. Antti, I am relieved we managed to stop fighting a few years back and realised it actually makes sense to have good relations to the person you share most of the years of your life with. Besides, you are brilliant and the best brother I have. My dear grandparents, godparents, grandaunts, aunts, uncles, cousins, little cousins and everyone else in the family – I am so happy to have you in my life. Thank you for all the wisdom, support and fun! My dear friends from playground, schools, Ymps, Copenhagen, London, Cape Town, Helsinki, doctoral summer schools, Kampin kuulapää, Dekadenta Kanotister, Heartful Yoga, singing lessons – thank you for exploring, wondering and visioning this life with me. Aapo, your Suvi will be available for more play and adventures now that this book is done.

Last but not least: Sampsa, thank you for bearing with me, for being my champion and for being the incredible yourself. As said, I have occasionally felt this process has made me a different person to whom I was before it began when we hadn't yet met. Don't worry. I am convinced the good stuff it has given is here to stay. Now that it's coming to an end I am looking forward to seeing what follows with you on my side with excitement, gratitude and joy.

Helsinki, 25th of May 2016

Suvi Sojamo



## LIST OF APPENDED ARTICLES

This dissertation consists of a synthesis and the following peer-reviewed scientific articles:

- Article I            **Sojamo, S.**, Keulertz, M., Warner, J. and Allan, J.A. (2012). Virtual water hegemony – the role of agribusiness in global water governance. *Water International*, 37(2):169-182.
- Article II            **Sojamo, S.** and Larson, E.A. (2012). Investigating food and agribusiness corporations as global water security, management and governance agents: the case of Nestlé, Bunge and Cargill. *Water Alternatives*, 5(3): 619-635.
- Article III           Daniel, M.A. and **Sojamo, S.** (2012). From risks to shared value? Corporate strategies in building a global water accounting and disclosure regime. *Water Alternatives*, 5(3): 636-657.
- Article IV            **Sojamo, S.** (2015). Unlocking the “prisoner’s dilemma” of corporate water stewardship in South Africa—exploring corporate power and legitimacy of engagement in water management and governance. *Sustainability*, 7:6893-6918.

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## CONTRIBUTION OF THE AUTHOR

- Article I The author was responsible for coordinating the article writing process. The original idea to investigate the world's largest agribusiness corporations, virtual water flows and global water security came from Professor Tony Allan, who also provided overall comments to the article. The author contributed sections on agribusiness corporate power, virtual water, global water security and governance, and the case study of the "ABCD" corporations. Dr. Martin Keulertz contributed sections on the world food system and global political economy dynamics and the case study on inward investment in land and water in Africa. Professor Jeroen Warner contributed sections on security governance and hydropolitics. The virtual water hegemony framework, discussion and conclusions were jointly developed by the author, Dr. Keulertz and Professor Warner.
- Article II The author was responsible for coordinating the article writing process. The idea to investigate the corporations in focus as global water security, management and governance agents was originally hers. She contributed the introduction section, sections of the analytical framework on corporate agency and power in global value chain, agro-food and environmental governance, the related data and analysis in the case studies, and the methodology. Ms. Elizabeth Burlon (né Larson) contributed the section on stakeholder interaction and corporate social responsibility to the analytical framework, and the related data and analysis in the case studies. The discussion and conclusions were jointly developed by the author and Ms. Burlon.
- Article III The author advised Marco Daniel in his MSc dissertation work the article is based on and assisted in writing up the article. Mr. Daniel contributed the introduction section, the analytical framework, the research hypotheses and the methodology, and collected and analysed the data. The discussion and conclusions were jointly developed by Mr. Daniel and the author.
- Article IV The author is fully responsible for the article and the analysis presented in it.



# 1. INTRODUCTION

## 1.1. Research setting

As water is essential to the survival, well-being and development of all forms of life, the question of hydropolitics – *who gets water, how and why* – has concerned societies throughout the human history. During the past decades, however, it has risen unprecedentedly high on diverse agendas all over the world.

Competition over freshwater resources is heightening globally as water demand is growing due to population growth and changing consumption patterns, but the supply is becoming increasingly limited (Vörösmarty, Green et al. 2000, Kummu, Ward et al. 2010, Hoekstra and Mekonnen 2012, UNWWAP 2012). According to recent estimates, four billion people live in basins which face severe water scarcity annually (Mekonnen and Hoekstra 2016). In some of those basins water consumption is excessive, leading to unsustainable disturbance of environmental flows; in others the water resources available per capita are not sufficient to support the basic needs and livelihoods of people. Even in basins where resources are available, access to water is often limited by political and socio-economic factors and inadequate infrastructure: e.g. in 2015, 663 million people still lacked access to improved drinking water source and 2.4 billion to improved sanitation (UNICEF and World Health Organisation 2015). Water quality is deteriorating because of pollution and over-abstraction which has also led to biodiversity loss, with freshwater ecosystems being affected the worst out of the different ecosystem types (Pittock, Hansen et al. 2008, Vörösmarty, McIntyre et al. 2010, McLellan, Iyengar et al. 2014). As an amplifying factor to all the previous challenges, hydrological systems are the main medium through which the most drastic impacts of climate change are felt (Vörösmarty, Green et al. 2000, Grafton, Pittock et al. 2013, Haddeland, Heinke et al. 2014, Pachauri, Allen et al. 2014).

In the World Economic Forum Global Risks Reports water crises have been ranked in top three by their impact to the stability of societies and economies globally in 2012-2016, and in 2016 water was ranked as the highest long term risk (World Economic Forum 2016). Water has become a key topic of interest to all sectors of society after decades of awareness raising and promotion of cross-sectoral and integrated approaches and water policies by the international water community (see e.g. Global Water Partnership 2012, UNWWAP 2014, GIZ 2015). This does not mean that the policies promoted would have been altogether successful, however. Arguably, due to the complexity and political nature of water as a resource, the water crises from global to local level continue to be ‘crises of management and governance’ (UNWWAP 2006, Araral and Wang 2013, Gupta, Pahl-Wostl et al. 2013).

This dissertation argues that in order to tackle the global challenge for **water security** (Bakker 2012, Bigas 2013, Lankford, Bakker et al. 2013), understanding of

**water management** (use, development, distribution and allocation of water resources) (Global Water Partnership 2010, UNWWAP 2012) and **governance** (organisational and institutional processes and arrangements considering water management covering a variety of stakeholders) (Biermann, Betsill et al. 2010, Merrey and Cook 2012, Pahl-Wostl, Conca et al. 2013, UNDP Water Governance Facility 2015) *beyond the water sector* needs to be improved. The contemporary water resources literature discusses in detail all the three themes and how they should be best developed in practice. Nevertheless, it has not paid sufficient attention to the actor networks and architectures embedded in the broader structures of the global political economy: notably, the **water-intensive value chains and networks** (Gereffi, Humphrey et al. 2005, Gibbon, Bair et al. 2008, Allan, Keulertz et al. 2015), where virtual water ‘flows’ embedded in commodities (Allan 1998, Hoekstra and Hung 2002, Allan 2003).

The water-intensive value chains and networks fall largely under the remit of the private sector. As agriculture is responsible for 69% and industries for 19 % of global water withdrawals (FAO 2016a) and agriculture for 92% and industries for 4.4.% of global water consumption (Hoekstra and Mekonnen 2012), private sector actors use and consume the most water globally. Moreover, they also make important decisions on who gets water, where, how and why; directly and indirectly, intentionally and unintentionally (Hoekstra 2010, Allan 2011).

The study looks for private sector actors who have **power**, i.e. position and capacity (Lukes 2005), to affect water management and governance processes and their water security outcomes and investigates their **strategies** (Levy and Newell 2002, Levy and Scully 2007); their **drivers** (Bansal and Roth 2000, Walker, Di Sisto et al. 2008, Kranz 2011, Methner 2013); and evaluates their **legitimacy**, i.e. justification for their authority (Bodansky 1999) to engage. In other words, the study explores their **agency** on water (Pattberg and Stripple 2008, Biermann, Betsill et al. 2010, Dellas, Pattberg et al. 2011). It focuses on the actors that despite their major share of water use globally have been invisible in the academic debates until recently: the largest **water-using corporations**<sup>1</sup>. They include leading transnational enterprises and national private sector giants, ranging from primary producers in agriculture and extractive industries to traders, industrial manufacturers and retailers (Hoekstra and Mekonnen 2012, Allan, Keulertz et al. 2015, FAO 2016a).

A growing number of companies have during the recent years woken up to their dependency on limited but shared water resources, the resulting water risks to business, and the need to manage those risks (CDP 2015). **Corporate water stewardship** has become the buzzword of the most progressive ones. Its central tenet is that corporations cannot manage their water risks alone, but need to engage in beyond-the-fence line activities in collaboration with other water users in their value chains and basins where they operate (CEO Water Mandate 2012a). As Hepworth (2012) observes, corporate

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<sup>1</sup> *Corporation* in this dissertation is used as a synonym for a company, firm, business or an enterprise to cover a variety of profit-seeking organisations with different operational and legal models in different sizes that operate in the private sector in contrast to public sector or the civil society, in one or several countries (see also Lambooy 2011, Černič 2011). *Multinational corporations* (MNCs) or enterprises, or preferably *transnational corporations* (TNCs) or enterprises to emphasise the increasingly unattached relation of the corporation to certain states, are considered as entities controlling assets abroad (UNCTAD 2013). In addition, *parastatals* are fully or partly state owned entities, whose operational logic nevertheless resembles that of private sector.

water stewardship has been received with divided sentiments, however. Proactive corporate engagement on water has been welcomed by proponents of multi-actor water management and governance (Pahl-Wostl, Conca et al. 2013, Vörösmarty, Hoekstra et al. 2015), but also criticised for ‘blue-washing’ and deemed as private appropriation of common pool and public good water resources (Hall and Lobina 2012, Mehta, Veldwisch et al. 2012, Franco, Mehta et al. 2013, Bakker 2014). In the absence of clear principles and evidence from the ground, its actual meaning has been difficult to evaluate (Hepworth 2012, Hepworth and Orr 2013). Moreover, how the corporate engagement in the name of stewardship compares to the actual scale of impact of water-using corporate activities on water throughout their value chains and networks has largely been neglected in the stewardship agenda to date.

Investigations and elaborations on what kind of role the largest water-using corporations have had in the causes to global and local water challenges and can and should play in the solutions to global water security as actors of water management and governance have been few to date. This dissertation is among the first academic attempts to tackle this research problem and to fill a critical research gap.

## **1.2. Research aims, objectives and questions**

The aims of this dissertation are first, to improve understanding of the agency of the largest water-using corporations in water security, management and governance at different scales and settings, and second, to contribute towards developing the practice of water-using corporate engagement on water for sustainable and just outcomes.

The objectives of the dissertation are to:

- 1) construct an analytical framework for investigating water-using corporate agency in water security, management and governance
- 2) test and apply the framework to real life case studies representing different scales and settings of water-using corporate engagement on water
- 3) come up with recommendations for practice and further research of water-using corporate engagement on water

The overarching research question of the dissertation is:

**RQ:** *What is the agency of the largest water-using corporations in water security, management and governance?*

The interrelated sub-questions are:

**SQ1:** *How do the largest water-using corporations affect water security, management and governance? What is their power, i.e. position and capacity, and what are their strategies to engage?*

**SQ2:** *Why do the largest water-using corporations engage on water security and in water management and governance? What are their drivers?*

**SQ3:** *When and to what extent is the engagement of the largest water-using corporations on water security and in water management and governance justified? What is their legitimacy?*

The dissertation approaches these research questions both from analytical and empirical

perspective. When it comes to the former, the dissertation seeks to answer what explains the nature of water-using corporate agency, and their power, strategies, drivers and legitimacy thereof. When it comes to the latter, the dissertation explores how those concepts and their associated theory materialise in the cases studied.

### **1.3. Research process**

By its ontology and epistemology, this dissertation presents critical realism (e.g. Sayer 2000, Bhaskar 2014), which understands the meanings of social life to be “formed through the play of difference within the [social] network” (Sayer 2000:36), whilst still not ruling out causal explanations such as material changes in the natural environment. The epistemology can further be characterised to present hermeneutic and interpretative inquiry, an adaptive theory approach (Layder 1998) applying abductive, inductive and deductive reasoning in an iterative manner. The dissertation follows critical and action theories tradition (Bryman 2012), participating in normative discussion about the social world and emphasising the emancipatory potential of science.

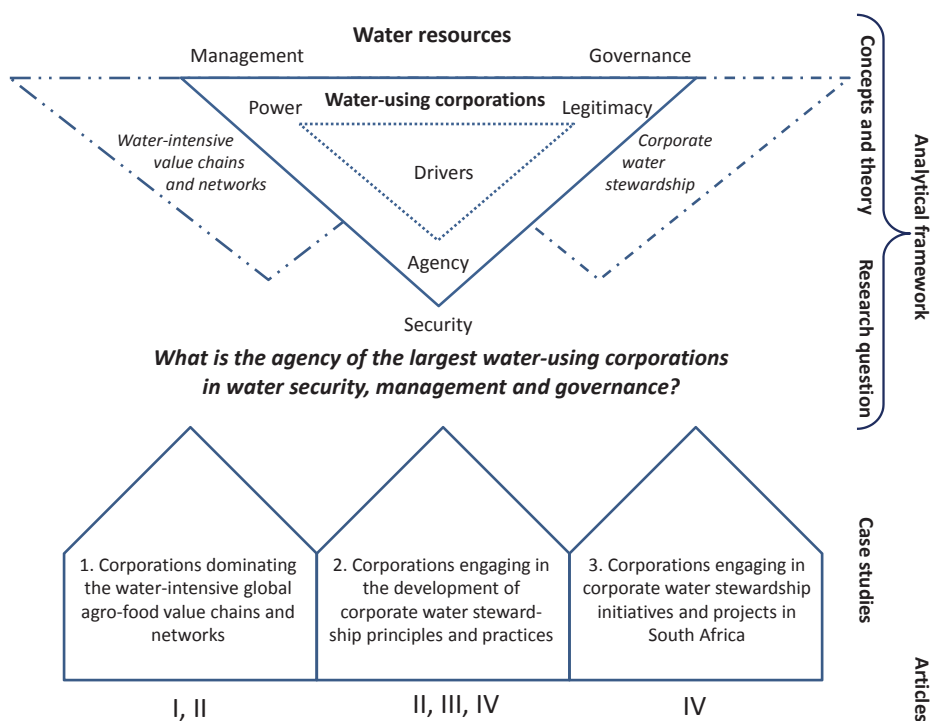
Due to the novelty and complexity of water-using corporations as a research topic in the context of water security, management and governance and in order to reach a holistic understanding of it, the dissertation is necessarily interdisciplinary by its conceptual and theoretical framing (Klein 1990). Though building on environmental and engineering sciences, the dissertation predominantly draws from the diverse literature of social and political sciences with a focus or applicability to water and corporations. It borrows from politics, political economy, human and political geography, global governance studies, law, value chain and network studies, management and business studies and CSR. Besides adding to their canons, the dissertation contributes to the still emerging field of hydro- or water politics.

Concepts and theories of water security, management and governance, water-intensive value chains and networks, and corporate water stewardship set the normative and contextual frame for the research. Concepts and theories of corporate agency, power, drivers and legitimacy set the research variables to be explored. Together with the specific research questions, they form the analytical framework of the dissertation. The analytical framework is tested with and applied to and recommendations are derived from real life case studies representing different scales and settings of water-using corporate engagement on water (Figure 1).

Because of the novelty and complexity, and resultantly interdisciplinary nature of the research topic, an explorative and later on an explanatory case study design (Yin 2013) with mixed qualitative data gathering and analysis methods (Bryman 2012) is applied. The dissertation also possesses a transdisciplinary dimension (Klein, Grossenbacher-Mansuy et al. 2012), as its design and findings have been informed by experts of the developing practice of water-using corporate engagement on water and by participating observation in its processes by the author herself.

The main case of the dissertation is the agency of the largest water-using corporations in water security, management and governance answering the overarching research question, continuously compared and contrasted to three embedded case studies investigating the sub-questions. The first embedded case study investigates the corporations dominating the water-intensive global agro-food value chains and

networks – the so called “ABCD” of transnational agribusiness (Case 1). The second embedded case study looks at the leading transnational corporations engaging in the development of corporate water stewardship principles and practices (i.e. water accounting and disclosure, risk management and collective action) (Case 2). The third covers lead corporations from water-intensive sectors who are engaging in corporate water stewardship initiatives in South Africa (Case 3). The embedded cases present representative and critical cases for the overarching analysis (Bryman 2012, Yin 2013), extending from corporate engagement in resource and governance challenged local and national settings to transnational water governance arrangements and global value chains and networks. The embedded cases are reported in four appended Articles as described in Figure 1.



**Figure 1.** Elements of the research process.

#### 1.4. Dissertation structure

The dissertation consists of a synthesis (Chapters 1-7) and four appended Articles. The content of the synthesis chapters are as follows. This Chapter 1 sets the scene and scope for the study. The following Chapter 2 builds the framework for analysis: it defines the highlighted key concepts and the associated theory setting the normative and contextual frame for the research and the research variables to be explored, and develops the specific research questions with their associated variables into an analytical framework to be tested and applied. Chapter 3 presents the case study research design, the embedded case studies and positioning of the case studies and the Articles on the analytical



framework. Chapter 4 describes the data gathering and analysis materials and methods applied. Chapter 5 presents the research findings by sub-research question and their variables, referencing the embedded case studies and Articles, and summarises them for the overarching research question. Chapter 6 discusses the theoretical and practical implications of the findings as outlined in the research objectives, and compares the results to those reported in related recent studies. Limitations of the research and way forward are also reflected on. Finally, Chapter 7 summarises the key messages and outputs of the dissertation.

## 2. ANALYTICAL FRAMEWORK

This Chapter 2 defines the key concepts of the research and their associated theory. Concepts and theories of water security, water management and governance, water-intensive value chains and networks, and corporate water stewardship, which set the normative and contextual frame for the research, are first described in 2.1. Concepts and theories of corporate agency, power, drivers and legitimacy described in the following section 2.2 provide variables to be investigated in the analysis. In 2.3 they are further elaborated into dependent and independent variables, and together with the normative and contextual frame developed into the specific research questions and analytical framework of the dissertation.

### 2.1. Key concepts and associated theory: normative and contextual frame

#### 2.1.1. Water security

Water security has emerged as a central concept in academic and policy debates on water during the past fifteen years. Its definitions have broadened from those focusing on specific human security issues (e.g. military, food, and to some extent environmental security) in the 1990s to a plethora of more integrative ones from early 2000s onwards (notably Global Water Partnership 2000, the Hague Ministerial Declaration 2000, Grey and Sadoff 2007). Its framings have evolved around water availability, water related hazards, vulnerability and management of risks, human needs, and broader sustainability (Cook and Bakker 2012, Grey, Garrick et al. 2013, Hall and Borgomeo 2013). For the purpose of consolidating the UN agenda for the Sustainable Development Goals, UN-Water proposed in 2013 to define water security across scales as

*“[t]he capacity of a population to safeguard sustainable access to adequate quantities of and acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability”*

Bigas 2013 p.1.

Problematically, the definitions by the UN and others have become so all-encompassing that water security is at risk of diluting to another ‘nirvana concept’: aims of which no one opposes, but implementation of which everyone can understand differently, risking stalling progress or opening a door for capture for narrow interests (Molle 2008). Nevertheless, it is still deemed here a valid concept to guide the practice and analysis of water resources, as it draws together a constellation of arguably universal normative principles (environmental sustainability, human well-being, collaboration necessitated

by system interdependency, common but differentiated responsibility, equity and justice) (see also Zeitoun, Lankford et al. 2013). However, its operationalisation demands scrutiny.

*Water security: a normative aim of water management and governance and an evolving political discourse*

In principle water security for some –be that humans or the environment– cannot be achieved at the expense of insecurity for others, as it would undermine the very core of water security due to its interdependent nature. In practice, however, the security discourse and actions in its name do also resemble ‘securitisation’ of resources (Buzan, Wæver et al. 1998), when water issues become e.g. issues of national sovereignty and threats (Warner 2004, Zala 2013), risks to short-term driven and shareholder profit seeking corporations (Hepworth and Orr 2013) or when security is to be achieved with ‘efficiency’ and ‘productivity’ defined by high-tech engineering approaches and Western development discourses imposed on the ‘underdeveloped’ South (Boelens and Vos 2012, Clement 2013, Grey, Garrick et al. 2013, Lankford, Bakker et al. 2013). Zeitoun, Lankford et al. (2013) argue that collective security for all uses at all times is not achievable, but inevitably includes trade-offs. Accordingly, aiming for water security is a process of constant re-negotiation.

Due to the familiarity of the language of risks to the business and the general commodification of security in the modern ‘risk society’ (Beck 1992, Krahmman 2008), water security has arguably captured corporate attention like no other water and development concept before. It has gained traction as it poses direct obstacles to the corporate business-as-usual and is increasingly leading to concrete disruption (Allan, Keulertz et al. 2015). Private sector actors are also actively participating in water security discourse building themselves (see e.g. 2030 Water Resources Group 2009, Waughray 2011, CDP 2015, World Economic Forum 2016). Therefore, water security is in this dissertation understood both as a prevailing normative aim of water management and governance, definitions of which will follow, but also as an evolving and at times contested political discourse (Fischhendler 2015).

### **2.1.2. Water management and governance**

Water management is seen in this dissertation as a variety of activities including e.g. planning, assessment, operation, monitoring and evaluation, finance, communication, stakeholder engagement and conflict resolution, which are undertaken by public, private or civil society organisations with different roles and responsibilities involved in the use, development, distribution or allocation of freshwater resources (Global Water Partnership 2010, UNWWAP 2012). Water management is not only an operational level technical issue, but has also strategic and tactical dimensions (Keskinen 2010).

Water governance is seen as a broader, dynamic social phenomenon, a process of interaction and decision making among organisations with certain roles and responsibilities, interest and power on water and its management. Organisations and their interaction in the governance process are defined by diverse institutions. Institutions constitute of values, norms, principles, rules, traditions and customs, and the instruments through which they materialise (e.g. legislation, regulation, policies,

strategies) (after Biermann, Betsill et al. 2010, Merrey and Cook 2012, Pahl-Wostl, Conca et al. 2013, UNDP Water Governance Facility 2015). In other words, institutions are the ‘rules of the game of the society’ (North 1990, Ostrom 1990), which emerge and evolve reflecting prevailing environmental conditions, power relations and social consciousness.

In this analysis, water management and governance are approached as inherently political issues and as observable, interrelated and critical phenomena. Importantly, though the concepts of water management and governance most often hold utilitarian connotations (Postel 2008, Groenfeldt and Schmidt 2013), they are here seen as neither normative nor prescriptive *per se*, but as phenomena that social actors engage in intentionally or unintentionally, directly and indirectly, their ethic and meaning forming in relation to the environment and stakeholders. Accordingly, architectures of “non-water” governance systems and areas of “non-governance” (Biermann, Betsill et al. 2010) are also considered relevant to the given water management and governance aims and outcomes, here to water security.

*Crisis of water management and governance: an issue of complexity and scale*

Like other common pool resources, water can in theory be sustainably shared and it may also act as a catalyst of broader cooperation and peace when there is a detailed understanding of the resource dynamics and stakeholder interaction, and commonly agreed institutional frameworks that are perceived legitimate, fair and effective by all involved (Ostrom and Field 1999). For this purpose water has in most parts of the world been defined as a public good and governments have been appointed as the custodians of water resources. Public sector governance has to some extent succeeded in providing safe water supply and sanitation to the world’s population (Bakker 2014, UNICEF and World Health Organisation 2015). From the broader water resources management perspective examples of ‘good’ water management and governance are rare, however, especially when the resources are constrained (for a review, see e.g. Hepworth, Hooper et al. 2013 and Araral and Wang 2013). For the past ten years, water management and governance globally have been described to be in a state of crisis (UNWWAP 2006, Araral and Wang 2013, Gupta, Pahl-Wostl et al. 2013, World Economic Forum 2016).

It is argued that the key influencing factors behind the crisis are issues of complexity and scale (Gupta and Pahl-Wostl 2013, Gupta, Pahl-Wostl et al. 2013). When complexity and scale of management and governance systems grow, as they do in the globally interdependent world, chains of causality and relations of representation and responsibility get blurred. This leads to intentional and unintentional free-riding as unsustainable and unjust behaviour goes unpenalised (Ostrom 1990).

The prevailing water management and governance approach promoted by the United Nations and the development agencies the past decades, Integrated Water Resources Management (IWRM), has despite its bold aims of promoting cross-sectoral integration and multi-actor participation (Global Water Partnership 2012) been blamed to have failed to tackle these issues. IWRM has been criticised for being too water sector centric; a nirvana concept blind to politics and power asymmetries and therefore prone to capture and suiting for narrow interests; Western imposed; and building on old problematic state institutions and ‘one-size-fits-all’ models (Wester and Warner 2002, Biswas 2004, Molle 2008, Keskinen 2010). Water management and governance approaches grasping

the issues of complexity and scale beyond the water sector have thus been increasingly called for.

#### *Water management and governance beyond the water sector*

A growing body of literature discusses multilevel, multi-actor, polycentric and adaptive water management and governance (Wester and Warner 2002, Allan 2005, Warner 2007, Huitema, Mostert et al. 2009, Hoekstra 2010, Ostrom 2010, Gupta, Pahl-Wostl et al. 2013, Pahl-Wostl, Conca et al. 2013, Hering, Sedlak et al. 2015, Vörösmarty, Hoekstra et al. 2015). On the one hand, it reflects a general trend of liberalisation of governance, failure and retreat of the state in the globalised world (Strange 1996, Börzel and Risse 2010, Araral and Wang 2013, Naim 2014), which in the case of water is evident in the “delegation to non-state actors, combined with devolution and sharing [of] decision making” (Bakker 2014:485). On the other hand, the realisation of water as a complex phenomenon with multiple interdependencies has also led to framing water not as a “sector”, but as an issue cross-cutting socio-ecological systems (UNWWAP 2012). It is epitomised in the nexus-approach, which calls for cross-sectoral responsibility on water to reach water security (notably Waughray 2011, GIZ 2015). Actors and architectures of these new water management and governance arrangements are still rarely tackled comprehensively, however.

One of the central tenets of this dissertation is that even though the organisations and formal institutional frameworks for water management and governance are often patchy, struggle with their delivery, or are only emerging, this does not mean non-existence of political interaction and policy making on water (Cleaver 2002, Hajer and Versteeg 2005, Merrey and Cook 2012). Moreover, it is emphasised that water resources are to a remarkable extent managed and governed in the sectors using water. This thinking is analogous to the cross-sectoral, multi-actor, polycentric and nexus approaches described above. They are taken one step further, however, by broadening the focus to the dynamics, actor networks and architectures of the governance systems in the water-using sectors, where authority extends beyond or is independent from public or international organisations (for a similar approach, see e.g. Biermann, Betsill et al. 2010 and Newell, Pattberg et al. 2012 for Earth System Governance, and Allan, Keulertz et al. 2015 for water-food-energy nexus). Furthermore, it is argued that in those transnational systems it is not only the overt, direct, intentional and proactive forms of water-using corporate engagement on water that matter, which are discussed more in detail in the section 2.1.4 on corporate water stewardship. Indirect and unintentional corporate action and even inactivity have a role to play as well.

#### **2.1.3. Water-intensive value chains and networks**

Global political economy has arguably become the dominant shaping force of societies and the environment alongside industrialisation and globalisation. Its contemporary governance form and dynamics are here captured in the concepts of value chains and networks (Henderson, Dicken et al. 2002, Gereffi, Humphrey et al. 2005, Gibbon, Bair et al. 2008, Bair 2009). Value chains and networks are the organisational and institutional governance structures of production and trade. The structures influence the behaviour of the value chain members and their broader network of stakeholders with certain outcomes, but powerful members, notably ‘lead firms’ (Gereffi and Korzeniewicz 1994)

or lead corporations, also influence the structural dynamics of the chains and networks<sup>2</sup>. The lead firms, most often transnational corporations, have become important political actors in the global political economy, partly filling the institutional vacuum left by retreating states, partly contributing to that retreating process themselves (Strange 1996, Sklair 2002, Barley 2007, Scherer and Palazzo 2011). Hence, their value chains and networks have become transnational architectures of the global governance system (Gibbon, Bair et al. 2008). In water-intensive sectors, value chains and networks are thus structures of water management and governance, and the actors in them are also actors on water, as will be next illustrated by the example of the agro-food sector.

#### *Agro-food value chains and networks as structures of water management and governance*

Agriculture is responsible for 69% of water withdrawals (FAO 2016a) and 92% of consumptive water use globally (Hoekstra and Mekonnen 2012). An international virtual water 'flow' equivalent of 26% of the total global water consumption by its volume is embedded in the international trade of water-intensive products. It consists largely of agricultural products as 76% of it is related to trade in crop commodities such as cotton, soybean, wheat, cocoa, coffee, palm oil, maize, rice and sugar<sup>3</sup>, and 12% is related to trade in livestock products, majority of which is related to trade in beef cattle products (Hoekstra and Mekonnen 2012)<sup>4</sup>. Even though only some 16% of the global agricultural output is traded internationally (FAO 2016b), the importance of food trade for global food supply has grown during the past 50 years (Porkka, Kummur et al. 2013). What is noteworthy in agricultural production, regarding the international virtual water flows, and agricultural trade and food supply alike is that a corporate dominated global agro-food system has emerged after the Second World War that influences agricultural production frameworks, trade patterns, market dynamics and consumption throughout the world (McMichael 2005, Clapp and Fuchs 2009, McMichael 2009, Murphy, Burch et al. 2012). This has in effect led to privatisation of food security, but the decisions in the corporate dominated system also affect the way water resources are used, managed and governed from local to global level, ultimately affecting also water security.

At the beginning of agro-food value chains, farmers are major water managers as the water footprint of even processed agricultural produce largely consists of on farm water use (Allan 2011, Mekonnen and Hoekstra 2011, Mekonnen and Hoekstra 2012). In principle, their management choices affect water resources via withdrawals, consumption and discharge that are generally public sector and government regulated (Lambooy 2011). Whether those regulations are adequate and enforced is another matter, however, as the public organisations struggle with fulfilling their mandates throughout the world as previously described. It is therefore the complex and dynamic

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<sup>2</sup> Global value chain and network research stems from world-systems theory tradition and global commodity chain analysis, and it shares commonalities with global production networks research. All the different strands are presented in the contemporary literature, without consensus on their distinctions (Bair 2009). Value chains and networks in their described understanding are adopted here due to their broadest scope of covering corporate-global governance dynamics in contrast to the other related approaches listed, without taking stances on their differences in detailed theoretical nuances.

<sup>3</sup> In an order of magnitude.

<sup>4</sup> The remaining 12% is related to trade in industrial products (Hoekstra and Mekonnen 2012).

structures of the agro-food value chains and networks – including a variety of actors such as farmers’ organisations, corporations, consumers and governmental and non-governmental organisations from associated fields– that influence the management and governance standard setting (Henderson, Dicken et al. 2002, Sexsmith and Potts 2009). Furthermore, the global value chains and networks are highly concentrated and consolidated, meaning that a few lead corporations such as seed and agricultural chemical producers, commodity traders, food and beverage companies and retailers with close ties to political and economic elites around the world are able to exert their power both up- and downstream along the chain and the networks (Heffernan, Hendrickson et al. 1999, Gereffi, Humphrey et al. 2005, Hendrickson and Heffernan 2007, Gibbon, Bair et al. 2008, Clapp and Fuchs 2009, Clapp 2015).

Until recently, the lead corporations have mostly been Western conglomerates (Lawrence 2011, Murphy, Burch et al. 2012). Sparked by commodity price spikes, collapse of financial markets and growing water and food insecurity, they have been challenged, however, on the one hand by investors gambling with land with water resources, on the other by new commodity giants and parastatals from Asia and the Gulf countries aggressively investing also in thus far non-commercialised regions (Allan, Keulertz et al. 2012, Mehta, Veldwisch et al. 2012, Keulertz and Woertz 2015). Even though the players and arenas are changing, the global agro-food system nevertheless continues to be corporate dominated, and due to the water-intensity of the system, the agro-food corporations stand out as important actors of water security, management and governance.

#### *Dynamics of value chain and network governance*

Simply put, an actor can affect the dynamics of value chain and network governance by forcing other actors to comply with their strategy or by themselves refusing to adapt to others’ needs. The largest corporations are able to enjoy both points of leverage as they are the crucial links between other chain and network actors and have the capacity to move from one operation location and value chain to another (Kaplinsky and Morris 2002, Kahler 2009, Money 2014). Furthermore, due to their resources and room for manoeuvre they are well capacitated and positioned to dictate the rules of the game affecting all (Clapp and Fuchs 2009), as will be described more in detail in section 2.2.2 on corporate power. Essentially, concentration and consolidation of corporate power throughout sectors highlight the actors that should be the focus of the value chain and network analysis, pinpointing the ones whose actions need to be changed if different outcomes are to emerge (Sturgeon 2009).

Resultantly, analyses of water-using corporations as agents of water have to take in account the broader picture of their value chain and network dynamics. Through them they are able to affect their own and others’ water security, management and governance in various ways, regardless of the level of their awareness, intention or activity. As their awareness, intention and activity grow, this dissertation argues that broader value chain and network dynamics continue to underlie the intentional and proactive forms of corporate engagement on water such as corporate water stewardship, which will be described next.

#### 2.1.4. Corporate water stewardship

Corporate engagement on water has in recent years aroused increasing scholarly attention among the CSR and business studies research community, but they generally fail to give due account to the complexity of water as a resource and the varied roles corporations play on it (Kurland and Zell 2010, Martinez 2015). Corporate water stewardship has emerged as a central corporate water engagement concept during the past seven years or so, but instead of business theory, it originates from the raising corporate awareness of water and the need of NGOs and public sector to tap into private sector resources when solving water challenges (Orr and Pegram 2014). It has gained traction to the extent it has been described to become a new water management and governance paradigm (Hepworth and Orr 2013), reflecting the general paradigm shift in the global development agenda emphasising private sector participation (Schulpen and Gibbon 2002, Dunning and Fortanier 2007, United Nations 2015). The theory and practice of stewardship are still evolving, but it has nevertheless occupied a central position in the water field with a growing number of corporations, investors, NGOs and development agencies subscribing to it.

Alliance for Water Stewardship, a multi-stakeholder organisation hosting the International Water Stewardship Standard, defines stewardship as

*“the use of water that is socially equitable, environmentally sustainable and economically beneficial, achieved through a stakeholder-inclusive process that involves site- and catchment-based actions”*

Alliance for Water Stewardship 2014 p.4.

WWF, one of the key promoters of stewardship, sees it as

*“a progression of increased improvement of water use and a reduction in the water-related impacts of internal and value chain operations. More importantly, it is a commitment to the sustainable management of shared water resources in the public interest through collective action with other businesses, governments, NGOs and communities.”*

WWF 2013 p.1.

In sum, the corporate water stewardship approach<sup>5</sup> advocates for proactive and collaborative corporate engagement in water management and governance to reach water security for all (Hepworth and Orr 2013).

##### *Business case for corporate water stewardship*

The business case for stewardship is argued to be based on the shared water challenges with other stakeholders and the resulting corporate water risks and opportunities, which necessitate collective action (Schulte, Orr et al. 2014). Corporate water risks are generally classified to physical/operational (related to water quantity and quality), reputational/

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<sup>5</sup> In general terms, stewardship is an ethic of rights and responsibilities related to the use and management of resources. Stewardship in the context of natural environment has various meanings, but according to Lange and Shephard (2014) common to them all is the emphasis on the needs of the environment as a prerequisite for human life. Stewardship practices are considered to extend further than legal regulatory duties and to be dictated by social norms. In business studies, stewardship is associated with utilitarian and even altruistic management approaches for the benefit of an organisation and its stakeholders (e.g. Miller and Breton Miller 2006; Davis et al. 2010).



stakeholder risk (underlying license to operate), regulatory/political (due to too lax and patchy or tightening regulation) and litigation risks (as a result of actual or perceived breaches of law), the risks materialising in varying intensity at different stages of the corporate value chains and networks (after Morikawa, Morrison et al. 2009, Barton 2010, DEG and WWF-International 2012, Signori and Bodino 2013). Conversely, providing solutions to water problems, responding to stakeholder demand and regulation may also provide incentives for increased corporate engagement on water (CEO Water Mandate 2012a). These opportunities are frequently framed via the concept of ‘creating shared value’ (CSV) – corporations tapping into business opportunities while simultaneously solving societal challenges (Porter and Kramer 2011).<sup>6</sup>

As noted, corporate awareness of water issues is on a rise: though water crises have not yet been ranked by business executives of highest global concern for doing business in the World Economic Forum Global Risks Reports, they have been ranked in the top three by their impact to the stability of societies and economies in the 2012-2016 editions and as the highest long-term risk in the 2016 edition, whereas prior to 2012 water did not feature in the top 10 at all (World Economic Forum 2016). The number of signatories and respondents to the CDP corporate water disclosure questionnaire has also grown, with four times more institutional investors joining CDP in 2015 compared to 2010, and the number of responding companies growing from 150 in 2010 to 1226 in 2015 (CDP 2015).

#### *Current practice of corporate water stewardship*

Corporate water stewardship approach is operationalised in corporate water management, covering not only in-house improvements, but also proactive engagement along value chains and the broader water management and governance processes in the basins and countries where the corporations operate. Box 1 describes the current guideline practice of corporate water stewardship. Furthermore, the corporations are themselves participating in the global stewardship agenda and institution building. They are members of a plethora of multi-stakeholder organisations listed in Table 1 – the organisations at times competing against, but increasingly complementing each other– who are involved in the development of stewardship principles and practices. The water stewardship standards are also developed to be compatible with other ISEAL-sustainability standards such as those for specific crop commodities like palm oil and soy, avoiding overlap but providing a broader focus on water issues compared to the other standards by covering water risk management and catchment governance concerns, instead of only limited water use and discharge considerations (Alliance for Water Stewardship 2014).

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<sup>6</sup> Orr and Sarni (2015) point out, however, that the definitions and practical applications of CSV to date have not specified what the ‘shared value’ is and how it is to be measured; they have focused on internal efficiency disregarding the meaning of broader governance settings and corporate interaction within them; and advocated for market-based approaches despite the evidence on their failure on water and the need of public regulation. Orr and Sarni (2015) call for further integration of CSV with stewardship thinking emphasising the need for collective action in public interest.

**Table 1.** Multi-stakeholder organisations involved in the development of corporate water stewardship principles and practices.

<b>Institutional function</b>	<b>Organisation</b>	<b>Members</b>	<b>Reference*</b>
Umbrella organisations	<b>UN Global Compact CEO Water Mandate</b>	The Pacific Institute; endorsing corporations; strategic government, UN agency, consulting company and NGO partners	<a href="http://ceowatermandate.org/join-us/endorsing-companies/">ceowatermandate.org/join-us/endorsing-companies/</a> <a href="http://ceowatermandate.org/join-us/strategic-partners/">ceowatermandate.org/join-us/strategic-partners/</a>
	<b>World Economic Forum Water Initiative</b>	World Economic Forum (WEF); WEF constituent corporations; governmental organisations, development and multilateral agencies	<a href="http://www.weforum.org/content/pages/world-economic-forum-water-initiative">www.weforum.org/content/pages/world-economic-forum-water-initiative</a>
	<b>World Business Council for Sustainable Development (WBCSD)</b>	Leadership and Working Group corporations; business councils; UN, NGO and research institute partners	<a href="http://www.wbcsd.org/work-program/sector-projects/water/overview.aspx">www.wbcsd.org/work-program/sector-projects/water/overview.aspx</a> <a href="http://www.wbcsd.org/work-program/sector-projects/water/waterpartnerships.aspx">www.wbcsd.org/work-program/sector-projects/water/waterpartnerships.aspx</a>
Partnership initiatives	<b>2030 Water Resources Group</b>	Multilateral and bilateral agencies, corporations, civil society organisations/NGOs	<a href="http://www.2030wrg.org/who-we-are/partners/">www.2030wrg.org/who-we-are/partners/</a>
	<b>International Water Stewardship Programme (IWaSP)</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (German Technical Development Cooperation), UK Department for International Development (DfID); national ministries, corporations, NGOs	<a href="http://www.giz.de/en/worldwide/27890.html">www.giz.de/en/worldwide/27890.html</a>
Industry roundtables	<b>Beverage Industry Environmental Roundtable (BIER)</b>	Beverage corporations	<a href="http://www.bieroundtable.com/#!members/con8">www.bieroundtable.com/#!members/con8</a>
	<b>Sustainable Agriculture Initiative Platform (SAI)</b>	Food, beverage and agribusiness corporations	<a href="http://www.saiplatform.org/join-saiplatform/members">www.saiplatform.org/join-saiplatform/members</a>
Water footprint standards	<b>Water Footprint Network</b>	Research institutes, NGOs, corporations, development and multilateral agencies	<a href="http://waterfootprint.org/en/about-us/network/">waterfootprint.org/en/about-us/network/</a>
	<b>ISO-14046 &amp; ISO-14073 (2016) Water Footprint</b>	Consulting companies, corporations, research institutes, NGOs	<a href="http://www.iso.org/iso/home/standards_development/who-develops-iso-standards.htm">www.iso.org/iso/home/standards_development/who-develops-iso-standards.htm</a>

**Table 1.** Multi-stakeholder organisations involved in the development of corporate water stewardship principles and practices [cont.].

<b>Institutional function</b>	<b>Organisation</b>	<b>Members</b>	<b>Reference*</b>
Risk assessment and management tools	<b>WWF Water Risk Filter</b>	WWF-International (NGO), KFW DEG (German Investment and Development Corporation)	<a href="http://waterriskfilter.panda.org/">waterriskfilter.panda.org/</a>
	<b>WBCSD Water Tools</b>	WBCSD, Ceres, GEMI; corporations	<a href="http://www.wbcsd.org/work-program/sector-projects/water.aspx">www.wbcsd.org/work-program/sector-projects/water.aspx</a>
	<b>World Resources Institute (WRI) Aqueduct</b>	WRI, CDP Water Program, Pacific Institute, Water Footprint Network, WBCSD; research institutes, corporations, consulting companies, governmental organisations	<a href="http://www.wri.org/our-work/project/aqueduct/partners">www.wri.org/our-work/project/aqueduct/partners</a>
	<b>Ceres Aqua Gauge</b>	Ceres, WBCSD; investors, corporations, NGOs	<a href="http://www.ceres.org/issues/water/corporate-water-stewardship/aqua-gauge">www.ceres.org/issues/water/corporate-water-stewardship/aqua-gauge</a>
Water stewardship standards	<b>Alliance for Water Stewardship (AWS) International Water Stewardship Standard</b>	AWS, Global Water Roundtable; European Water Partnership, Water Footprint Network, Pacific Institute, CDP Water Program, UN Global Compact CEO Water Mandate; corporations, NGOs, research institutes, river basin organisations, UN agencies, standardisation organisations	<a href="http://allianceforwaterstewardship.org/about-aws.html#water-roundtable">allianceforwaterstewardship.org/about-aws.html#water-roundtable</a>  <a href="http://allianceforwaterstewardship.org/about-aws.html#founding-partners">allianceforwaterstewardship.org/about-aws.html#founding-partners</a>
	<b>European Water Stewardship Standard</b>	European Water Partnership; AWS, CDP Water Program; corporations, consulting and certification companies, NGOs, research institutes	<a href="http://www.ewp.eu/activities/ews/who-we-are/members-and-partners/">www.ewp.eu/activities/ews/who-we-are/members-and-partners/</a>
Water disclosure	<b>CDP Water Program</b>	CDP; investors, consulting companies	<a href="http://www.cdp.net/en-US/OurNetwork/Pages/program-partnerships.aspx#water">www.cdp.net/en-US/OurNetwork/Pages/program-partnerships.aspx#water</a>

\*Accessed on the 3rd of March 2016.

### Box 1. Current guideline practice of corporate water stewardship

Corporate water stewardship approach to corporate water management is generally advised to consist of an iterative process of **commitment; data gathering and understanding; planning; implementation; evaluation and validation; and communication and disclosure** (after Schulte, Morrison et al. 2011, Signori and Bodino 2013, Alliance for Water Stewardship 2014).

Corporate **commitment** to stewardship can be formalised e.g. by signing to the UN Global Compact CEO Water Mandate, WEF 2030 Water Resources Group or Alliance for Water Stewardship (see Table 1). **Data gathering** includes defining scope with water risks assessments (e.g. WWF Water Risk Filter, WBCSD Water Tools, WRI Aqueduct), engaging with the given catchment governance organisations, conducting stakeholder assessments, collecting water-related data for the catchment and the site in focus –including indirect water use e.g. with water footprint assessments (e.g. Water Footprint Network, ISO Water Footprint), **understanding** shared water challenges, and prioritising risks and opportunities (Alliance for Water Stewardship 2014).

In the **planning** phase the importance of stakeholder participation, especially engagement of the catchment level governance organisations and other relevant public sector authorities, is emphasised while drafting stewardship strategies and plans (CEO Water Mandate 2012a, CEO Water Mandate 2015). **Implementation** may include in-house improvements, but is generally recommended to span to ‘beyond-the-fence-line’ collective action ranging from information sharing to formal partnerships with stakeholders (CEO Water Mandate 2012a). Collective action is suggested to take its shape in delivering projects and programmes (e.g. ecosystem restoration, infrastructure development); supporting creation of new accountability mechanisms (e.g. certification schemes, regulation and policy frameworks); creating resource transfer mechanisms (funding, expertise, in-kind support or products); or in providing dialogue, learning and innovation platforms for stakeholders (CEO Water Mandate 2015).

**Evaluation and validation**, with preferably a third-party certification like Alliance for Water Stewardship International Water Stewardship Standard (Alliance for Water Stewardship 2014), is recommended to ensure adaptive learning from the processes and to increase corporate accountability. Finally, transparent and continuous **communication** is deemed crucial for the credibility of the processes as well as standardised **disclosure** e.g. via the CDP Water Program (CDP) (Table 1).

What by definition differentiates the water stewardship approach from traditional CSR-type<sup>7</sup> responses is the pressing and shared nature of water crises which require making water a core strategic priority to the firm and substantial collective action with stakeholders with common water security aims (Orr and Pegram 2014). As noted, the practice of stewardship is still only maturing, however, and often falls short of the

<sup>7</sup> As Newell and Frynas (2013 p.670) emphasise, “CSR emerged among leading firms and business schools as a public relations tool, a way to deflect criticism, engage critics and potentially capitalise on emerging business opportunities associated with doing, and being seen to be doing, good. This is a far cry, however, from constructing corporate strategies that are aligned with the pressing need to tackle [e.g.] poverty and social exclusion across the majority world.” The traditional CSR responses are largely promotional programmes: meeting minimum legal and stakeholder requirements and mainly used for marketing; compliance-driven along set responsibility regulations; or profit-driven aiming at improving the image of the corporations in the eyes of stakeholders and customers. So called institutional CSR programmes go beyond regulatory compliance and profit considerations (caring philanthropy); address social and environmental issues while creating value for shareholders (synergistic); or in their most advanced form the whole organisation tackles the given issues in holistic manner resembling a social enterprise (Pirsch, Gupta et al., 2007, van Marrewijk, 2003). The synergistic and holistic approaches are by definition most similar to that of stewardship, but without positioning the given issues such as water in the strategic core of the firm they all rather fall in practice at the other end of the CSR spectrum.

bold and commendable promises of its discourse. Despite their commitment to board participation, some of the multi-stakeholder stewardship organisations and initiatives have been criticised for exclusivity and ‘blue-washing’; leaving out critical voices, but without clear entry level requirements providing a platform of ‘smoke-and-mirrors’ for corporations to showcase themselves in a positive light regardless of their track-record or general sustainability of their field of business (Hall and Lobina 2012, Hepworth and Orr 2013, Sethi and Schepers 2014).

The exclusivity and lack of transparency of the initiatives together with the awareness of the power asymmetry between the corporations and other stakeholders has also led to warnings of corporate capture of resources –human, financial and water alike – and institutional processes especially in weak public governance settings (Hepworth 2012, Mehta, Veldwisch et al. 2012, Newborne and Mason 2012, Franco, Mehta et al. 2013, Hepworth and Orr 2013, Vos and Boelens 2014). Problematically, the business case for stewardship is often the strongest in those same settings (Kranz 2011, Hepworth 2012, Hepworth and Orr 2013).

#### *Unlocking the ‘prisoner’s dilemma’ of corporate water stewardship*

The international stewardship community has actively responded to the critique, e.g. by changing its early vocabulary of “shared water risks” (Pegram, Orr et al. 2009) to “shared water challenges” (Schulte, Orr et al. 2014) acknowledging the differences in magnitude of basin level risks to transnational corporations and e.g. to local government and communities, and by continuous guideline development with public interest aims (e.g. CEO Water Mandate 2015). The European Water Stewardship Standard (European Water Partnership 2012) and the International Water Stewardship Standard (Alliance for Water Stewardship 2014) created by an international multi-stakeholder roundtable and opened for third-party validation and certification in 2015, have also been hoped to support systematic and well-grounded implementation and to provide a more solid foundation for corporate claims.

Nevertheless, several open questions remain. Most importantly, how can the ‘prisoner’s dilemma’ of corporate water stewardship be solved in practice, i.e. how can the benefits of corporate resources and capacity to engage on water be unleashed, but institutional and resource capture as a result of corporate engagement be avoided (Hepworth and Orr 2013)? In detail, what is the justification of the private corporations engaging in the common pool – public good water resources in the first place (see also Franco, Mehta et al. 2013, Bakker 2014), and what are the conditions under which the corporations can contribute towards water security for all (see also Kranz 2011, Muller 2012, Newborne and Mason 2012, Orr and Pegram 2014, Schulte, Orr et al. 2014, Martinez 2015)? How can inclusivity and ownership of the stewardship agenda and water security of the small and medium-sized enterprises and local public sector (Baleta 2014), and vulnerable and marginalised groups (Vos and Boelens 2014) be ensured? Does the stewardship approach help to avoid the mistakes of the previous cross-sectoral and participatory models promoted, or is it just increasing fragmentation and re-inventing broken wheels (Hepworth 2012)?

As noted, this dissertation further argues that evaluation of corporate water stewardship in particular and corporate engagement on water security and in water management and governance in general requires attention to the role of the corporations

in the broader context of value chains and networks. Moreover, the analyses need to be built on actual case-studies from the ground, with a development of clear criteria against which the corporations are being assessed (Hepworth and Orr 2013).

## **2.2. Key concepts and associated theory: research variables**

### **2.2.1. Agency**

The concept of agency is used across social sciences, most often paired with or contrasted to the concept of structure as explaining and defining the constitution and dynamics of the social world. This dissertation sees agency and structures as complementary forces (Bourdieu 1977, Bourdieu 1990), the approach representing that of structuration (Giddens 1984). In other words, agency is “located in structure, but not determined by it” (Okereke, Bulkeley et al. 2009: 69) and agency may transform structure over time. The architectures of water management and governance, expanding to those of value chains and networks, are the structures in focus here, whereas corporations are the actors whose agency in them is being studied.

In detail, agency is in this dissertation seen to consist of the power of an actor to change a course of events or outcome of processes with authority (Pattberg and Stripple 2008, Biermann, Betsill et al. 2010, Dellas, Pattberg et al. 2011). Authority is not only seen to depend on a consent obtained from principals in principal-agent relationships (Kiser 1999), but its justification i.e. the legitimacy of actors on a given issue may be built by various drivers and acquired in multiple direct and indirect ways in time- and space-specific interaction (Dellas, Pattberg et al. 2011), as described in more detail in the sub-sections 2.2.2- 2.2.5 below.

Accordingly, when studying corporate agency, this dissertation explores the extent to which the largest water-using corporations have authority, i.e. power *and* legitimacy to engage on water security and in water management and governance against their drivers to engage. Agency is further seen to potentially include “agency that is unconscious about itself”(Pattberg and Stripple 2008: 374), covering also unintentional and unconscious forms of corporate power on water, notably via their broader role in value chain and network governance, as described previously and in further detail in the following sub-section.

### **2.2.2. Power**

The definition of power applied in this dissertation comes from Lukes (2005), according to whom power consists of a position and capacity of an agent, and of an exercise of that position and capacity. Hence, power structures and relations prevail regardless whether there is action or inaction, and whether the agents are conscious or unconscious about their power, i.e. whether its exercise or holding is intentional or unintentional. Besides individuals, power may be held and exercised by groups or collectives such as corporations. Besides disabling, power may also enable.

#### *Dimensions of corporate power*

A three-dimensional classification of corporate power, originally developed for corporate power in global agro-food governance, by Clapp and Fuchs (2009) based on Lukes

(2005) and Fuchs (2005, 2007) and Levy and Egan (2000) among others, is applied with additional examples derived from water and other resource management and governance literature (see Table 2). Clapp and Fuchs (Fuchs 2007, Clapp and Fuchs 2009) emphasise that the different forms of power are not as clearly differentiated in practice as in theory, but their classification is deemed useful for the purpose of this analysis.

First, *instrumental power* takes its form in the direct influence of one actor over another, and depends on actor-specific resources for lobbying, political financing, and organizational and human resources to engage. In the case of corporate engagement on water security and in water management and governance, instrumental power is evident for example in corporations' ability to drive, support or block institutional processes on water or infrastructure development as they have done e.g. in the transnational water supply and sanitation services marketization (Conca 2006) or in acquiring mining and related water rights throughout the world (Brooks, Nickum et al. 2016, Stoltenborg and Boelens 2016).

Second, *structural power* illustrates broader influence: the bargaining power of actors on societal issues supported by pre-existing material structures they control or have access to, and their capacity to set agendas and rules of the game in governance. When it comes to the former, corporations may for example control the infrastructure of water-intensive sectors and use their position in national economies as an asset in water allocation negotiations (Mehta, Veldwisch et al. 2012, Franco, Mehta et al. 2013) and dominate the markets and impose requirements and practices on value chains and networks extending beyond their direct suppliers (Gibbon, Bair et al. 2008, Sturgeon 2009, Sexsmith and Potts 2009). When it comes to the latter, the previous studies show how transnational corporations have for example played a central role in engineering global agro-food trade agreements and industry standards (Clapp and Fuchs 2009), transnational environmental and climate governance arrangements and regimes (Levy and Newell 2005, Bäckstrand 2008, Pattberg and Stripple 2008, Andonova, Betsill et al. 2009), and water supply and sanitation service reforms (Allouche and Finger 2003, Conca 2006, Budds and McGranahan 2003, Bakker 2007, Bakker 2010).

The third dimension of power, *ideational and discursive power*, is relational by its nature as it depends on how actors perceive each other, but it is often the most powerful and persistent one as through its capacity to construct knowledge and ideas it influences which societal issues and problems are considered of importance and how (Foucault 1980, Lukes 2005). Ideational and discursive power links problems and their policy options to certain values and norms and their advancement in the public debate. Accordingly, it is the form of power most closely linked to construction of legitimacy (Fuchs 2007) as also discussed in the following sub-sections.

The workings of ideational and discursive corporate power are perhaps the most evident in the debates regarding stricter international regulation vs. free markets. Some of the largest agribusiness corporations have for example participated in the debates on global water and food security positioning themselves as providers of solutions to the joint challenge calling for a freer world trade, whereas others have disregarded their role altogether and called for state responsibility (Allan, Keulertz et al. 2015). At the same time both groups have been the main beneficiaries of e.g. US subsidies, however, and dominate the global markets (Clapp 2009, 2015). Several transnational corporations

**Table 2.** Dimensions of corporate power and corporate strategies and tactics to engage on water.

<b>Dimensions of Corporate Power</b>	<b>Forms</b>	<b>Refs.</b>	<b>Example</b>	<b>Refs.</b>
Instrumental	<i>Direct influence</i>	(Clapp and Fuchs 2009)	Corporations drive, support or block institutional or infrastructure processes on water.	(Conca 2006, Brooks, Nickum et al. 2016, Stoltenborg and Boelens 2016)
	<i>Actor-specific resources: lobbying, political financing, organizational and human resources</i>			
Structural	<i>Broader influence</i>	(Clapp and Fuchs 2009)	Corporations use their position in national economies as an asset in water allocation negotiations.	(Mehta, Veldwisch et al. 2012, Franco, Mehta et al. 2013)
	<i>Bargaining power supported by pre-existing material structures</i>		Corporations dominate markets of water-intensive sectors and impose requirements and practices on value chains and networks beyond their own suppliers.	(Gibbon, Bair et al. 2008, Sturgeon 2009, Sexsmith and Potts 2009)
	<i>Agenda setting and rule-making</i>		Corporations engineer institutional frameworks on water affecting them and others.	(Allouche and Finger 2003, Conca 2006, Budds and McGranahan 2003, Bakker 2007, Bakker 2010)
Ideational and discursive	<i>Relational</i>	(Foucault 1980, Lukes 2005, Fuchs 2007, Clapp and Fuchs 2009)	Corporations frame themselves as either crucial or insignificant actors on water security.	(Allan, Keulertz et al. 2015)
	<i>Issue and problem framing</i>		Corporations frame voluntary natural resources management and governance approaches as more effective and preferred to legally binding international treaties or promote industrial agriculture and irrigation models to national frameworks.	(Clapp 2005, Boelens and Vos 2012, Ponte and Cheyns 2013, Vos and Boelens 2014)



**Table 2.** Dimensions of corporate power and corporate strategies and tactics to engage on water [cont.].

Corporate strategies	Forms	Refs.	Corporate tactics	Refs.
	<i>Resisting</i>	(Levy and Newell 2002, Levy and Newell 2005, Newell and Levy 2006, Levy and Scully 2007, Hardy and Maguire 2008, Okereke, Bulkeley et al. 2009)	Corporations oppose and deny relevance of water issues to them.	(applied from Levy and Newell 2002, Levy and Newell 2005, Newell and Levy 2006, Levy and Scully 2007, Hardy and Maguire 2008, Okereke, Bulkeley et al. 2009)
	<i>Contesting</i>		Corporations contest claims on their role and responsibility, provide and promote alternative viewpoints or highlight other issues as of importance.	
	<i>Accommodating</i>		Corporations reactively engage in technological innovation on water; organisation and institution building; and discourse creating "win-win" situation for them and stakeholders.	
	<i>Institutional entrepreneurship</i>		Corporations proactively engage in technological innovation on water; organisation and institution building; and discourse creating "win-win" situation for them and stakeholders.	

have also actively framed voluntary natural resources management and governance approaches such as sustainability standards which are built on ‘expert knowledge’ as more effective and thus preferred to regulation via legally binding international treaties (Clapp 2005, Ponte and Cheyns 2013, Vos and Boelens 2014). Others have promoted industrial agriculture and irrigation models to national frameworks (Boelens and Vos 2012). All the approaches listed most often privilege the large corporations and disfavour smaller and poor market actors especially in the developing world.

*Corporate strategies and tactics*

The definition of Lukes (2005) and classification by Clapp and Fuchs (2009) arguably provide a comprehensive framework for analysing corporate power ranging from local to global level. The framework is applicable to the traditional water management and governance institutions, organisations and interaction with them, but also to the emerging transnational arrangements and the global political economy of value chains

and networks. To further add nuance to the understanding of corporations as political actors and to unpack corporate relations to specific governance arrangements or regimes<sup>8</sup>, Levy and Newell (Levy and Newell 2002, Levy and Newell 2005, Newell and Levy 2006) provide a useful Neo-Gramscian typology of corporate strategies and tactics of *contestation*, *resistance* and *accommodation*. Corporations are in this dissertation also approached as potential 'governance actors of their own right' (Okereke, Bulkeley et al. 2009), proactive regime engineers or *institutional entrepreneurs* (Levy and Scully 2007, Hardy and Maguire 2008) (Table 2). In other words, corporations exercise their different forms power according to their different strategies and tactics.

In the Neo-Gramscian terms, to establish or retain the stability of their 'hegemonic'<sup>9</sup> position and authority in the society in the face of complex environmental and social issues such as water insecurity, corporations are increasingly forced to react applying an accommodation strategy and tactics to an existing regime or to proactively engage in institutional entrepreneurship contributing to new governance arrangements (Levy and Newell 2002, Levy and Newell 2005, Levy and Scully 2007, Hardy and Maguire 2008). Exercising their instrumental and structural power, corporations can e.g. address water scarcity with technological innovation decreasing their water risks and simultaneously benefit from access to premium markets with their more sustainable products. They can build up alliances with other stakeholders, e.g. public-private-civil society partnerships, contribute to the overall horizontal governance architecture with development of private standards and press other members of the vertical chains and networks to adopt more sustainable practices. On the ideational level corporate discourse can create win-win situation for both their business interests and those of other stakeholders influencing the whole framework for interaction. Due to the position of the largest corporations in political economies and the water-intensity of their value chains, the resisting and contesting corporate strategies and tactics are of equal relevance to governance processes and their water security outcomes, however, as well as the unintentional exercises of corporate power (Newell and Levy 2006).

As noted, the extent to which corporations are conscious, reactive or proactive and are authoritative actors, i.e. have power combined with legitimacy to engage on water, is left open to investigation in this dissertation. Previously, power asymmetry between

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<sup>8</sup> Regime, i.e. "networks of actors, routines, principles, and rules, simultaneously constituting and disciplining their subjects, constraining and enabling patterns of behavior" (Levy and Newell 2002:85) has been widely used as a concept describing loci of global governance. However, with the fragmentation and hybridization of global governance, instead of clearly identifiable and traditionally state-led international regimes, a plurality of multi-actor governance arrangements have emerged, 'regime complex' or governance 'arrangements' being deemed more appropriate concepts to describe the emerging governance architectures (e.g. Okereke, Bulkeley et al. 2009; Newell, Pattberg et al. 2012 ). Both 'private' and 'transnational governance regimes' and 'governance arrangements' are used in this dissertation, however, regime with the above mentioned definition still deemed to hold explanatory value considering the evolution and dynamics of the given governance arrangements in focus.

<sup>9</sup> As Levy and Newell put it, Gramsci's concept of hegemony refers to the "persistence of specific social and economic structures that systematically advantage certain groups. Hegemony is not dependent on coercive control by a small elite, but rather rests on coalitions and compromises that provide a measure of political and material accommodation with other groups, and on ideologies that convey a mutuality of interests"(Levy and Newell 2002:86). They continue that hegemony is neither stable nor contingent, however. Without proper rooting in the 'civil society' – the ideological arena and the main field of political struggle– governance regimes and the corporate hegemony may be contested.

corporations and other actors has been attributed to countless environmental and social injustices on water, leading to the mostly critical scholarship on their engagement to date (Hall and Lobina 2012, Hepworth 2012, Mehta, Veldwisch et al. 2012, Franco, Mehta et al. 2013, Hepworth and Orr 2013, Vos and Boelens 2014). Even though powerlessness itself can be seen as injustice (Lukes 2005), it is emphasised that corporate power is not benign or malign *per se*, however, but justification for corporate authority on a given issue, here water, depends on the corporate drivers and the criteria against which they are being evaluated.

### 2.2.3. Drivers

Drivers refer to the specific factors underlying corporate engagement on water. As listed in Table 3, drivers are in this dissertation generally classified as being either internal or external in nature. *Internal*, i.e. *organisational drivers* relate to the organisational *values, culture and human and material resources* of a corporation, i.e. their internal governance. *External drivers* are institutional and landscape –or waterscape (Swyngedouw 1999)– level influencing factors arising from the corporations’ operating environment (Bansal and Roth 2000, Walker, Di Sisto et al. 2008, Kranz 2011, Methner 2013). Specifically, as proposed in the literature on corporate water stewardship, the *physical/operational, reputational/stakeholder, political/regulatory and litigation water risks* (Morikawa, Morrison et al. 2009, Barton 2010, DEG and WWF-International 2012, Signori and Bodino 2013) as listed previously suggest corporate engagement on water tending to stem from a need to mitigate external water-related hazards. Depending on the context and corporations’ organisational capacities, engagement on water may also be incentivised by the same factors, e.g. stakeholder demand or regulation. Thus the drivers may also be based on a business opportunity extending beyond risk management (Orr and Pegram 2014, Schulte, Orr et al. 2014).

**Table 3.** Typology of drivers for corporate engagement in water security, management and governance.

Drivers		Refs.	Influencing factors	Refs.
Internal	<i>Organisational</i>	(Bansal and Roth 2000, Walker, Di Sisto et al. 2008, Kranz 2011, Methner 2013)	<i>Corporate governance</i> – <i>Values</i> – <i>Culture</i> – <i>Human resources</i> – <i>Material resources</i>	(Bansal and Roth 2000, Walker, Di Sisto et al. 2008, Kranz 2011, Methner 2013)
External	<i>Institutional Landscape</i>	(Bansal and Roth 2000, Walker, Di Sisto et al. 2008, Kranz 2011, Methner 2013)	<i>Water risks and opportunities</i> – <i>Physical/operational</i> – <i>Reputational/ stakeholder</i> – <i>Political/regulatory</i> – <i>Litigation</i>	(Morikawa, Morrison et al. 2009, Barton 2010, DEG and WWF-International 2012, Signori and Bodino 2013, Orr and Pegram 2014, Schulte, Orr et al. 2014)

Whether the drivers enable or disable corporate action is left open to the analysis. In other words, their quality or absence may also function as a barrier to corporate engagement on water.

As with different forms of power and components of legitimacy as described in the following sub-section, the different drivers and their influencing factors are often found to be intertwined in practice. It is argued, however, that their differentiation in analysis helps to clarify the boundaries of corporate power and legitimacy, as described in further detail in sub-section 2.2.5.

#### **2.2.4. Legitimacy**

Legitimacy in this dissertation is understood as a justification for an actor's authority on a given issue (Bodansky 1999), here water-using corporations' authority on water security and in water management and governance. Though literature on corporate water stewardship has identified similar requirements for corporate engagement on water as listed below –such as accountability, transparency, effectiveness, procedural and distributional equity and justice– identified 'social legitimacy gaps' in its current practice calling for enhancement of the legitimacy (see e.g. Hepworth 2012, Hepworth and Orr 2013, Money 2014, CEO Water Mandate 2015), and named 'people, processes and outcomes' as dimensions to be considered when evaluating integrity of stewardship initiatives (CEO Water Mandate 2015), legitimacy criteria for corporate engagement on water and their relation to the requirements and dimensions listed have not been systematically theorised and conceptualised before.

Following Bodansky (1999), legitimacy in multi-actor transnational governance –in contrast to democratically mandated state systems with sovereign authority– is in this dissertation seen to consist of three components of source-, process- and outcome-based legitimacy, with associated sub-components as described by Karlsson-Vinkhuyzen and Vihma (2009), Karlsson-Vinkhuyzen and McGee (2013), Fuchs, Kalfagianni et al. (2011), Liese and Beisheim (2011) and Beisheim and Campe (2012) (Table 4). In addition, further corporate and water resources specific criteria are proposed with references to previous academic and grey literature and key international and national policy documents.

In order to enable practical analyses, distinct to 'sociological' criteria which would be 'based on the views of those subject to the authority', the criteria are 'normative', i.e., 'based on theories of democracy and justice' (Bodansky 1999), and internationally accepted, arguably universal principles of water security (Bigas 2013, Lankford, Bakker et al. 2013) and good water management and governance (e.g. United Nations International Conference on Water and the Environment 1992, United Nations General Assembly 2010, UNDP Water Governance Facility 2015). However, it is emphasised that the sociological and normative criteria co-exist and influence one another, as described later on. The criteria are directly applicable to conscious and intentional forms of corporate power and engagement on water, but they are also relevant for the evaluation of the workings of unintentional power and the unconscious forms of corporate agency on water.

##### *Components of legitimacy*

The first component, *source-based legitimacy*, has sub-components of *expertise and*

*resources*, here those of corporations to tackle water issues; *institutional tradition*, here the alignment of the forms of corporate engagement with the prevailing institutional frameworks (e.g. IWRM), respecting the democratic mandates, rights and responsibilities (see e.g. Ruggie 2008), and the track record of corporations on water; and fit with *the dominant discourses of society*, here the fit of corporate engagement on water with e.g., the ideals of multi-actor water management and governance (e.g. Warner 2007, Pahl-Wostl, Conca et al. 2013, UNDP Water Governance Facility 2015), water as a common pool – public good resource and the human right to water (Bakker 2007, United Nations General Assembly 2010, Černič 2011, Hepworth and Orr 2013), and other prevailing societal discourses.

The second component, *process-based legitimacy*, has sub-components of first, *equal participation*, here equal participation of corporations and other stakeholders in water management and governance processes, as also outlined in the key principles of water policies and declarations of the United Nations (United Nations International Conference on Water and the Environment 1992, United Nations General Assembly 2010); the guideline documents for corporate water stewardship (CEO Water Mandate 2010, CEO Water Mandate 2012a, CEO Water Mandate 2015), and the Alliance for Water Stewardship International Water Stewardship Standard (Alliance for Water Stewardship 2014); as well as the national water policies in focus (here those of South Africa, e.g. the Republic of South Africa 1996, the Republic of South Africa 1998, Department of Water Affairs 2013).

The second sub-component of process-based legitimacy is *accountability* (see also CEO Water Mandate 2010, Hepworth 2012, Hepworth and Orr 2013, CEO Water Mandate 2015). It is further classified by Fuchs, Kalfagianni et al. (2011) to *internal* and *external accountability*, the former measured here in terms of internal responsibility checks by the stakeholder groups in water management and governance interaction, and the latter in the ability of those affected by the management and governance decisions to hold them accountable. The third sub-component is *transparency* (see also CEO Water Mandate 2010, Hepworth 2012, Hepworth and Orr 2013, CEO Water Mandate 2015), both *internal* and *external* (Fuchs, Kalfagianni et al. 2011), in the form of understandable, timely and open communication in management and governance interaction.

The third component of legitimacy, *outcome-based legitimacy*, has sub-components of first, *effectiveness* (see also CEO Water Mandate 2010, Hepworth 2012, Hepworth and Orr 2013, CEO Water Mandate 2015), which is divided by Liese and Beisheim (2011) in multi-actor water management and governance arrangements to *output* (provision of knowledge, standards, services, and networking (as envisioned in the stated goals)), *outcome* (*de facto* change in behaviour of rule targets or substantial changes in a given population), and *impact* (contribution to the solution of the original problem – here water security). Beisheim and Campe (2012) add *institutionalisation of arrangements* as a fourth measure of effectiveness. Equally important to effectiveness, the second sub-component of outcome-based legitimacy is *distributional equity and justice*, here as a result of corporate engagement on water security and in water management and governance (see also Hepworth 2012, Hepworth and Orr 2013).

**Table 4.** Components and criteria of legitimacy of corporate engagement on water.

Components of legitimacy	Sub-components	Refs.	Criteria	Refs.
Source-based	<i>Expertise and resources</i>	(Bodansky 1999, Karlsson-Vinkhuyzen and Vihma 2009, Karlsson-Vinkhuyzen and McGee 2013)	Corporate expertise and resources to tackle water issues.	(Bakker 2007, Warner 2007, Ruggie 2008, United Nations General Assembly 2010, Cerniĉ 2011, Hepworth and Orr 2013, Pahl-Wostl, Conca et al. 2013, UNDP Water Governance Facility 2015)
	<i>Institutional tradition</i>		Institutional alignment of corporate engagement on water, rights, responsibilities and track record on water.	
	<i>Fit with the dominant discourses of the society</i>		Fit of corporate engagement on water e.g. with discourses on multi-actor water management and governance, water as a common pool – public good resource and human right to water.	
Process-based	<i>Equal participation</i>	(Bodansky 1999, Karlsson-Vinkhuyzen and Vihma 2009, Fuchs, Kalfagianni et al. 2011, Karlsson-Vinkhuyzen and McGee 2013)	Equal participation of corporations and other stakeholders in water management and governance processes.	(United Nations International Conference on Water and the Environment 1992, CEO Water Mandate 2010, United Nations General Assembly 2010, CEO Water Mandate 2012a, Hepworth 2012, Hepworth and Orr 2013, Alliance for Water Stewardship 2014, CEO Water Mandate 2015)
	<i>Accountability</i> – Internal – External		Internal and external accountability of processes of corporate engagement on water.	
	<i>Transparency</i> – Internal – External		Internal and external transparency of processes of corporate engagement on water	
Outcome-based	<i>Effectiveness</i> – Output – Outcome – Impact – Institutionalisation of arrangements	(Bodansky 1999, Karlsson-Vinkhuyzen and Vihma 2009, Liese and Beisheim 2011, Beisheim and Campe 2012, Karlsson-Vinkhuyzen and McGee 2013)	Effectiveness of corporate engagement in solving original problems.	(CEO Water Mandate 2010, Liese and Beisheim 2011, Beisheim and Campe 2012, Hepworth 2012, Hepworth and Orr 2013, CEO Water Mandate 2015)
	<i>Distributional equity and justice</i>		Distributional equity and justice as a result of corporate engagement on water.	

### **2.2.5. Interplay of power, drivers and legitimacy: implications for analyses of agency**

The different forms of power, drivers and different components of legitimacy usually coexist and influence one another in a context-specific manner, which results in the following implications for analyses of agency.

First, whereas the nature of power (e.g. benign or malign) depends on the legitimacy criteria against which it is being evaluated as noted previously, all criteria of legitimacy, normative or sociological (Bodansky 1999) are also directly or indirectly affected by makings of power. As Karlsson-Vinkhuyzen and McGee (2013:57) put it, “powerful actors [such as corporations] engage in efforts to change what is considered legitimate in international society because legitimacy makes power more effective and its maintenance less costly.” Conversely, power of the powerful may be contested if they are perceived to lack legitimacy (Levy and Newell 2002, Lukes 2005, Fuchs 2007). As mentioned, in order to enable practical analyses, the legitimacy criteria proposed here are normative, based on theories of democracy and justice and internationally accepted principles of water security and good water management and governance. They have thus gone through the broadest possible scrutiny and have been influenced by sociological legitimacy and *vice versa* (Bodansky 1999). However, the power structures behind them and the applicability of the values underlying the norms and principles to different social contexts should still be carefully considered as differences in the latter explain many conceptual and actual battles over water (Groenfeldt and Schmidt 2013). Water values are not static, but evolve along social consciousness (Postel 2008). Resultantly, research has a dual-role to play in being aware of them but also participating in discussions about them.

Second, and related to the previous point, it is acknowledged that neither power, drivers nor legitimacy are static, but they evolve over time (Suchman 1995, Hepworth 2012, Karlsson-Vinkhuyzen and McGee 2013), as does, accordingly, agency (Dellas, Pattberg et al. 2011). It is emphasised that no component of legitimacy should be prioritised in analyses at the expense of others at conceptual and theoretical level: for example, the perceived efficiency of private sector interventions does not equal effectiveness nor alone legitimises corporate engagement on water (see also Boelens and Vos 2012, Vos and Boelens 2014). In practice, however, temporal concurrence between different components may be hard to achieve. Therefore it is suggested that the legitimacy criteria proposed should be tested and applied as guiding principles from the very beginning of processes, not as once-off tick-box exercises, evaluating the extent to which the criteria are being full-filled and identifying the actions needed if the requirements are not being met.

Third and finally, even though analyses of agency may be built solely on analyses of power and legitimacy, it is argued that evaluating them against drivers of engagement helps to clarify the boundaries of agency as noted. Paired with the analysis of corporate power and especially their strategies and tactics, drivers tell what has led to corporate engagement on water in the first place. Paired with the sub-components of legitimacy, they tell whether the corporate actions taken are an appropriate response to addressing the key water problems in a given location considering both the corporate’s power and the responsibility of their actions. Accordingly, the consideration of both pairings is seen as essential for comprehensive evaluations of corporations as agents of water.





Furthermore, the water security, water management and governance, water-intensive value chains and networks, and corporate water stewardship literatures point out the multi-level, multi-actor and polycentric settings where the water-using corporations engage on water reaching from local to global spheres of interaction (Figure 2). This dissertation focuses on the corporations dominating the water-intensive global agro-food value chains and networks – the so called “ABCD of agribusiness”– as they are powerful actors in the most water-intensive management and governance structures globally; corporations engaging in the development of the corporate water stewardship principles and practices, which are gaining increasing traction; and corporations proactively engaging in water management and governance, notably in stewardship initiatives and projects, at a local and national level in South Africa, as such local and national settings continue to be the main arenas where impacts of water security and insecurity are being felt.





## 3. CASE STUDIES

This Chapter 3 describes the justification for the research design applied in the dissertation in section 3.1, the three case studies in focus in sections 3.2-3.4, and the positioning of the case studies and articles on the analytical framework developed in section 3.5.

### 3.1. Research design

As noted, due to the novelty and complexity of the study topic and the resulting interdisciplinary nature of the research, an initially explorative and later on an explanatory case study design (Yin 2013) with mixed qualitative data gathering and analysis methods was applied (Bryman 2012). The main case of the dissertation is the agency of the largest water-using corporations in water security, management and governance answering the overarching research question, continuously compared and contrasted to embedded case studies investigating the sub-questions. Three embedded cases described below were identified as representative and critical for the analysis (Yin 2013). Furthermore, in minimum two sub-units of analysis (e.g. corporations or stewardship initiatives or projects) were chosen to enable theoretical and literal replication within them<sup>10</sup>.

### 3.2. Case 1: corporations dominating the water-intensive global agro-food value chains and networks

The first embedded case study investigates the world's leading food and agribusiness corporations dominating the water-intensive global agro-food value chains and networks. Boosted with government subsidies, the international trade of crop commodities concentrated into the hands of a few Western-originated transnational corporations after the Second World War (Morgan 1979, McMichael 2009). The global food system continues to be dominated by them and their successors, notably the seed and agricultural chemical producers Dow, Dupont, Monsanto and Syngenta, and the agribusiness conglomerates Archer Daniels Midland (ADM), Bunge, Cargill and Louis Dreyfus, recently joined by Glencore and the rising Eastern giants of Olam, Wilmar, Sinar Mas and CofCo, among others (Murphy, Burch et al. 2012, Yap, Newman et al. 2015).

The case study focuses on ADM, Bunge, Cargill and Louis Dreyfus, the so called "ABCD" of agribusiness (Blas and Meyer 2010). Depending on estimates they have until recently handled 75-90% of the international crop commodity trade (Lawrence

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<sup>10</sup> In theoretical replication, two or more sub-units are chosen that are predicted to have contrasting findings, but for expected reasons. In literal replication, two or more sub-units are chosen that are predicted to result in similar findings (Yin, 2013).

2011, Murphy, Burch et al. 2012). Furthermore, they have actively concentrated and consolidated their global value chains, horizontally and vertically, by making close alliances with the seed and chemical corporations and livestock producers, and directly investing in farming land and diversifying their operations to shipping, biofuels and finance (Heffernan, Hendrickson et al. 1999, Hendrickson and Heffernan 2007, Borrás, McMichael et al. 2010, GRAIN 2011, McMichael 2011, Clapp 2015). They are among the main beneficiaries of the US subsidies and have had exclusive deals on the US in-kind food aid (Clapp 2009, Clapp 2015). Revolving doors have positioned their executives in top positions in the US administration and they have e.g. heavily lobbied the WTO negotiation rounds and Codex Alimentarius setting the global industry standards (Smythe 2009, Murphy, Burch et al. 2012). They have thus major instrumental, structural and ideational and discursive power in the global political economy of agro-food value chains and networks (Clapp and Fuchs 2009).

Due to the water intensity of their field of business, the “ABCD” corporations are explored as global water security, management and governance agents. Article I explores the “ABCD” corporations as managers of virtual water flows embedded in trade (Allan 1998, Allan 2003) focusing especially on the different forms of their power, strategies and tactics in the global political economy of agro-food value chains and networks and the resulting implications for global water security and governance. Article II compares and contrasts the power, drivers, water management and governance practices and the associated water security outcomes of two of the “ABCD” corporations, publicly listed Bunge and privately owned Cargill, and Nestlé S.A., one of the world’s largest branded food companies downstream to them in value chains.

### **3.3. Case 2: corporations engaging in the development of corporate water stewardship principles and practices**

The second embedded case study looks at the leading transnational corporations in the context of the development of corporate water stewardship principles and practices (e.g. water accounting and disclosure, risk management and collective action), in its organisations, institutional frameworks and governance arrangements (see Table 1 in sub-section 2.1.4). The corporations studied include 13 leading agro-food and beverage corporations –ABInBev, ADM, Bunge, Cargill, Coca-Cola, Diageo, Heineken, Kellogg, Kraft Foods, Nestlé, PepsiCo, SABMiller and Unilever– identified based on their top ranking in Fortune 500 in 2011 (Fortune Magazine 2011). In addition, corporations who have engaged in corporate water stewardship sessions in international water conferences and in five corporate water stewardship initiatives and projects and related seminars and workshops in South Africa and Botswana contribute to the case study findings.

As reported in Articles II-IV, the corporations are investigated on their power, strategies, tactics and drivers regarding the increasingly integrated institutional frameworks and transnational governance arrangements of corporate water stewardship. Furthermore, the water security outcomes of their actions and implications for broader processes of water governance globally are considered in Articles II and III, and the source-, process- and outcome-based legitimacy of their engagement in Article IV.

### **3.4. Case 3: corporations engaging in corporate water stewardship initiatives and projects in South Africa**

The third embedded case study covers lead corporations from water-intensive sectors, by their operations or supply chain (agriculture, beverages, retail, energy, chemicals, mining), who are engaging in five corporate water stewardship initiatives in South Africa. South Africa was deemed a critical national case (Yin 2013) due to its pressing water challenges - related to both resource availability and governance - and the high number of water stewardship activities that have taken place in the country. The stewardship initiatives involving South African corporations and the South African subsidiaries of multinational corporations have also been instrumental in the development of global corporate water stewardship principles and practices (see also Case 2).

To the author's knowledge no other analyses on corporate water stewardship and water-using corporate engagement on water security and in water management and governance had previously been conducted at a national scale. As nations form a central policy and political economy unit the study thus contributes towards filling an important research gap.

At the time of the study, two of the initiatives represented features of value chain engagement (collaboration to reduce water risks in supply chains), four local project implementation (joint action and investment on shared water resources or infrastructure challenges), two novel financing mechanisms (payment for ecosystem or watershed services; water funds), and two convening on policy (national or basin scale multi-stakeholder engagement) (after CEO Water Mandate 2012a, Hepworth and Orr 2013), all of them "mature", "beyond the fence-line" stewardship actions (CEO Water Mandate 2012b)<sup>11</sup>.

As reported in Article IV, the case study investigates corporate power, drivers and source-, process- and outcome-based legitimacy of their engagement in the specific initiatives in focus, but reflects them against the general national context of water security, management and governance, role of corporate water stewardship in it, and the role of the given corporations in the South African political economy.

### **3.5. Positioning of the case studies and articles on the analytical framework**

The embedded cases representing different contexts and settings of water-using corporate engagement on water and the four associated articles all contribute to the main case answering to the overarching research question of the dissertation, with varying emphases on the sub-questions, as described in Table 5. Furthermore, Figure 3 posits the embedded case studies and the associated articles on the analytical framework developed.

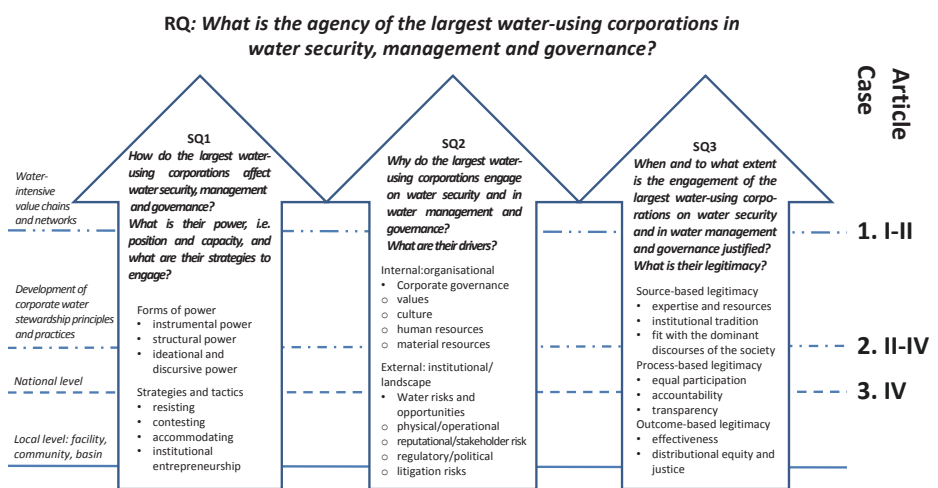
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<sup>11</sup> As noted in Box 1, CEO Water Mandate has in 2015 updated the stewardship engagement typology to: delivering projects and programmes (e.g. ecosystem restoration, infrastructure development); supporting creation of new accountability mechanisms (e.g. certification schemes, regulation and policy frameworks); creating resource transfer mechanisms (funding, expertise, in-kind support or products); or providing dialogue, learning and innovation platforms for stakeholders (CEO Water Mandate 2015). Nevertheless, the typology applied in the case study covers the different engagement types in the case in focus.

**Table 5.** The research questions of the dissertation in the case studies and articles.

	Article I	Article II	Article III	Article IV
<b>RQ: What is the agency of the largest water-using corporations in water security, management and governance?</b>				
<b>SQ1</b>	<ul style="list-style-type: none"> <li>- corporate power, strategies and tactics in the global political economy of water-intensive agro-food value chains and networks</li> </ul>	<ul style="list-style-type: none"> <li>- corporate power, strategies and tactics in the global political economy of water-intensive agro-food value chains and networks</li> <li>- water management and governance practices in water-intensive global agro-food value chains and networks</li> </ul>	<ul style="list-style-type: none"> <li>- corporate power, strategies and tactics in relation to the development of corporate water stewardship principles and practices</li> </ul>	<ul style="list-style-type: none"> <li>- corporate power, strategies and tactics in relation to the stewardship initiatives and projects; water management and governance in South Africa; and the development of stewardship principles and practices</li> </ul>
<b>SQ2</b>	<ul style="list-style-type: none"> <li>- corporate drivers to engage in water-intensive global agro-food value chains and networks</li> </ul>	<ul style="list-style-type: none"> <li>- corporate drivers to engage in water-intensive global agro-food value chains and networks; on water security and in water management and governance; and on the development of corporate water stewardship principles and practices</li> </ul>	<ul style="list-style-type: none"> <li>- corporate drivers to engage on the development of corporate water stewardship principles and practices</li> </ul>	<ul style="list-style-type: none"> <li>- corporate drivers to engage in corporate water stewardship initiatives and projects; in water management and governance in South Africa; and on the development of corporate water stewardship principles and practices</li> </ul>
<b>SQ3</b>	<ul style="list-style-type: none"> <li>- justification of corporate engagement on global water security and water management and governance</li> </ul>	<ul style="list-style-type: none"> <li>- justification of corporate engagement on global water security and water management and governance</li> <li>- justification of corporate engagement on the development of corporate water stewardship principles and practices</li> </ul>	<ul style="list-style-type: none"> <li>- justification of corporate engagement on the development of corporate water stewardship principles and practices</li> </ul>	<ul style="list-style-type: none"> <li>- source-, process- and outcome-based legitimacy of the corporations to engage in the initiatives in focus; in water management and governance in South Africa; and on the development of corporate water stewardship principles and practices</li> </ul>
<b>Case</b>	<b>1.</b>	<b>1.-2.</b>	<b>2.</b>	<b>2.-3.</b>

As described in section 2.3, the analytical logic of the research questions is such that corporate agency (RQ) is ultimately dependent on the interplay of the independent variables of corporate power and strategies (SQ1), their drivers (SQ2), and the extent to which their engagement on water fulfils the criteria of the components of legitimacy (SQ3). In other words, overarching analyses of corporate agency are not possible without consideration of corporate power and strategies, drivers and legitimacy. Even though the different Articles emphasise different sub-questions as described above, they do not uniformly investigate all of the variables listed in detail as the variables were themselves developed during the research process. All of the sub-questions are nevertheless implicitly discussed in each of the Articles and each of the cases as described in Table 5, and then explicitly discussed in the research findings in Chapter 5.



**Figure 3.** Positioning of the embedded cases and the associated articles on the analytical framework.





## 4. MATERIALS AND METHODS

This Chapter 4 describes the data gathering and analysis materials and methods applied in the dissertation.

### 4.1. Data gathering

The data gathering methods of the dissertation included document review, key-informant interviews and participating observation in corporate water stewardship working conferences and initiative projects.<sup>12</sup> The methods were chosen for their suitability for case study research and exploring a novel and complex topic (Yin 2013, Bryman 2012).

The document review focused upon data sources relevant to the cases in focus, such as market and water use databases, newspaper articles, company websites and stewardship project brochures. In addition, systematic academic and grey literature reviews with key words of “water-using corporations/companies/businesses” paired with “water security/management/governance”, and “corporate water stewardship” were undertaken at frequent intervals throughout the study using search engines such as Google Scholar and Scopus. Their content fed into the analytical framework and enabled triangulation of the study findings.

Altogether 68 key-informant interviews were conducted for the study in 2010-2014, out of which 56 were conducted by the researcher herself: 8 for Articles I and II (Cases 1 and 2) and 48 for Article IV (Cases 2 and 3). Institutional and stakeholder mapping (Aligica 2006, Reed, Graves et al. 2009) were applied in identifying the key informant groups. In order to reach the best-suited informants, a purposive snowballing sampling strategy was adopted at the beginning of each case study. Later a theoretical sampling technique was adopted in order to gain theoretical saturation of the pre-defined (research questions and their variables) and emerged analytical categories (key findings) (Glaser and Strauss 1967, Bryman 2012). The respondents included representatives from the corporations in focus, agribusiness consultancies, multi-stakeholder stewardship organisations, NGOs, donors and public sector officials involved in corporate water stewardship initiatives and their development, experts from intergovernmental organisations and agro-food and water resources research institutes, development consultants, and representatives from critical NGOs and civil society organisations. The mix of informants provided a cross-validated view of the research topic (Hoggart, Lees et al. 2002, Harvey 2011).

Semi-structured interview was deemed a valid method due to its proven flexibility in researching a novel and complex topic (Harvey 2011, Bryman 2012). The informants were asked questions related to the different forms of corporate power, strategies and tactics,

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<sup>12</sup> This section describes the methods utilised by the author herself. In addition other methods were used by the co-authors as described in the associated articles, notably in Article III by Daniel and Sojamo (2012).

drivers, and components of legitimacy, i.e. the pre-defined independent variables under each sub research question, and later on questions related to the emerged categories in the key research findings. Reliability concerns regarding the choice of method were minimised by deploying reflective probing tactics in the interviews and re-checking the research questions and the emerged categories as the interviews proceeded (Berry 2002). Informant consent was always obtained before the interview and all the informants were anonymised in the Articles. The interviews were documented by taking verbatim notes on key points that were later electronically transcribed and archived.

The author participated in sessions focusing on water-using corporations and corporate water stewardship at World Water Week in Stockholm in 2010, 2012, 2013 and 2015; World Water Forum in Marseille 2012; CEO Water Mandate Working Conferences in Mumbai 2013, Stockholm 2013 and Stockholm 2015; and four corporate water stewardship related seminars and project workshops in South Africa 2013-2014 and one in Botswana in 2013. Observations in these events were transcribed and the findings reflected against the research questions and triangulated against the case study interview findings.

The research was conducted independently from but in collaboration with the co-authors of the appended articles. In addition, the author was involved in the national and international guideline development for corporate water stewardship, working with WWF-Finland and Water Witness International (WWI) and in collaboration with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Pegasys Strategic Management Consultancy, CEO Water Mandate, Water Integrity Network, WWF-UK, WWF-SA and Alliance for Water Stewardship. As a member of the WWI team, she for example gathered and analysed data in South Africa in 2014 for the CEO Water Mandate Water Integrity Guidelines (CEO Water Mandate 2015), the data contributing also to the Article IV of the dissertation. The research thus had also a transdisciplinary dimension (Klein, Grossenbacher-Mansuy et al. 2012), as its design and findings were informed by direct engagement with some of the key stewardship practitioners in the field.

## 4.2. Data analysis

Content analysis was the predominant data analysis method used. It consisted of identifying and analysing the operational measures linked to the pre-defined independent variables under each sub research question<sup>13</sup> and the emerged categories in the key research findings<sup>14</sup>. Due to the large number of interviews Atlas Ti® was utilised in grouping the transcribed interview data for Cases 2 and 3 to categories of the independent variables and their associated sub-components, and to categories of their emerged key findings. The analysis fed back to the data gathering in an adaptive theory manner: the initial analytical framework and research questions with their variables

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<sup>13</sup> The operational measures included data on different forms of *corporate power*: e.g. market shares, financing, public corporate stances on water; *strategies and tactics*: e.g. public corporate stances on water, type of work on water; *drivers*: e.g. public corporate stances on water, factors identified by the informants; and *components of legitimacy*: e.g. public and corporate policy emphases, informant views regarding the fulfilment of the criteria proposed.

<sup>14</sup> The emerged categories included specific emerging issues under independent variables and their sub-components, such as virtual water hegemony (Case 1) and transnational water governance regime (Case 2), as described in Chapter 5 on the research findings.

were continuously reflected upon and adjusted throughout the study.

The analysis proceeded from pattern matching and explanation building to cross-case synthesis until theoretical saturation of the research questions and categories and analytic generalisation of the study findings could be reached (Layder 1998, Bryman 2012, Yin 2013)<sup>15</sup>. The process of interpretation of the data resulted in explanations of structures and mechanisms of water-using corporate agency in water security, management and governance and in identification of regularities and patterns in causal relations (Sayer 1992, Cloke, Cook et al. 2004). Due to lack of historical data and time limitations of the study, actual events resulting from them remain predominantly a topic for future research.

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<sup>15</sup> Theoretical saturation refers to the point where no more new insights emerge from the data (Bryman 2012). Analytic generalisation refers to external validity of the case study findings, i.e. the extent to which they can be extended to situations outside the original case study based on their similarity (Yin 2013).



## 5. FINDINGS

Referencing the related case studies and the appended Articles, this Chapter 5 reports the key research findings of the dissertation by sub-questions and the associated variables in section 5.1, and summarises them regarding the over-arching research question in section 5.4.

### 5.1. Corporate power to affect water security, management and governance

#### 5.1.1. Instrumental power

The case study analysis findings show that the largest water-using corporations have throughout their operational history had a major though largely unconscious role in shaping water use from local to global level via their direct influence on policies and practices in water-intensive sectors. As their awareness of water issues has grown, they have also started to increasingly intentionally exercise their instrumental power (Table 2) to change water management and governance processes and their water security outcomes.

As reported in Articles I and II, the transnational food and agribusiness corporations in focus had close linkages or direct positions at lobby and advisory groups to the national trade organisations of their countries of operation e.g. in the US and EU; World Bank, IMF, Codex Alimentarius, WTO and World Economic Forum, all of them dealing with institutional frameworks directly or indirectly affecting water use and security in global agro-food value chains and networks. Besides commodity trading, some of the corporations were also involved in the financial aspects of their sector, engaging in agricultural investments (e.g. in land with water resources), insurance and hedging managing commodity price risks, thus directly influencing through financial means where water is used and how.

In the development of the corporate water stewardship principles and practices, the transnational corporations in focus and the corporations operating in South Africa were found to vary corporation by corporation dependent on their dedicated capacity and resources to engage (Articles II-IV). The amount of financial, human and organisational resources individual corporations allocated to water stewardship correlated with the strength and type of their drivers, as listed in section 5.2 below. Nevertheless, in most of the situations studied the resource capacity of the corporations was larger, and accordingly their position in the initiatives stronger, than that of other stakeholders, especially the civil society. Furthermore, some of the corporations in focus were investing tens of millions of US dollars annually in water stewardship projects in developing countries throughout the world (see e.g. Coca-Cola Company 2015, Diageo 2015, PepsiCO 2016),

the size of their investment being comparable to that of main donors (Hepworth 2012).

As reported in Article IV, the instrumental power of the corporations compared to other actors was found to be especially pronounced at the national level in South Africa, corporations in many areas having had to take the role of a central authority due to the public sector failure. Corporate investments and engagement in water infrastructure and organisational water management and governance development were strongly called for by the government and some donors and NGOs. The amount of private investments for common water security outcomes remained still modest, however. Several informants, including some of the corporations, were worried about corporations being able to exert undue influence on the policy processes due to the power asymmetry between them and other actors. The problem was also evident at the local level of water stewardship initiatives and projects, which at the time of the analysis struggled with balancing corporate and other stakeholder capacity to engage.

### **5.1.2. Structural power**

Due to their market dominance in water-intensive sectors, their consolidated and concentrated value chains and networks, and their access to technologies and infrastructure, all the corporations in focus were found to have remarkable structural power i.e. broader influence on water (Table 2) compared to other water users.

Due to their dominance of the international crop commodity trade and control over related infrastructure from sourcing to storage and processing to ports and transport fleets in the main production regions of the world, the “ABCD” corporations were found to be important managers of international virtual water flows. Accordingly, they were identified as key actors in a Western ‘virtual water hegemony’, a parallel to ‘hydro-hegemony’ (Zeitoun and Warner 2006) found in power asymmetric international river basins (Article I). The corporations generally contested their direct influence on on-farm water use rather positioning themselves as facilitators of trade. Some of the corporations had realised their broader influence on global food and water security linked to their instrumental, ideational and discursive power in their value chains and networks in national and international governance, and had started to engage in industry initiatives on them. Some had developed and introduced more sustainable water technologies and practices in to their value chains thus affecting practices also beyond their direct operations, but the scope of their actions remained limited. Nevertheless, their general capacity to impose practices and requirements on their value chains and their room for manoeuvre to shift from one chain to another put them in a dominant position in the world agro-food system and its embedded water management and governance structures (Articles I-II).

When it came to the structural power of the corporations in focus regarding the development of corporate water stewardship principles and practices, a growing number of corporations were found to be actively engaged in its agenda setting and rule-making (Articles II-IV). Alongside NGOs and donors active in multi-stakeholder stewardship organisations a relatively small group of corporations were engineering institutional frameworks that affected not just themselves but also a much larger group of stakeholders, through the broader influence of the corporations over value chains and networks.

An especially stark power asymmetry was seen in South Africa in respect to the degree of national and local influence held by corporations in comparison to other stakeholders (Article IV). At the national level corporations in water-intensive sectors had historically been able to utilise their important position in the apartheid-era economy to secure an advantaged position in water allocation negotiations. The research found examples of corporations deploying stewardship as a tactic to protect and secure their position in the ongoing Water Allocation Reform (see also sections 5.1.4 and 5.2.2 below). At the local level, even though in some cases problems like pollution, scarcity and deteriorating infrastructure had been contributed to by the mining corporations' own previous neglect over issues such as acid mining drainage, the biggest corporations were better capacitated and resourced than other stakeholders to tackle the 'shared' water challenges.

In the South African agricultural sector the national land reform had generally not succeeded in transferring know-how from old large-scale land owners to emerging farmers, a common problem with government-led reforms throughout Southern Africa (Mutiro and Lautze 2015), which had led to a remarkable re-concentration of lands into the hands of few big corporate players. Emerging farmers and other new small scale water users lacked the capacity to equally participate in the local Water User Associations (WUAs) which were at the time of the analysis being disestablished due to their dysfunctionality. The Catchment Management Forums envisioned to replace the WUAs were feared to be even further out of reach from the smaller users leaving more room for manoeuvre for the bigger ones. Finally, the corporate water users generally had their water licences quickly processed, whereas the Department of Water Affairs was struggling with backlogs of applications from smaller water users', mostly emerging farmers' permits, thus leaving their water use, if any, illegal (Article IV).

### **5.1.3. Ideational and discursive power**

The exercising of ideational and discursive power (Table 2) by the corporations reflected their strategies and drivers to engage and their construction as legitimate actors of water, as also described in the following sub-sections. How the corporations constructed their discourses was strongly connected to the visibility of their brand and shareholder structure, i.e. their desired position in the value chains and networks and the internal corporate governance dynamics. As a common nominator, discourse was found to be used by the corporations as a tool in politics of scale, position and place in issue and responsibility framing (Lebel, Garden et al. 2005). It was not always easy to tell whether this was a strategic act or rather stemmed from a lack of capacity and understanding of water from the corporations' part. Out of the three dimensions of power, the playing field of ideational and discursive power between the corporations and other stakeholders was found to be the most equal, though still not level.

The ABCD corporations were found to generally frame themselves as facilitators of global trade, arguably belittling their power over water, but some of them had also started to actively engage in discourses on global food and water security stepping out as providers of solutions to the double challenge (Articles I-II). As noted, whether their discourse and actual scale of actions matched remained unsubstantiated, however, and in any case questionable since their notable instrumental and structural power compared to other stakeholders remained largely unaddressed. For example, the corporations were



openly advocating for a freer world trade as a means for global food and water security, but at the same time they were among the largest beneficiaries of agriculture and trade subsidies in the US as noted.

As reported in Articles II-IV, the stewardship discourse was centred on concepts of 'shared water risks and opportunities' (Pegram, Orr et al. 2009), 'shared water challenges and interests' (Schulte, Orr et al. 2014) and 'creating shared value' (Porter and Kramer 2011), on the one hand positioning corporations as water users among others, but on the other framing them as providers of solutions for all. The consumer facing branded corporations in focus were found to be especially actively engaged in the discourse building, publishing ambitious targets for reducing their water footprint per product, subscribing to human right to water, investing millions in water and development projects as described, and taking the podium in central international water fora advertising their work on water. Even though many of these efforts were framed as water risk management or even 'creating shared value', the corporate presentations often glossed over the actual doubled production targets and the accompanying need for water, past and present structural violations to people's health and livelihoods and other environmental impacts by the corporations, the lack of meaningful changes in the strategic cores of the firms, and the still experimental nature and small scale of the corporate water stewardship projects highlighted.

As noted, many of the South African corporations were also among the most active in shaping the global stewardship debate. In South Africa, though having been initially challenged by the government after the apartheid-era, the still predominantly white-owned corporations in focus were found to have gained more ideational and discursive power in the national water debates as successive administrations struggled with solving the pressing water challenges (Article IV). The dominant corporate discourse on water security was very much focusing on scarcity and future needs, however, thus fading away corporate responsibility on the prevailing water problems, the need for redress in water allocation and other highly politicised societal issues.

#### **5.1.4. Corporate strategies and tactics on water**

The corporations in focus were found to employ a variety of strategies and associated tactics on water (Table 2). The tactics deployed varied depending upon the relative power of the corporations as described previously, and upon individual internal and external drivers as described in detail in the following sub-section. Even though some of the corporations could be described as important institutional entrepreneurs, none of the corporations analysed had yet made fundamental changes in their strategic cores holistically implementing the idea of stewardship. Rather, it seemed that engagement on water was mostly an attempt to mitigate risks to their business-as-usual.

Out of the "ABCD" corporations the publicly listed ADM and Bunge had started to accommodate to the discourse of global food and water security as noted, engaging in industry initiatives and debates. The privately owned Cargill, on the other hand was at the time of the analysis still mainly contesting its role, Louis Dreyfus making no public claims resisting the relevance of water to it at all (Articles I-II). Less evidently and potentially partly unconscious of the water security dimension of their hegemonic position in the global value chains and networks, the corporations were found to be

key actors in the Western ‘virtual water hegemony’ (Article I). The world agro-food system and agricultural policies have not been subject to much international scrutiny, which has enabled a remarkable endurance of the hegemony. It was made evident at the turn of the decade, however, by the global food price spikes and the ensuing profits the “ABCD” corporations were able to reap out of them, and by the emergence of new corporations and parastatals from water scarce emerging economies challenging the “ABCD” corporations in the global market. Both the old and new players have since been involved in the rush of investing in agricultural land with water resources around the world.

In the development of corporate water stewardship principles and practices a growing but still a relatively small group of corporations were found to act as institutional entrepreneurs, proactively contributing to new water governance arrangements, which arguably had features of an emerging transnational water governance regime (Articles II and III). On the other hand the lead corporations could also be considered to be accommodating to the development sector led discourses of water security and stewardship, seeking credibility by partnering with NGOs, national governments, donors and international development organisations, founding multi-stakeholder stewardship organisations and initiatives with them. The corporations had been providing finances and data to these organisations, investing in research and development on water as described, pilot testing stewardship practices and contributing to setting future standards (Articles III-IV). Their corporate peers often followed their path, though differentiation was also common among direct competitors. The differentiation was deemed a sign of engagement on water being an important part of corporate PR as described also in section 5.2 below, but also to illustrate the still fragmented, though constantly integrating nature of the field (Article III).

In South Africa the corporations in focus were proactively engaging in national institutional development providing key inputs to water sector strategies and proposing new policies e.g. on water-offsetting against their investments in infrastructure, and establishing public-private-civil society partnerships on water resources (Article IV). As mentioned, engaging on stewardship was found to be a tactic in ensuring their water allocation shares under the allocation reform and diminishing water resources, but also deemed necessary as the government was failing to fulfil its mandate as the regulator and custodian of water resources despite the country’s world renowned policies. The difficult situation had also led to confusion in the corporate strategies. Some were insisting on engaging only within their own value chains, referring to their lack of democratic mandate and knowledge of water resources beyond their fence lines. This tactic in some cases also faded away their broader responsibility, however. Others had boldly stepped in to the governance vacuum left by the weak national and local government trying to also remediate their past misconducts, but were struggling with the complexity of the challenges they faced. Many corporations had realised that strengthening of the government was the most sustainable way of forward, but were worried of accusations of institutional and resource capture if seen closely engaging on policy and government capacity issues.

## **5.2. Corporate drivers to engage on water security and in water management and governance**

### **5.2.1. Internal drivers**

The internal drivers of the corporations (Table 3) were found to have been corporate specific, but some general features were identified throughout the cases in focus.

Some of the corporations studied claimed to have internalised the principles of water security and stewardship as their organisational values. In most of the cases the corporate water discourse, e.g. on ‘creating shared value’, seemed still to be just an outward expression, rather than a fundamental shift in the operational logic of the firms (Article II), as also described above. Organisational form and culture and external stakeholder relationships were found to have strongly influenced the corporate strategies, with the privately owned corporations in focus generally being the least progressive ones engaging on water, and the publicly listed, consumer facing ones generally being the most progressive (Articles I-IV).

The available human resources, especially on expertise on water and stakeholder relations, had arguably played a decisive role in shaping the water strategies and actions of the corporations in focus. As reported in Articles II-IV, it was often individual ‘organisational champions’ who had been driving the water agendas in the most progressive corporations. Many of them were very visible figures and influential experts in the international water fora and in the water debates in South Africa. Whether their influence and mandate extended to the strategic and executive decisions of the firms was, however, debatable.

Even though some CEOs were personally involved and had committed their organisations via signing pledges on water, e.g. the UN Global Compact’s CEO Water Mandate, most of the corporate representatives working on water issues were middle management and housed in the PR and marketing departments of the firms (Article IV). This indicated that water issues were most often perceived a reputational and stakeholder risk to the corporations as also described below, rather than an operational risk demanding fundamental changes in the strategic cores of the firms. Furthermore, several corporate representatives from headquarters cited difficulty in influencing the practices of their field-level operational personnel and *vice versa*, the PR-driven corporate discourse and agenda on water often being detached from the realities on the ground (Articles II-IV).

The corporations seemed to have generally allocated material resources and finances to their work on water depending on the perception of the severity of risk or scale of opportunity for the business, indicating that their engagement on water stemmed from their direct self-interest rather than from a more philanthropic type of CSR (Articles II-IV). As said, however, none of the corporations studied had fully internalised the externalities regarding their dependence and impact on water resources, their external water risks as next described thus looming larger in the future.

### **5.2.2. External drivers**

Similarly to the internal drivers, the external, institutional and landscape level drivers (Table 3) were found to have varied corporation-by-corporation though in a context

specific manner. The drivers had grown stronger for all the corporations studied during the past decade, however.

The “ABCD” corporations had built and continued to build their business in the main water abundant agricultural production regions of the world, the physical and regulated availability of water resources thus having at least to some extent been long time-horizon, landscape level and institutional drivers to them, though not always acknowledged (Article I). For example, Bunge had become more aware of water issues and water risks to their business after their public listing and the resulting shareholder and other stakeholder advocacy and pressure (Article II).

As reported in Articles II-IV, for the companies engaging in the development of corporate water stewardship principles and practices, external drivers fell into four broader categories, where physical, reputational, regulatory and litigation risks and opportunities resulting from both landscape level and institutional factors were intertwined. A fear of “losing social license to operate” in the eyes of stakeholders was the strongest driver among consumer facing corporations with highly visible global brands. Some of these corporations, e.g. Coca Cola, had even faced local court litigation and recognised the impact such cases could have across multiple markets (Article II). Conversely, having a sustainable image ensured access to higher value niche markets, where keeping up with competitors also drove the engagement (Article IV). Second, corporations that were tied to specific locations, e.g. supplying farmers, beverage and energy companies and mines, were most concerned of physical disruptions (Articles III-IV). Third, all the corporations studied were becoming under growing investor scrutiny (Articles II-IV). Fourth, in some cases tightening public regulation had forced changes to the water management practices of the corporations, but generally the drivers for corporate engagement on water were the strongest in weak public governance settings where physical and reputational risks were resultantly rife (Articles III-IV). The lack of public sector capacity to engage and guarantee public interest in the corporate water stewardship initiatives and projects aiming to manage those risks was shown to be also one of the main factors undermining their execution and outcomes (Article IV), as further described in section 5.3.

The engagement drivers of the corporations operating in South Africa predominantly fell to the fourth category i.e. originated from challenges in the public governance, but stemmed also from regulatory incentives and pressure (Article IV). At the time of the analysis, the National Water Resources Strategy 2 (Department of Water Affairs 2013) called for strategic public-private water partnerships on funding, technical expertise, training and efficient implementation of policies. The ongoing Water Allocation Reform discussed in sections 5.1.2-5.1.4 above was also found to be a major institutional driver, for example prompting stewardship action in the agricultural sector where farmers wanted to showcase good practice in order to ensure their allocation quotas and retailers their supply in the future. Corporations in other fields that had taken their internal efficiency to the maximum were still pressured to reduce their water consumption and were thus engaging beyond their fence lines to improve efficiency of local infrastructure. Besides the public sector agencies, the corporations had also been engaged by national and international NGOs, multi-stakeholder stewardship organisations and donors to improve their practices on water, stewardship fitting well together with the growing international development paradigm emphasising private sector participation. Finally,

several informants pointed out that it was in general terms profitable for the corporations to engage on water in South Africa, e.g. invest in water infrastructure, as the government still bore the risks.

### **5.3. Corporate legitimacy to engage on water security and in water management and governance**

#### **5.3.1. Source-based legitimacy**

Even though the corporations studied had capacity and position to engage on water, justification for their authority to do so in the first place could in several occasions be questioned when evaluated against the source-based legitimacy criteria developed (Table 4). What stood out was that despite their public claims and PR sometimes suggesting so, none of the corporations studied had yet fully embraced water security for all and stewardship in their strategic cores, as also noted above. Instead, their engagement most often stemmed from a need to mitigate risks to their business-as-usual, as also described in the previous sections.

From the perspective of expertise and resources, the engagement of the “ABCD” corporations on global water security could be justified based on their power to affect its underlying material conditions and the water management and governance processes in the agro-food value chains and networks (Articles I-II). The corporations had also major resources to invest in research and development of more water-wise agricultural practices, and were increasingly doing so. From the perspective of institutional tradition their agency was somewhat ambivalent: they had themselves been engineering national, regional and internal institutional frameworks that were to regulate their own actions, indirectly also on water, but had largely refrained from participating in the public water debates. Even though their growing engagement in the processes of water management and governance could be justified by their influence on its broader ramifications, their position was also contested by several NGOs, academics, government agencies and other businesses alike. They were criticising the corporations for gambling with agricultural markets pushing out smaller actors and adversely affecting security and diversity of farming livelihoods globally, and for destructive practices by their suppliers and subsidiaries in cattle, soy, palm oil and other biofuel industries, for example (Articles I-II). In other words the justification for their businesses in general was being challenged in societal discourses, making their authority as actors of water also questionable.

The engagement of the corporations in focus in the development of corporate water stewardship principles and practices could also be justified with their power over processes of water, many of them also coming up with innovative solutions to shared water challenges (Articles II-IV). The global corporate water stewardship agenda was steered to be aligned with the prevailing institutional frameworks and discourses on water, notably IWRM, human right to water and the Sustainable Development Goals (see e.g. CEO Water Mandate, WaterAid et al. 2015). How individual corporations adhered to them in practice, varied, however, as the example of South Africa below also shows. Furthermore, as noted, corporate engagement on common pool – public good water resources in general, and some of the multi-stakeholder stewardship organisations and individual corporations in particular, were also challenged by other stakeholders.

Some of the corporations involved had previously committed to direct or systemic level environmental and human right violations related to water (e.g. mining), and others seemed to aim to polish their image with stewardship engagement even though their field of business was inherently unsustainable from climate change (e.g. fossil energy production) or resource scarcity perspective as they were fuelling excessive consumption (e.g. fast fashion industry). Again, justification for the corporate authority was found to be questionable, especially when they were only addressing risks to their business-as-usual.

Similarly to the other case studies, the stewardship engagement of the corporations operating in South Africa could also be justified with their power and resources, as their drivers also strongly indicated. As reported in Article IV, their expertise varied, however, some corporate representatives being highly skilled and qualified on water issues, but many also having a low level of understanding and appreciation of the complexities the public sector water agencies were tackling with. Accordingly, the corporate resources were not always put in to their best use in the initiatives. With growing experience, many corporations were becoming aware of their lack of democratic mandate and knowledge on water resources and rarely wished to take a lead in processes considering them which were to be under the mandate of the government. Even though in principle stewardship approach fitted well together with the national multilevel, polycentric and participatory IWRM governance model, in practise institutional alignment of corporate engagement was found to be low. Several informants raised concerns of stewardship adding to the institutional and organisational fragmentation in the country, some initiative forums e.g. overlapping with publicly mandated ones. As noted, pressing issues such as the Water Allocation Reform and water license backlogs were not directly addressed by the initiatives in focus at the time of the analysis, even though the corporations often had a direct stake in them.

When it came to the fit with the dominant discourses in the South African society, corporate engagement on water was strongly encouraged in the discourse of a small but influential political and economic elite, but also criticised and contested by several academics, NGOs and civil society group representatives who were fearing private capture of resources and institutional processes. A proposed policy on water off-setting ensuring water allocation to corporations in the future against their present investments in public infrastructure was especially heavily criticised and seen to violate the public good and human right nature of water. Furthermore, even though the Constitution of South Africa listed water as a human right and several companies involved in the stewardship initiatives had also committed to it via endorsing the UN Global Compact's CEO Water Mandate, some informants were of the opinion that the sectors with the worst historical and ongoing environmental and human rights violations such as energy and mining were largely not challenged by the government due to their importance to the national economic growth.

Awareness and organisation of South African civil society on water in general was low at the time of the analysis, affecting equal participation of different stakeholder groups in the water debates, as also described in the following section. Some informants argued that the persistent inequity situation was so dire and so pervasive to any corporate engagement that the already privileged corporations should not have been given any more voice in the national water space, and that especially donor efforts should have

been targeted towards strengthening the position of the civil society and public sector instead.

### **5.3.2. Process-based legitimacy**

All the corporations studied were still learning engagement in multi-stakeholder processes on water. As feared, however, the process-based legitimacy of their engagement (Table 4) was found to be seriously hampered by the issue behind the main external drivers for their engagement in the first place: lack of government and public sector capacity to act as the regulator and custodian of water resources. With growing corporate engagement on water, the position and capacity of the public sector relative to the corporations, and resultantly, also the position and capacity of the civil society, were feared to shrink even further.

When it came to equal participation in their engagement processes, the ABCD corporations had for decades had a dominant role in global agro-food governance as described above. Thus they had also had the opportunity to indirectly affect the ramifications for the use and management of water and international virtual water flows more than the other stakeholder groups (Articles I-II). In the nominal global and national water governance processes they had remained the elephants in the room due to their little visibility and secrecy. Awareness of their power over water was only dawning to them and slowly growing among water policy makers and other stakeholders. Accordingly, transparency of their engagement was thus generally low, as well as the prerequisites for their accountability.

Corporate engagement in setting the principles and practices of corporate water stewardship could itself be seen as a form of a long called-for corporate participation in water management and governance (Articles III-IV). Differences in the corporations' and other stakeholders' capacity to engage made equal participation both in the publicly-led processes and in the emerging stewardship governance arrangements challenging, however. Some multi-stakeholder stewardship organisations had made broad participation their priority though struggled with it, whereas others were criticised for their exclusivity (Article IV). When it came to accountability and transparency, the global stewardship agenda and corporate headquarter level discourse were found to be somewhat technical and detached from the everyday challenges of water management and governance. Stewardship was most often introduced to pilot sites by the corporate headquarters, large international NGOs or donors, having little initial ownership or initiative from the ground. SMEs, national NGOs and civil society groupings had had little say in its terms; partly due to lack of awareness, but also due to differences in capacity to engage and limited access (Articles II-IV).

As reported in Article IV, corporations, stewardship organizations and some NGOs, donors and government officials were found to have been rather promoters than stakeholders of the stewardship agenda in South Africa. Local level civil society and public sector participation were found to be especially flawed at the time of the analysis, on the one hand due to their little awareness and capacity constraints, on the other hand due to lack of their involvement and access as their engagement was feared to slow down action. In multi-stakeholder processes, third-party neutral mediation was deemed necessary to balance participation due to the weakness of the public sector.

Democratically mandated lead of the public sector was still deemed necessary in the longer run. Government's duty to protect and corporations' duty to respect human rights and other societal norms were seen to be needing enforcement, as both public sector and corporations stepping outside their mandates had caused problems.

The initiatives struggled also with their internal accountability and transparency, but the challenges were seen to originate from the novelty of the multi-stakeholder collaboration. Lack of external accountability and transparency were bigger problems, however. The external transparency of the initiatives was low, limiting the possibility of the stakeholder groups to hold them accountable. On the other hand, the stakeholders were rarely capacitated to do so either as described. The corporations were for example not kept in check for misconducts related to water as different ministries who besides lack of internal capacity disagreed among themselves on corporate regulation. As noted, the South African civil society was weakly capacitated and organised on water, preventing it from acting as a counterforce to the corporations.

### **5.3.3. Outcome-based legitimacy**

Outcome-based legitimacy of the corporate engagement (Table 4) was early to fully evaluate in the cases studied, but the findings pointed towards both promising and worrying developments. The former included much needed drive, resources and new type of multi-stakeholder collaboration in water resources management and governance, whereas the latter risked fragmentation, re-inventing broken wheels and private capture of institutional processes and human and water resources as also identified in previous literature.

When it came to effectiveness of their engagement on water, the ABCD corporations were found to have potentially contributed to net-savings in water use globally as their net trade flows were from green water intensive to blue water dependent regions suffering from more serious water scarcity (Article I). Thus, they were potentially also contributing towards distributional equity in global water resources. On the other hand, the industrial agriculture models promoted by them had been destructive to the environment and people's livelihoods as described. Furthermore, majority of the corn and soybeans traded by them were for animal feed instead of human consumption, the outcome likely being larger water footprints of diets and land and water resources scarcity (Article I). ADM, Bunge and Cargill all advertised having started to improve per unit efficiency of their operations and supply chain practices, but their approach seemed rather ad hoc than fully institutionalised. Furthermore, none of them were addressing the systemic level environmental sustainability and social justice impacts of their business models. Again, they portrayed themselves as being dependent on their value chain demands, rather than being able to utilise their powerful position in the wider networks to influence that very demand towards improved water security for all (Articles I-II).

At the time of the analysis corporate water stewardship had arguably resulted in outputs of improved water awareness among business community, guidelines, standards, and partnerships; and outcomes of an increase in a much needed drive, resources and new culture of multi-stakeholder collaboration especially in governance challenged settings (Articles III-IV). Its governance arrangements were getting more



institutionalised with consolidating agendas and growing alignment with international policy frameworks, but the actual progress from piloting to holistic change in practice was still to be seen. Accordingly, its impact on improving water security and water management and governance practices was still to be verified. From the perspective of distributional equity and justice institutional and resource capture by private sector entities was also feared, ultimately undermining water security for all (Articles II-IV).

As reported in Article IV, the stewardship initiatives in South Africa had also resulted in a variety of outputs ranging from workshops to alien vegetation clearing projects to policy proposals, the key outcome being new type of multi-stakeholder collaboration. Whether the outputs were what they were originally envisioned to be, how they differed from actions the corporations were legally obliged to take anyway, and whether they addressed the key water problems of the corporations and those in the country, were a different issue, however. Furthermore, in many cases stewardship was still found to be more talk than action with verifiable water security impacts. The level of institutionalisation of the governance arrangements of the initiatives and pilot projects in focus was found to be low, putting adaptive learning from them at risk. Several initiatives had woken up to the problem though and were working on formalising their governance structures, also to improve their low accountability and transparency. Some perverse outcomes were also feared, including the previously mentioned further fragmentation of water management and governance in the country, as well as institutional and resources capture affecting the distributional equity and justice resulting from the initiatives.

#### **5.4. Summary of the findings: agency of the largest water-using corporations in water security, management and governance**

As the dissertation findings show, the largest water-using corporations have remarkable instrumental, structural, ideational and discursive power to affect water security and water management and governance from global to local level. The corporations dominating the agro-food value chains and networks are identified to be a part of global 'virtual water hegemony', and corporations engaging in the development of the corporate water stewardship principles and practices to be contributing to an emerging transnational water governance regime. Predominantly driven by water scarcity, stakeholder pressure and public sector failure to act as the regulator and custodian of water resources – an amplifying factor to a variety of water risks – the corporations have become increasingly active and proactive in their water engagement strategies and tactics.

Legitimacy of their engagement is found to be questionable, however. The corporations studied are yet to fully embrace water in their strategic cores. With focusing on water from limited perspective they scale out their broader responsibility, and arguably risk theirs and others longer term water security. Equal participation, accountability and transparency were found to be in need of improvement in all the engagement processes in focus. Confirming findings in the previous literature, the outcomes of the processes are shown to include much needed drive, resources and new type of multi-stakeholder collaboration in water management and governance, but also risks of fragmentation, re-inventing wheels and private capture of public institutional processes and resources.

In sum, water-using corporate engagement has become increasingly central to processes of water management and governance, but corporate authority as actors on

water, and accordingly, their agency remains debatable against their drivers and the legitimacy criteria developed.



## 6. DISCUSSION

This Chapter 6 discusses the implications of the research findings to the theory and practice of water-using corporate engagement on water security and in water management and governance, and compares the findings to those reported in related recent studies. Limitations of the study are also critically reflected on, with recommendations for a way forward.

### 6.1. Implications of the research findings

As the findings of this dissertation show, water-using corporate engagement has become increasingly central to processes of water management and governance. If sustainable and just outcomes for all are to be reached instead of short-term water security gains for a few, however, the critical issues highlighted in the case studies need to be addressed.

Three broader themes of recommendation for the theory and practice of water resources come across: first, a call for more open *acknowledgement of corporate power*; second, a need to more carefully *evaluate and enhance corporate legitimacy to engage on water*; and third, an imperative to *support stronger public institutions* to regulate the processes of water management and governance where corporations engage and the *civil society* to equally participate and hold both the corporations and the public sector accountable.

#### 6.1.1. Acknowledging corporate power

The capacity and position of the largest water-using corporations to affect water management and governance has in recent years been understood to be such that a growing number of national and international development agencies, NGOs and academics alike have deemed their engagement of vital importance to water security (Hoekstra 2010, Pahl-Wostl, Conca et al. 2013, Allan, Keulertz et al. 2015, Vörösmarty, Hoekstra et al. 2015). The findings of this dissertation further emphasise that corporations are political actors on water, not just neutral providers of finances and technology, however. The broader extent of their power via their value chains and networks is clearly illustrated in the dissertation case studies reported in the four appended Articles, as well as the asymmetry between them and other stakeholders in instrumental, structural, ideational and discursive means to affect processes of water from local to global level. The case of South Africa shows (Article IV) how corporate power and the lack of public sector capacity in return have been behind the key drivers of the corporations' growing engagement on water, but also the main factor undermining the legitimacy of their engagement (see also Kranz 2011, Hepworth 2012, Hepworth and Orr 2013).

The case study findings support the previous concerns of institutional and resource capture resulting from corporate engagement on public good – common pool water

resources (Hepworth 2012, Mehta, Veldwisch et al. 2012, Newborne and Mason 2012, Franco, Mehta et al. 2013, Hepworth and Orr 2013, Vos and Boelens 2014). It is proposed, however, that the power asymmetries between corporations and other actors should not be seen as insurmountable hazards leading to a paralysis of action in the face of pressing water challenges. Rather, they are a factor all parties should be more aware of when assessing their current practices and future ways forward.

When the scale and complexity of hydro-social systems extends to national or global political economy level, struggles for power and politics over water are rarely avoidable between different actors, be them state, corporate or civil society (Swyngedouw 2009). Furthermore, even in seemingly cooperative situations on water, various forms and levels of conflict may still coexist (Zeitoun and Mirumachi 2008). Corporate power does not exist in a vacuum nor is it constant: it is in a continuous state of flux in interaction networks between different agents (Lukes 2005, Clapp and Fuchs 2009). As shown especially in Articles II-IV, corporate actions have been enabled, limited and guided by their stakeholders. In order for corporations to be challenged and their actions to be directed for more sustainable and just outcomes, however, corporate power and its workings need to be made more visible.

Especially the less evident but persistent, concentrated and consolidated forms of corporate power over water security, management and governance such as the Western ‘virtual water hegemony’ identified in the corporate dominated global agro-food value chains and networks (Article I) need further unravelling. When it comes to the transnational water governance regime forming around corporate water stewardship (Articles II-IV), it is argued that its original buzzwords of “shared water risk” (Pegram, Orr et al. 2009) and “shared value” (Porter and Kramer 2011) have, albeit understandably, depoliticised water resources challenges to spark collective action. It is proposed, however, that proactive forms of corporate engagement on water such as corporate water stewardship could benefit from a more open acknowledgement at the outset of the power asymmetries between corporations and other actors, and the issues the asymmetries may lead to in engagement processes. This viewpoint is also highlighted in recent stewardship guidelines produced by the stewardship organizations and in their discussions with the engaging corporations and their stakeholders themselves (Schulte, Orr et al. 2014, CEO Water Mandate 2015).

If the power asymmetries between corporations and other actors were perceived so dire that the engagement could risk leading to institutional and resource capture, in situations asking for immediate corporate action such as that in South Africa (Article IV), mediators and facilitators, such as NGOs, academics and consultants who were well-grounded in the location setting could help levelling the playing field for different stakeholders (see also CEO Water Mandate 2015). The position and capacity of the corporations alone is not enough to justify their engagement, however, as also discussed below.

### **6.1.2. Evaluating and enhancing corporate legitimacy to engage on water**

The dissertation findings re-emphasise the need to carefully evaluate corporate legitimacy to engage on water (Hepworth 2012, Hepworth and Orr 2013, Money 2014). Even though the corporations studied have remarkable power to affect water security,

management and governance, none of them had yet embraced water in their strategic cores. This supports the findings in other recent studies that corporate responses to water risks to date have been rather political than leading to holistic changes (Money 2014, Orr and Pegram 2014, Martinez 2015, Orr and Sarni 2015). This is also highlighted in the findings of the CDP 2015 corporate water disclosure report (CDP 2015): water remains largely a promotional or philanthropy type CSR issue, as comprehensive risk assessments, responses and full disclosure are lacking. In addition, none of the most visible corporate advocates of stewardship dominating the international discourse scored among the CDP best performers. The actual breadth and depth of their engagement on water remains unsubstantiated despite their pilot projects frequently appearing as best practice examples. This further illustrates the need to include comprehensive assessments of corporate value chains and networks, including the evaluation and sustainability assessment of their total water footprint (Hoekstra 2014), into consideration.

When evaluated against the legitimacy criteria developed in the dissertation, the largest agribusiness corporations have the economies of scale to improve water security for all from efficiency perspective, but their current business models work against procedural and distributional water and food equity and justice (Articles I-II). The dissertation findings support the analyses of the global agro-food value chains and networks proposing that the monopolistic and oligopolistic situations in them should be limited by public interventions to ensure fairer markets and more democratic standard setting processes (Fuchs and Clapp 2009, Burger and Warner 2012). In general, the local and global food and water challenges may demand similar fundamental public restrictions of capitalistic market structures as climate change is argued to necessitate (water-food-climate challenges being also intertwined) (Klein 2014), the ideology and rationale of those market structures often being inherently insecure for the most vulnerable of the global society.

When it comes to corporate water stewardship, despite the global stewardship agenda being increasingly aligned with international institutional frameworks on water such as the Sustainable Development Goals (CEO Water Mandate, WaterAid et al. 2015, United Nations 2015) and the prevailing development paradigm emphasising private sector participation (see e.g. Schulpen and Gibbon 2002, Dunning and Fortanier 2007), corporate engagement in its name was found to be only partially aligned with public interest aims as envisioned (Articles II-IV). Furthermore, even though the stewardship action represents a form of a long called for multi-stakeholder participation in water management and governance, equal participation, transparency and accountability in the stewardship engagement processes were found to be in need of improvement. Instead of learning from the previous participatory water management and governance approaches –including IWRM which continues to be promoted by the Sustainable Development Goals– some stewardship initiatives studied in South Africa were even found to be repeating their mistakes (Article IV). In addition, to achieve its commendable aims, corporate water stewardship was found to be still too much of a discourse of just a relatively small group of the largest water-using corporations, NGOs, stewardship organizations, donors and governments globally. Besides the to date largely invisible corporate giants such as the agribusiness corporations studied in this dissertation, local public sector, civil society, and small and medium sized enterprises with remarkable accumulative impacts would also be important to further engage in its debates (see also

Muller 2012, Newborne and Mason 2012, Baleta 2014, Vos and Boelens 2014).

Simply put, and self-evidently, corporate licenses to operate should be withdrawn if their field of operation and models of business were found out to be inherently unsustainable and contributing to water inequity and injustices. Apart from human right to water (United Nations General Assembly 2010), clear internationally accepted benchmarks for reasonable water use and consumption are still lacking though (Hoekstra 2014), as well as the consensus on their defining values (Groenfeldt and Schmidt 2013). It is also admitted that the legitimacy criteria set here for corporate engagement on water may be difficult to achieve in any water governance arrangement, be that public, private or their hybrid. Multi-actor collaboration among a diverse group of stakeholders never comes easy. Furthermore, when evaluating legitimacy of corporations as societal actors, naturally also other sustainability and equity and justice factors than just their agency on water need to be weighed in. In some cases the corporations may also be the only ones with capacity and technology to avert the environmental catastrophes resulting from their past misdeeds enabled by lax regulation as the example of the South African mining sector shows (Turton 2016). Nevertheless, it is argued that justification for corporate authority on water should be opened to broader debate and considered and evaluated in a more systematic manner than it currently is. This holds especially true for the stewardship approach if it is to be as inclusive as it claims and as central to solving the pertinent shared water challenges, not just the short-term water risks to business, as the hype around it in South Africa and globally aspires.

The question is then, how to enhance the legitimacy of corporate engagement on water in practice, especially in weak public governance and regulatory settings? The implementation and enforcement mechanisms of the existing international guidelines relevant to corporate engagement on water, notably the OECD Guidelines for Multinational Enterprises (OECD 2011), the Ruggie principles (Ruggie 2008), and the UN Global Compact Principles, including those of the CEO Water Mandate (CEO Water Mandate 2016) have all been criticised for being inadequate (Černič 2008, Černič 2011, Sethi and Schepers 2014). Out of the other available institutional mechanisms and instruments water stewardship standards such as those of the European Water Partnership (2012) and the Alliance for Water Stewardship (2014) seem to hold the greatest promise.

The stewardship standards, though not yet widely applied, have potential to improve corporate practices in collaboration with stakeholders in a structured and validated manner, the benefits extending beyond the fence lines of the certified facilities to local communities and basins. Their certificates should be granted with caution, however, to avoid their usage for broader corporate PR despite their applicability to only single facilities; legitimising fields of business which are in other terms than water unsustainable and unjust; and marginalising smaller actors who do not have capacity to deal with the bureaucracy required (see also Vos and Boelens 2014). Nevertheless, besides improving corporate practices their value lays in their suitability for contributing to addressing the two other central challenges of agency in water security, management and governance as discussed. First, the failure of the public sector institutions to fulfil their mandates and regulatory role to protect and allocate water resources in a sustainable and just manner, and second, the lack of capacity and awareness of civil society actors from communities to consumers to keep both the corporations and the public sector agencies in check. The

imperatives and options for these are further detailed below.

### **6.1.3. Supporting stronger public institutions and civil society**

The dissertation findings in South Africa (Article IV) support the increasingly raised argument that when public institutions and regulation are weak, proactive forms of corporate engagement on water such as corporate water stewardship should support, not replace public water management and governance—not least because businesses as private and often foreign actors do not have the mandate to step in to fill the governance gap beyond their immediate operations and supply chains, but because they lack expertise and willingness to do so, too (see also Newborne and Mason 2012, Hepworth and Orr 2013, Bakker 2014, Orr and Pegram 2014, Schulte, Orr et al. 2014, Orr and Sarni 2015).

This is not to say any public governance arrangement should be preferred to privately led interventions. As noted, in settings where the power asymmetry between corporations and other stakeholders including the public sector is drastic, third-party mediation and facilitation is required. As highlighted above, the water stewardship standards guide in stakeholder engagement processes, and when properly applied, ensure alignment with the mandated public governance principles and processes supporting their bottom-up implementation. For the longer term though, despite the inherent differences between corporations as water users versus corporations as service providers, the theory and practice of water-using corporate engagement on water could gain from the lessons learned in that of water utilities and water markets: notably, that strong an independent public regulation is needed to ensure both the procedural and distributional equity and justice in the resource allocation, and the longer term sustainability of business (Allouche and Finger 2003, Budds and McGranahan 2003, Bakker 2007, Garrick and Hope 2013, Bakker 2014).

The dissertation findings further caution against diverting international development agency support to private sector development and public-private partnerships—a growing trend the past decades (e.g. Schulpen and Gibbon 2002, Dunning and Fortanier 2007, United Nations 2015)—without levelling also the other crucial players, i.e. the civil society to hold both the corporations and the public sector accountable. It is acknowledged that the donor funds channelled to corporate water stewardship to date have still been minor and predominantly complementary to, not competing with public sector and civil society support (e.g. GIZ 2016), and that several corporations have themselves invested in community capacity building, education and infrastructure (e.g. Coca-Cola Company 2015, Diageo 2015, PepsiCO 2016). As the dissertation findings on South Africa show (Article IV), the stewardship initiatives and projects have struggled especially with their civil society engagement, however.

Getting vastly different stakeholder groups such as transnational corporations and local civil society groups as equals to same table is understandably extremely challenging, in South Africa and elsewhere. The disparities are often structural in their nature and the stakeholder relations politicised, the projects rarely having resources to fix them. On the other hand, when corporations invest in local community organisation and civil society engagement—or in public sector capacity building—risks of institutional and resource capture and lack of ownership are real (Article IV). Accordingly, only by



levelling the players, i.e. providing independent support, education opportunities and voice also to the civil society, and by levelling the playing field, i.e. opening the agenda setting, debates and governance processes of corporate water stewardship and corporate water engagement more broadly to a broader group of stakeholders, can corporate engagement on water security and in water management and governance have a real chance to contribute towards solving local and global shared water challenges (see also Hepworth 2012, Muller 2012, Newborne and Mason 2012, Hepworth and Orr 2013).

Finally, supporting consumers to make water secure consumption choices through enhanced corporate transparency, validated with stewardship certificates and standardised disclosure as detailed above, would be equally important, in developing and industrialised settings alike (Articles I-IV) (see also Hepworth 2012, Hepworth and Orr 2013, Hoekstra 2014, Jalava, Kummur et al. 2014, Vos and Boelens 2014, Vörösmarty, Hoekstra et al. 2015).

## **6.2. Limitations and way forward**

When it comes to the reliability of the study findings, going further back to the epistemological groundings of the study, it is acknowledged that the analysis presented here can only offer one possible socially constructed explanation or understanding of the research topic despite the complementary theoretical lenses and data sources applied (Bryman 2012). Nevertheless, every attempt was held throughout the research effort to produce a valid description of the largest water using corporations and the role they have had in global water challenges and should play as actors of water security, management and governance. As the study was predominantly exploratory and to some extent explanatory (Yin 2013), further research is needed to test and possibly prove the proposed causal relationships between the corporate position and actions and their water security outcomes.

From normative perspective, it is emphasised that the analytical framework developed is built on certain international normative criteria, which may not be applicable with the sociological criteria in all the contexts where corporations engage on water. Furthermore, as noted, power and legitimacy are by their nature fluid, constantly redefined in interaction between different agents. Nevertheless, the choice of the criteria applied is justified with the links of the water security and corporate water stewardship discourse to democratically mandated institutions such as the UN and the South African government that have themselves sanctioned those criteria. For a broader understanding of corporate legitimacy as actors of water further studies applying more locally grounded sociological criteria would also be needed.

When it comes to the replicability of the research findings, the case studies chosen are argued to be critical to and representative of the broader corporate engagement phenomenon. It is acknowledged, however, that corporations vary greatly by sector and by their company forms, statutes and sizes, internal governance, resources and operation location (Newborne and Mason 2012). The strength of public governance matters significantly to their relative power to affect water security, management and governance and their drivers and legitimacy to engage. By focusing on cases with remarkable power asymmetry between the corporations and other actors, the study has aimed to set the minimum standards applicable to a wide variety of setting and contexts

of corporate engagement on water.

Further case-studies, comparative as well as longitudinal, of different scales and settings of water-using corporate engagement on water and corporate agency in them are strongly encouraged. The analytical framework constructed in this dissertation is proposed to provide one tool for the analysis. As noted, besides further testing of the framework, further studies applying more locally grounded sociological criteria are also called for.

Water-using corporate engagement on water is also proposed to be studied from different theoretical perspectives than those adopted in the recent research and in this dissertation. The new approaches could range from history to political ecology, from water ethics to behavioural change theories. However, practice and evidence from the ground should inform theory due to the interdisciplinary and transdisciplinary nature of the topic and its new and evolving nature (see also Hepworth 2012). Comparison and lesson learning between different sectors, company forms, statutes and sizes, and water and other stewardship standards and initiatives such as those of the Forest Stewardship Council, the Marine Stewardship Council and the various commodity roundtables, especially regarding their legitimacy as governance instruments and institutional frameworks, are also encouraged. The meaning of the architectures and dynamics of WTO and other international trade treaties, Codex Alimentarius and specific value chains and networks to water security, management and governance should also be investigated in a greater detail than what has been possible within the limitations of this research. Agency of the other key actors in the growing corporate engagement on water, notably NGOs, development and investment banks and other institutional investors, international donors and national governments, should as well be scrutinised (see also Sojamo, Hepworth et al. 2014). Last but not least, the reasons behind the public sector failure to regulate the corporations should be carefully unpacked, looking in greater depth into formal and informal state-corporate alliances.

Finally, as noted, academics and other independent researchers are encouraged to take a more active role in scrutinising and facilitating the multi-actor water governance processes water using-corporations participate in, especially in locations where the mandated public institutions lack the capacity to do so.



## 7. CONCLUSIONS

The past decade has presented and upsurge of water-using corporate awareness of their dependency on the limited but shared water resources, the resulting water risks to business, and the need to mitigate those risks. Due to the position and capacity of the corporations, their growing engagement on tackling water challenges from global to local level has been welcomed by proponents of cross-sectoral and integrated approaches to water management and governance. Because of their very same power, however, corporate engagement on common pool – public good water resources has also raised fears of private capture of institutional processes and resources. Nevertheless, comprehensive investigations into the roles the largest water-using corporations have played regarding the water challenges and elaborations on what their possibilities are in solving those challenges have been few to date.

To contribute towards developing the theory and practice of corporate engagement on water for sustainable and just outcomes, this dissertation sought out to investigate when and how the largest water-using corporations have authority as actors on water. In other words, the study aimed to improve understanding of water-using corporate agency in water security, management and governance.

The overarching research question of the dissertation was:

**RQ:** *What is the agency of the largest water-using corporations in water security, management and governance?*

The interrelated sub-questions were:

**SQ1:** *How do the largest water-using corporations affect water security, management and governance? What is their power, i.e. position and capacity, and what are their strategies to engage?*

**SQ2:** *Why do the largest water-using corporations engage on water security and in water management and governance? What are their drivers?*

**SQ3:** *When and to what extent is the engagement of the largest water-using corporations on water security and in water management and governance justified? What is their legitimacy?*

An analytical framework exploring the research questions was constructed and applied to three case studies of corporate engagement on water: 1) corporations dominating the water-intensive global agro-food value chains and networks, 2) corporations engaging in the development of corporate water stewardship principles and practices, and 3) corporations engaging in corporate water stewardship initiatives and projects in South Africa. The case studies were chosen as critical and representative for the research,

illustrating the multi-level, multi-actor and polycentric actor networks and architectures of water management and governance extending beyond the water sector.

The findings on the **overarching research question** of the dissertation show how water-using corporate power has become increasingly central to processes of water management and governance. Corporate authority as actors of water, and accordingly, their agency remains debatable though against their drivers and the legitimacy criteria developed, and thus demands further scrutiny and guidance.

In detail, findings on **SQ1** show that the largest water-using corporations have remarkable instrumental, structural, ideational and discursive power to affect water security and water management and governance from global to local level. They are also becoming increasingly active and proactive in their water engagement strategies and tactics. The corporations dominating the agro-food value chains and networks are identified to be a part of a Western ‘virtual water hegemony’, and the corporations engaging in the development of the corporate water stewardship principles and practices to be contributing to an emerging transnational water governance regime.

Findings on **SQ2** show that the proactive forms of corporate engagement on water have predominantly stemmed from water scarcity, stakeholder pressure and public sector failure to act as the regulator and custodian of water resources, the latter being an amplifying factor for a variety of corporate water risks. Problematically, as also discussed in the developing theory and practice of corporate water stewardship, the weakness of the public sector in developing contexts such as in South Africa continue to undermine the sustainable and equitable execution and outcomes of the corporate engagement processes.

Findings on **SQ3** show that the legitimacy of corporate engagement on water is in many ways questionable. The corporations studied are yet to fully embrace water in their strategic cores. With focusing on water from limited perspective they scale out their broader responsibility, and arguably risk theirs and others longer term water security. Equal participation, accountability and transparency are found to be in need of improvement in all the engagement processes in focus. Confirming the findings in previous literature, the outcomes of the processes are shown to include much needed drive, resources and new type of multi-stakeholder collaboration in water management and governance, but also threats of fragmentation, re-inventing wheels and private capture of public institutional processes and resources.

The findings of the dissertation point out to the need to more openly acknowledge and limit the most concentrated forms of corporate power in corporate water stewardship interaction and broader water management and governance processes alike; to more carefully evaluate and enhance corporate legitimacy to engage on water demanding validation with full disclosure and water stewardship standards and certificates; and to support stronger public institutions to regulate the corporations, and the civil society to hold both the public sector and the corporations accountable.

The analytical framework constructed in the dissertation is proposed to be further tested and applied to scrutinise and guide water-using corporate engagement on water. Further case studies, comparative and longitudinal, and investigations of corporate agency from multiple theoretical and methodological perspectives are encouraged.

To conclude, water-using corporate engagement on water security, management and governance is no silver bullet solution to global and local water challenges. Natural

to most of their business logics, corporations have vested interests in who gets water, how and why. However, not considering the varied roles water-using corporations play on water would also be a wasted opportunity to understand a phenomenon with major implications to processes on water and their outcomes. When properly regulated, corporations of different types and sizes may also act as powerful change agents when drastic action to improve water security for all is required. When opened to broader participation and with increased uptake, the corporate water stewardship approach holds great promise in improving corporate practices and supporting public sector and civil society actors alike.

Finally, more constructive debate is called for on the roles different water users, corporations as one powerful group among them, can and should play in using and taking care of our shared natural resources.



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