

Pro gradu – Master’s Thesis

**Political economy and ecology of water control –
dynamics of water policy reform and water justice in
Taita Hills, South-Eastern Kenya**

Marinka Räsänen



University of Jyväskylä

Department of Biological and Environmental Science

Environmental Science and Technology with a specialization in
Development and International Cooperation

4.12.2015

UNIVERSITY OF JYVÄSKYLÄ, Faculty of Science
Department of Biological and Environmental Science
Environmental Science and Technology, Development and International Cooperation
Master's program

RÄSÄNEN (née LEPPÄNEN),

MARINKA, J.: Political economy and ecology of water control –
dynamics of water policy reform and water justice in Taita
Hills, South-Eastern Kenya

Master of Science Thesis: 117 p. (3 appendixes 6 p.)

Supervisors: Adj. Prof. Paola Minoia (HYU); Dr. Prasad Kaparaju,
Prof. Jeremy Gould, Prof. Tuula Tuhkanen (JYU)

Inspectors: Prof. Tuula Tuhkanen, Prof. Jeremy Gould, Prof. Jussi
Kukkonen

December 2015

Key words: water services, political economy, political ecology, neoliberalism, justice

ABSTRACT

Access to water by rural communities in the developing countries is shaped by various intertwined factors, including physical characteristics of the water cycle i.e. water availability; technical, financial and organizational means of establishing and managing water infrastructures; the social organization around water i.e. the formal and informal regulations and laws regarding water rights and responsibilities thereof. These historically embedded dimensions of water control are further shaped by the political economy of the state and its development. In Kenya, the (neoliberal) water policy reforms embedded in the Poverty Reduction Strategy and launched by the Water Act 2002, have commercialized water services and changed the sector institutional framework. Through a broad theoretical framework of political economy and ecology the study analyzed the styles of reasoning embedded in the discourses and practices of the reform and its translation into the waterscape of Taita Hills, South-East Kenya, including the intended and unintended effects with regard to distribution and participation dimensions of water justice. The study used ethnographic methods and included a document analysis of the key Kenyan water policy reform documents, and an extensive fieldwork during which historical documents on the waterscape of Taita Hills were collected and interviews with households and key actors in water governance were carried out. The results indicate that the new institutional arrangements and reform styles of reasoning are based in new economics of regulation and neo-institutional economics that programmed the regulation of the water sector in microeconomic terms. The reforms were only partially translated in the Taita Hills with intended and unintended effects regarding distribution of water and participation. While the reform contributed to improved access to water by poorer residents, it did not enable the redistribution of water to most marginalized areas due to its demand based regulation and inadequate consideration of local politics. The wealthy part of the society with private land rights and capital remained thus 'entitled' to the local water resources; political patronage remained as means for the local groups to access capital for water development.

JYVÄSKYLÄN YLIOPISTO, Matemaattis-luonnontieteellinen tiedekunta
Bio- ja ympäristötieteiden laitos
Ympäristötiede ja –teknologia, Kansainvälisen kehitysyhteistyön maisteriohjelma

RÄSÄNEN (os. LEPPÄNEN),

MARINKA, J.:

Veden hallinnan poliittinen ekonomia ja ekologia –
vesireformin dynamiikkaa ja vesioikeudenmukaisuus
Taita-vuorilla, Kaakkois-Keniassa

Pro gradu –tutkielma:

117 s. (3 liitettä 6 s).

Ohjaajat:

Dos. Paola Minoia (HYU); PhD Prasad Kaparaju, Prof.
Jeremy Gould, Prof. Tuula Tuhkanen (JYU)

Tarkastajat:

Prof. Tuula Tuhkanen, Prof. Jeremy Gould, Prof. Jussi
Kukkonen

Joulukuu 2015

Avain sanat: Vesireformi, poliittinen ekonomia, uusliberalismi, oikeudenmukaisuus

TIIVISTELMÄ

Kehitysmaissa maalaisyhteisöjen ihmisten vedensaantiin vaikuttavat monet toisiinsa kietoutuneet tekijät: veden kiertokulun ominaisuudet ja veden saatavuus; vesi-infrastruktuurin tekninen, taloudellinen ja hallinnollinen organisoituminen; sekä veden käyttöä ympäröivä sosiaalinen normisto, joka määrittää paitsi virallisia myös epävirallisia veden käyttöön liittyviä oikeuksia ja vastuita.

Nämä historian kulussa muovautuneet vedenhallinnan muodot ovat sidoksissa myös valtion poliittiseen taloustilanteeseen ja sen kehitykseen. Keniassa kansallisen köyhyysvähentämisstrategian määrittämät (uusliberalistiset) vesisektorin uudistukset, jotka käynnistyivät 2002 vesilain astuttua voimaan, muuttivat sektorin institutionaalisen viitekehyksen ja muun muassa kaupallistivat vedenjakelun.

Tässä tutkimuksessa analysoitiin Kenian vesireformin diskurssien ja käytäntöjen sisältämiä ajattelumalleja sekä niiden käytäntöönpanoa ja vaikutuksia Kaakkois-Keniassa sijaitsevien Taita-vuorten 'vesimaisemassa' erityisesti oikeudenmukaisuuden näkökulmasta nojaten poliittisen ekonomian ja poliittisen ekologian teoreettisiin viitekehyksiin. Tutkimuksen keskeisenä metodologiana käytettiin etnografista tutkimusotetta. Tutkimusainesto koostui keskeisistä Kenian vesireformiin liittyvistä laeista, säädöksistä ja strategioista; kenttätutkimuksen aikana kerätyistä Taita-vuorten vesimaisemaan liittyvistä historiallisista dokumenteista sekä alueen tärkeimpien vesihallinnosta vastaavien asiantuntijoiden, toimijoiden, paikallisten erityisryhmien ja kotitalouksien kanssa toteutetuista haastatteluista.

Tulokset osoittavat, että uudet vesireformin institutionaaliset järjestelmät ja käytännöt perustuvat uussääntelyn- ja uusinstitutionalistisen talousteorioiden ajattelumalleihin. Näiden ajattelumallien keskeisenä logiikkana on, että paras ja tehokkain hyvinvoinnin (ja tässä tapauksessa veden) jakautuminen saadaan aikaan, kun muutoin kysynnän ja tarjonnan

mukaan toimivia (vesi) markkinoita säännellään kilpailun, hinnoittelun ja kysynnän mukaisesti. Toisin sanoen, sääntelyn avulla luodaan oikeudenmukaisesti toimivat markkinat. Oikeudenmukaisuus toteutuu, kun markkinoita korjataan osallistamalla ihmisiä päätöksentekoon sekä kohdentamalla mahdollisia tukia tarkkaan vain niitä oikeasti tarvitseville.

Vaikka vesireformin uudistukset olivat vain osittain välittyneet osaksi paikallisia käytänteitä ja ajattelumalleja, uudistusten oikeudenmukaisuuskäsitykset ja käytänteet vedenjakelun suhteen näyttäytyivät kuitenkin Taita-vuorten vesimaisemassa. Köyhien asukkaiden vedensaanti asukaskeskittymissä oli osittain parantunut vesireformin käytänteiden ja köyhille kohdennettujen erityistoimenpiteiden ansiosta. Vedenjakelun perustaminen marginaalialueille oli kuitenkin edelleen haastaavaa muun muassa siksi, että vesi-infrastruktuurin laajentamista määrittivät ensisijaisesti yksityiset maa- ja metsäoikeudet, yksilöiden tai ryhmien välinen kilpailu pääomasta, alueen alhainen tulotaso sekä kustannustehokkuus. Vaikka lain mukaan juomavedenjakelu kuului julkisen sektorin piiriin ja sen tuli vastata ensisijaisesti ihmisten perustarpeisiin, periaatetta oli vaikeaa toteuttaa käytännössä, sillä uudistukset jättivät huomiotta rakenteelliset seikat, kuten historiasta periytyneet maa- ja metsäoikeuskiistat, sekä alueellisen ja rakenteellisen köyhyyden. Näin ollen varakkaat yksityishenkilöt turvattuine maa- ja metsäoikeuksineen ja pääomineen sekä paikallisryhmät poliittisine kytköksineen säilyttivät käytännössä etuoikeutensa käyttäen vesivaroja ja perustaa vedenjakelujärjestelmiä; osittain myös julkisen juomavedenjakelun kehittämisen kustannuksella.

Kehityspolitiikan näkökulmasta tulokset osoittavat, että yksiulotteisiin malleihin perustuvat lakimuutokset ja strategiat eivät riitä vedenjakelun parantamisen kaltaisten laajojen ongelmien ratkaisuksi, vaan tarvitaan tilaa myös avoimemmalle, kotoperäiselle oppimiselle, jonka on mahdollista muuttaa epäoikeudenmukaisiakin yhteiskunnan rakenteita.

Table of Contents

1	INTRODUCTION	1
2	THEORETICAL FRAMEWORK.....	3
2.1	Political economy and development policy	4
2.1.1	Development policy and translation	4
2.1.2	Polanyian political economy – old institutional economics	6
2.1.3	New Institutional Economics - neoliberal development?	8
2.1.4	Neoliberalism and Collier’s infrastructural reform analysis	10
2.2	The political ecology and economy of water control – water services and improving access to water	14
2.2.1	Understanding translation – waterscape and the water justice framework ..	15
2.2.2	Water services and policy approaches – beyond institutionalism?	17
2.2.3	Political economy of water services – the market approach and its critique	21
3	RESEARCH QUESTIONS	23
4	METHODOLOGY – DATA COLLECTION AND ANALYSIS	25
4.1	Justifying methodology - critical realism and ethnography	25
4.2	Ethnography as research method	26
4.2.1	Ethnography, reflexivity and ethics in the field and back home - limitations of the study	26
4.2.2	Expert interviews	27
4.2.3	Household interviews	29
4.2.4	Workshops	30
4.3	Data analysis	31
4.3.1	Discourse analysis	31
4.3.2	Analysis process – primary and secondary	32
5	CONTEXTUALIZING THE CASE STUDY.....	33
5.1	Historical context of water policy reform in Kenya	33
5.1.1	Background of the reform - colonial heritage and the developmental state	33
5.1.2	Negotiating reform as part of new development policy	36
5.2	Waterscape of Taita Hills	36
5.2.1	General geographical and political characteristics of the case study area....	36
5.2.2	Historical land control as cause of structural inequality in Taita Hills	41
5.2.3	Brief history of water control in the Taita Hills –pipelines and modernity ..	43
5.3	Current organizational structure of water actors in Kenya and Taita Hills	48
5.3.1	The institutional framework of the Kenyan water sector after reform 2002	48
5.3.2	Water service providers in the Taita Hills area	51
6	RESULTS	54
6.1	Kenyan water policy reform analysis – the legal framework	54

6.1.1	Water justice and the legal framework for water resource allocation and establishment of water supply infrastructure.....	55
6.1.2	Market enabling regulation and corporate governance - the changing micro-economy of water supply	59
6.1.3	Equity and socially responsible commercialization – human right discourse and the creation of consumer-citizen.....	64
6.1.4	Summary – conceptualizations of justice	66
6.2	Translation of reform principles in the waterscape of Taita Hills	68
6.2.1	Socially responsible commercialization and corporate governance of the public water company	69
6.2.2	Commercialization and the micro-level regulatory framework	72
6.2.3	Water projects, corporate management and social tariffs.....	75
6.2.4	Demand management and water scarcity	79
6.2.5	Poverty and creating the sovereign consumer	82
6.3	Society and tensions of translation - intended and unintended effects.....	86
6.3.1	Socially responsible commercialization and market-programming of redistribution – intended and unintended effects.....	86
6.3.2	Privatized water control – a challenge to developing water supplies, the unintended effect of private property	90
6.3.3	Politics of water services and redistribution.....	94
6.3.4	Justified thefts? Tensions in translating reform principles	96
6.3.5	Regional politics of water control – bringing water to people	98
7	DISCUSSION.....	100
8	CONCLUSIONS.....	109
	ACKNOWLEDGEMENTS	112
	REFERENCES.....	113
	APPENDIX 1.....	118
	APPENDIX 2.....	120
	APPENDIX 3.....	122

List of Figures

Figure 1. Water service structure in district level prior to reforms (World Bank 2002).....	35
Figure 2. Study area (Hohenthal et al. 2015)	37
Figure 3. Specific study area, the Taita Hills (Hohenthal et al 2015)	39
Figure 4. Summary of historical context of water sector in Taita Hills and Kenya.....	48
Figure 5. Water governance structure in Kenya after reform 2002. The institutions were established in 2005. (MoWI 2013)	49
Figure 6. Mwatate Catchment map with important water infrastructure (Hohenthal <i>et al.</i> 2015). Note: the drawn pipelines are rough estimations of the routes of the pipelines.....	52
Figure 7. Wundanyi catchment and important water infrastructure (Hohenthal <i>et al.</i> 2015). Note: the drawn pipelines are rough estimations of the routes of the pipelines.	53

List of Tables

Table 1. Key informants interviewed in the course of the research.....	28
Table 2. Households interviewed by area	30
Table 3. Example of analysis framework for initial content analysis based on grounded (emic) approach	32
Table 4. Population distribution in the study area (TTCG 2013)	38
Table 5. The operational details of the two major urban water supplies (TAVEVO 2013) .	51
Table 6. Major community-based water supplies in research area	53
Table 7. Summary of key aspects of water justice in reform documents	67
Table 8. The operational details and tariffs of the major community water projects given by their chairmen in Wundanyi and Mwatate Catchments	78
Table 9. Lowland households and their views about access to water	84
Table 10. Average expenditure on water and its percentage of average monthly income in the study area. (Source: Hohenthal et al 2014)	85

List of Acronyms

ARTTD	Annual Report Taita-Taveta District
ASAL	Arid – and Semi-arid Land
CAAC	Catchment Area Advisory Committee
CBO	Community Based Organization
CDF	Constituency Development Fund
CWSB	Coast Water Services Board
CWP	Community Water Project
DANIDA	Danish Development Aid
DC	District Commissioner
DDO	District Development Office
DDC	District Development Committee
DFRD	District Framework for Rural Development
DO	District Officer
DPHO	District Public Health Office
HIPC	Highly Indebted Poor Countries
IFI	International Financial Institution
IMF	International Monetary Fund
IWRM	Integrated Water Resource Management
KANU	Kenya African National Union
KWS	Kenya Wildlife Service
LASDAP	Local Authority Service Delivery Action Plan
MoWI	Ministry of Water and Irrigation
MoLG	Ministry of Local Government
NARC	National Rainbow Coalition
NDMA	National Drought Management Authority
NEMA	National Environment Management Authority
NGO	Non-governmental organization
NIE	New Institutional Economics
NPM	New Public Management
NWSPC	National Water Services and Pipeline Corporation
NWSS	National Water Services Strategy
PRS (P)	Poverty Reduction Strategy (Paper)
SAP	Structural Adjustment Program
SPA	Service Provision Agreement
TAVEVO	Taita-Taveta Water and Sewerage Company
TTCG	Taita-Taveta County Government
TDDP	Taita District Development Plan
UN	United Nations
WHO	World Health Organization
WASREB	Water Services Regulatory Board
WRMA	Water Resource Management Authority
WRUA	Water Resources Users Association
WSB	Water Service Board
WSP	Water Service Providers
WSTF	Water Services Trust Fund

1 INTRODUCTION

Water availability and questions of accessing water for various purposes, have been key questions for humans throughout history, defining even rises and falls of civilizations. Indeed, the recent policy slogan “*water is life*”, while being an obvious statement, is still true in many ways, as the rich diversity of life and human societies and civilizations on Earth are sustained by water. Importantly, the ability to control water as Mollinga (2008) argues, has been and continues to be an important part of societal development in all its aspects. History shows however (see Castro and Heller 2009), that especially in the early capitalist states, the control of water and its distribution by piped networks served primarily the purpose of industrialization and economic growth. Only later did water become a public health question, mostly in the urban areas, where water networks were extended by public funds (ibid.). As Mollinga (2008) argues, the questions of allocating and distributing water for different uses and needs have been centrally political economic questions about the role of the state, market and society in achieving the various ends sought by the control and distribution of water.

Improving access to water especially for drinking purposes has been an important part of the international development agenda for several decades, especially since the 1977 United Nations Water Conference. In the recent years, immense bodies of think tanks, policy tools and networks have been created to tackle the problem of water scarcity and the fact that at least 783 million people remain without access to an improved source of drinking water (as WHO defines it) mostly in the developing world (UN 2012). Key trends in the water policy arena over the past 20 years since water was declared an economic good in the International Conference on Water and the Environment in Dublin in 1992, have been concerned with increasing the role of the market or the private sector in water service delivery. However, privatizations that took place in the late 1990’s in England and Wales (Bakker 2005), South Africa, Ghana, and Latin American countries like Bolivia and Chile (Bauer 2012; Castro 2008), created raids and protests against soaring water prices launching a debate over whether water should be treated as an economic good or a human right (Bakker 2007). In the past decade, and as a response to these public protests against full privatization, the less radical water policy reforms, such as those in Kenya, have called for commercializing and corporatization of water services in the hope of increasing their

efficiency and financial sustainability and by so doing, improve the access to water by the poor.

The recent discussions on water policy have thus focused on two lines. On one hand the economically oriented water reforms driven by the World Bank and the water think tanks around the world have been looked from a critical point of view, arguing against the idea that water distribution should be organized based on market or market-like principles, often studied under the rubric of neoliberalism (Goldman 2007), with the claims that it will and has created injustice in the society. On the other hand, mainstream advocates of these reforms see the increased role of market and private sector as the solution to the problems of access to water and in fact, also claim that this path will lead to improved and more equitable access to water by the poor.

So who is right? It seems that in the end the question is not about values as both sides claim for the fact that indeed water is a human right and should be accessible to all. Rather the important question is, then, how these values are articulated and what their significance is in practical terms. To do this and to go *beyond* an ‘imperative’ analysis of these kinds of (neoliberal) reforms, often common in the critical literature, which some scholars as Collier (2011) among others (see also Bakker 2007; Bakker 2010; Harrison 2010; Njeru 2013) suggest simplifies and obscures the practical and technical aspects of these reforms, implies a more careful practical and discursive analysis of what takes place in actual (water) reform processes, which could be called ‘neoliberal’, and analyse how entire ways of thinking, institutional arrangements and their practices are transformed. Moreover, investigating the politics of the reforms from an outside position enables a more truthful analysis and avoids becoming political itself.

This study therefore, attempts a critical, ‘technical’ inquiry into Kenyan water sector reform and in particular, in its styles of reasoning about justice and equity with regard to distribution and participation embedded in its institutional framework, and asks how these conceptualizations translate in practical terms, in the specific context of Taita Hills, South-East Kenya. Furthermore, the study aims to examine the stakes of these forms of reasoning in terms of their intended and unintended effects for (re)distribution and participation. The theoretical framework of the study draws from political economic concepts (distinguishing

between the old and new institutionalist approaches) that help to understand the reform style of reasoning, complemented by the findings of nuanced studies of neoliberal reforms such as that of Collier (2011). To understand the reform styles of reasoning with regard to the subject matter of water services, the literature on water service delivery is also widely used, notably the collection of studies presented by Castro & Heller (2009) and the historical approach of Katko *et al.* (2009). Moreover, the concept of translation used by Mosse (2005) to describe the interaction between development policy and practice is used to analyze the water policy reform out-roll in the context of Taita Hills. In addition concepts from the political ecological framework (Neumann 2005) that studies nature-society interfaces from political economic perspective, such as the concept of waterscape (Swyngedouw 2009a), are used to contextualize this process of translation. Furthermore, the intended and unintended effects of the policy translation are assessed using a water justice framework that looks at questions of control and access to water from (re)distributional and participatory perspectives (Zwarteveen and Boelens 2014). It is worth noting, that the framework of political economy/ecology therefore, does not aim to politicize or take sides of water service management but rather bring water politics into the centre of inquiry. Therefore, rather than determining what is water justice, the study aims to open up the very concepts of justice that shape the politics of water reform, the relationship between citizens, the state and the market, and how in local realities these become articulated and problematized.

The structure of the thesis is as follows: First the theoretical framework is presented, after which the research questions are clearly outlined; then the methodology is described after which the context of the case study is presented; then results from the reform analysis and its empirical translation are presented, then discussed in light of the theoretical framework, and finally conclusions are drawn.

2 THEORETICAL FRAMEWORK

The major theoretical orientations of this study can be divided broadly into the framework of political economy and political ecology. Within these broader frameworks, various theoretical concepts are examined and framed to answer the questions of the study.

2.1 Political economy and development policy

The Kenyan water sector reforms can be seen as part of the new development policy aiming to change the sector wide approaches to development like infrastructure. The study of development as intentional (in the form of policies such as those to do with increasing people's welfare by access to water) but also non-intentional is inevitably a study of global and local political economy, the relations of society, the economy and polity. For this study, however, it is important to distinguish between the old and new political economy, as we shall see, the ideas of the latter are to be found in the international development agendas shaped by the global economic actors like the World Bank, that influence the policies and practices of societies in the South.

However, in order to make sense of the attempted water reforms, they need to be first contextualized into the wider framework of development policy. As development policy aims to change practices on the ground level, either through micro-level interventions in the form of projects or as in this case, through 'sector wide approaches' attempting to change the institutional framework of the entire water sector, research investigating this 'translation' process is first useful to review.

2.1.1 Development policy and translation

The relationship between policy and practice is carefully analyzed by Mosse (2005) in his self-reflexive ethnography of development practice in South India, asking not whether, but how development works. While Mosse's findings are based on a case study of a development project, he argues that these findings have even greater relevance for the move towards sector wide development and poverty reduction strategies as *"that only increases the size of the black box of unknowing between development policy and its effects."*

Indeed there is a vast amount of critique toward development public policy, arguing that it instrumentalizes social life as it acts on a simplified premise that policy can be turned into reality by good design. However, while this critical view maintains that development and its discourses have institutional effects like maintaining relations of power and ideological effects of depoliticisation (Ferguson 1994), Mosse (2005) argues that both the critical and the instrumentalizing view have often blocked the view from the micro-level events and power relations, for which a nuanced and insightful ethnography is needed. Some subtler

approaches have found that “*while ‘beneficiaries’ may consent to dominant models of development design – using the authorized scripts given to them by projects – they make of them something quite different*” reflecting the “*hidden transcripts*” and agency of people (ibid. p. 7).

Through his analysis he proposed, among others, that “*policy primarily functions to mobilize and maintain political support, that is, to legitimize rather than to orientate practice*” (Mosse 2005, p. 14), reflecting the reality that “... *in order to “work” policy models ... have to be transformed in practice... and translated into the different logic of intentions, goals and ambitions of the many people and institutions they bring together*” (ibid. p. 232). In this vein Mosse also addresses the question of the relationship between ideas and actions with the view that “*in all cases it is people who have ideas and who influence institutions*” and that “*ideas have to be understood in terms of the institutions and social relationships through which they are articulated*” (ibid.). Moreover, he proposes that “*success and failure are policy-oriented judgments that obscure project effects*” (ibid. p. 19). Based on his village-level analysis he shows that despite the tendency of development projects to obscure policy vision, they may still have positive socio-economic effects for thousands of people. However, he argues, that these effects are often “*equivocal, unexpected, contradict legitimizing policy models or are unnoticed by them*” and importantly have often more to do with “*infusion into regional and historical processes of change*” concerning aspirations for modernity. In terms of marginalized communities this may mean alliance making with those with better access to resources. In this sense, he argues that “*development rarely works counter to existing patterns of power*” (Mosse 2005).

With regard to the interest of this study with development in the sense of infrastructural reform process of water services in Kenya, Mosse (2005) points out that “*these old instruments of development (infrastructure building) now have to be connected to new policy goals as there is a constant need for new theory to disburse funds meaningfully.*” He further argues that the problem is that this “*policy machinery fabricates its separation from political economy and becomes isolated from the local or vernacular to which it is nonetheless materially connected through fund flows, information and in other ways.*” (ibid.) In this sense he argues that ethnographic research has a contribution to make

to knowledge about both these ‘fabrications’ and the ‘downstream effects’ of policy (ibid. p. 238). This is also what this study attempts.

2.1.2 Polanyian political economy – old institutional economics

The key concepts of political economy used in this study to make sense of the policy reform and its translation, draw from economic sociological theories of Karl Polanyi (1944) and Max Weber (2009) who studied modern civilizations and the economic and social relationships within them. Economic sociology defines ‘economy’ as *”body of activities which are usually carried out by members of a society in order to produce, distribute, and exchange goods and services (Trigilia 2002).”* A central concept of economic sociology introduced by Polanyi is ‘embeddedness’, reflecting the understanding that the economic system is embedded in the society, in its social relationships and actions. These relationships and actions form ‘institutions’ which orientate and regulate the economic activities. In this sense, as Portes (2010) describes, *”embeddedness for Polanyi is mostly a matter of how the state and other social institutions regulate and influence the markets.”*

Another central concept in economic sociology is the notion of exchange or as the newer streams call it, ‘transaction’ (North 1977). In the neoclassical view of economics the main form of exchange or trade of goods is through market exchange, where prices are determined by ‘self-regulating’ markets regulated only by supply and demand. According to Polanyi, however, market exchange is only one among other forms of economic modes of exchange. In his studies of past civilizations and other societies, he had seen that modes of exchange were based in the social institutions of family and kinship etc. and took forms of ‘reciprocity’ or ‘redistribution’. Reciprocity can be described as obligatory gift giving between kin, friends and other social organizations. Redistribution, on the other hand, can be described as obligatory payments to central political or religious authority, which uses the receipts for its own maintenance to provide community services, and as an emergency stock in case of individual or community disaster. In the modern economies redistribution refers to taxes and modes of equalization of wealth differences by the government, determined by political decision (North 1977). Polanyi also noted that while markets had always been present in societies, it did not necessarily imply ‘economizing’ behaviour, and hence he talked of ‘marketless’ trade, without price-making markets as a common way of exchanging goods in many societies.

In his major piece of economic analysis of the liberal society, '*The Great Transformation*', Polanyi (1944) analysed the self-destructive mechanism of the market and '*the self-defence of society*' against it. This self-defence created a '*double movement*' where network of measures and policies were integrated into powerful institutions designed to check the action of the market relative to labor, land and money (Polanyi 1944), re-embedding the markets under regulation of the state and society. However, in Polanyi's view the problem of modern capitalism was that "*instead of the economic system being embedded in social relationships, social relationships were now embedded in the economic system*" (Portes 2010), referring to the idea that market relations would become norms determining social action. Another problem with modern capitalism to Polanyi, was the fact that activities and elements of life were made into 'goods' in the economy, or 'fictitious commodities', without being 'produced by humans' (Trigilia 2002). Oppressing these elements to the mechanism of a 'self-regulating' market had in his opinion, destructive consequences for society.

Another important concept in economic sociology and in understanding relationships between economy and society is also Weber's rationality (Weber 2009). In terms of social action, Weber defines four different types of rationalities that guide human action namely 1) purposive or instrumental rationality, referring to pursuing certain ends in a calculative manner; 2) value or belief oriented rationality, referring to social action with intrinsic value, which does not mean to gain success, 3) affectual rationality, meaning emotionally oriented and in the border of whether being rational, 4) traditional or conventional rationality, referring to action determined by habituation of doing things (Weber 2009). In terms of economic action and systems, Weber defines two major forms of rationality, namely formal and substantive rationality (ibid. p. 184 – 185). Formal rationality of an economic activity is assessed "*according to the degree in which the provision for needs, which is essential to every rational economy, is capable of being expressed in numerical, calculable terms.*" Substantive rationality of economic activity, on the other hand, is oriented to ultimate value-ends of some kind, including political, ethical, utilitarian or social equality among others (ibid.). In this sense, there are many possible standards of value that are 'rational'; socialistic standards involve elements of social justice and equality.

2.1.3 New Institutional Economics - neoliberal development?

The Polanyian "old" institutionalist framework has been coupled with new economic theories that rely on more individualistic approaches and understandings of rationality inherited from neoclassical economic theories, namely New Institutional Economics (NIE). Importantly, scholars like Craig and Porter (2006) and Harrison (2010) argue that this line of thought can also be found embedded in the development policies of World Bank, and importantly, that it tells something about the entire 'project' of neoliberalism.

According to North (in Harriss *et al.* 1995), NIE builds on the framework of neoclassical economic theory, but abandons the notion of instrumental rationality and keeps the fundamental assumption of scarcity and competition, the basis of choice theory underlying microeconomics. Abandoning instrumental rationality means re-discovering institutions as shaping economic rationality (ignored by neo-classical economics) with a central focus given to studying social and legal norms and rules that underlie economic activity. Further, NIE accepts the incompleteness of information available to individuals in making their choices (*ibid.*). In this sense, NIE goes back to Polanyian view of the economy being embedded in society, but rather than seeing the state as a regulating the destructive market, it sees the state as an enabling institution builder (of law, financial and policy transparency and market information) and as basis to the emergence of efficient and competitive markets leading to economic growth. Harrison (2010) elaborates further that the approach asks, how freedom and rights can be constructed to the promotion of socially beneficial competition.

In relation to development policy, Craig and Porter (2006) argue using a Polanyian political economic framework, that the new turn of development agenda (specifically adopted by the World Bank since the failures of Structural Adjustment) focusing on 'good governance' and poverty reduction has taken a form of what they call "*neoliberal institutionalism*" that follows the argumentation of new institutional economics (NIE). This is also found by Harrison (2010) who argues that the Bank has adopted NIE along with rational choice theory and New Public Management (NPM) as guiding theoretical starting points of its understanding of political processes, that drive its governance policy reforms especially in the African context (*ibid.* p. 66 – 67). Harrison (2010) further argues that the new institutionalism based on NIE adopted by World Bank, has made them to "*pay*

attention to state in a way that is not simply concerned with minimizing bureaucracy or introducing market proxies to administration". However, he says that institutionalism focuses on the *"state as a market complementing institution"*, with properties not replaceable by or analogous to free market and that in this vein, the public sector reform only aims to provide elements necessary for a well-functioning market economy leading often to even a kind of revived statism (Moore 1999 in Harrison 2010). Furthermore, Harrison (2010) argues that rational choice and NPM provide the Bank with a theory of political agency in which *"political agency is essentially individualized and motivated by balance of preferences costs and benefits."* Rational choice affiliates with neoclassical economics and is based on methodological individualism which sees social (and political) actors as motivated by their individual preferences. In this vein society *"is an aggregation of individual preferences"* and following NIE, *are bound by institutions; states are institutions that structure incentives of individual public functionaries* (ibid.). NPM is further based in rational choice feeding into a theory of public action. Furthermore, NPM is based on two basic claims: 1) *"state should intervene in the economy as little as possible"* and 2) *"state agents act to maximize their utility according to the structure of incentives in which they are embedded"* (ibid.). This approach to the public sector reform, Harrison (2010) argues, aims thus to make it function according to private sector principles of competition, that will increase performance and efficiency by implementing "incentivized" rewards. To sum up, Craig & Porter (2006) as well as Harrison (2010) see that these theoretical lines of thought could be named as being 'neoliberal'.

As elaborated further by Craig & Porter (2006) these second generation reforms, have focused on governance and building 'human capital' via basic services (including water) as well as empowering vulnerable groups. They further argue that this shift in Bank's policy after Structural Adjustment was a response, in Polanyian terms, to the rise in corruption and political patrimony that rivaled the void of government after the cuts in public sector. Markets were the answer to providing efficient and lower cost services as choice would replace the bribal of the patrimonial government. Following their Polanyian analysis of the double movement of dis-embedding and re-embedding, the social relations of service provision were *dis-embedded* from their existing corrupt conditions by turning the formerly social goods into commodities securing fair allocation by *re-embedding* the

markets into a regulatory framework. The authors argue however, that this turn could ‘neoliberalize’ services and thus *dis-embed* them again (Craig & Porter 2006, p. 9-11).

The problem of these ideas that could be called ‘neoliberal’, according to Harrison (2010) is that “*these ideas collectively produce a discourse that represents neoliberal markets as embedded in societies...which would serve everyone’s best interests (through a combination of assumptions about positive-sum competition and Pareto social optimality).*” In his view this model fails to capture bulk of social interaction, “*replacing ideas of state with considerations of efficiency, turning moralities into concerns with fairness in the market; and forms of trust, gift-giving and reciprocity into social capital; families into households and knowledge into skills and education*” (ibid.). Ultimately he makes the case that neoliberalism has in fact, become strongly embedded in already existing practices and traditions and by so doing *conditions understanding of development practice*. Whether this is true for the Kenyan water reform will be analyzed in this study.

2.1.4 Neoliberalism and Collier’s infrastructural reform analysis

What then is neoliberalism? Another articulation of a neoliberal reform, and indeed of neoliberalism itself, is made by Collier (2011) in his study of World Bank driven infrastructural reform in Post-Soviet Russia. His study focused on the analysis of the *styles of reasoning* of the reform, which he eventually traced back to the original thinkers and theories (and differed a bit from the analysis of Harrison (2010) and Craig & Porter (2006)). The major ideas he found in the World Bank style of reasoning about infrastructural reforms in particular, were the Chicago position on new economics of regulation, e.g. that of George Stigler, and concepts of fiscal equity based on James Buchanan’s fiscal federal theory.

The Chicago school studied regulatory regimes (in their case in the US) with a new approach, which broke down the key actors in the ‘regulatory game’ (the state, regulated firms and ‘the public’ that was both the consumer of services and the supposed beneficiary of regulatory intervention) and analyzed them as calculative agents whose incentives were structured both by market signals and regulatory institutions (Collier 2011). The effect of incentives was questioned in terms of whether behaviour was being directed to more efficient production (e.g. in firms) or economizing use (consumers) or in case of state, towards acting for public interest (ibid.). In this approach the regulatory systems were

further ‘programmed’ through establishing mechanisms of calculative choice, competition and price, based on supply and demand (i.e. establishing markets in social ‘bads’) and in terms of regulatory price setting e.g. by the introduction of metering. Indeed, these ‘microeconomic devices’ were proposed to be deployed in areas where competitive markets could not function (ibid.). Collier (2011) argues that while this neoliberal turn of the new economics of regulation did respond to a prior liberal reasoning of intervention and did conclude that the regulatory state governed too much, it did not reject arguments of market failures, but rather searched for opportunities of deregulation and regulation and programmed them in microeconomic terms.

This style of reasoning of the new economics of regulation, Collier (2011) argues, was borrowed by the World Bank report of Infrastructure and Development (World Bank 1994). The pattern this report followed first assessed the current infrastructure policies, then diagnosed the failures of infrastructure modernization through a microeconomic analysis and then programmed the infrastructure through mechanisms of calculative choice, competition, and enterprise. According to Collier (2011), the report analysed the involvement of state in infrastructure provisioning but importantly, the report stated that public sector would continue to have primary responsibility of infrastructure services due to the public good character of some infrastructure and that the non-profit objectives of governments were not possible to achieve by markets. However, the report did criticize the fact that governments and public sector agencies had dominated infrastructure provisioning in developing countries in recent decades (ibid.).

Instead, the report proposed, what Collier (2011) found to be similar to economics of regulation, a new microeconomic approach to assessing and programming infrastructure. This implied reframing intervention in terms of the different regulatory activities like production, distribution and social protection by first unbundling these bundled activities into differentiated sectors to which questions of regulation could be posed (ibid.). Unbundling thus could be seen as a critical questioning asking to what extent sectors with significant monopoly or merit good properties could be programmed through mechanisms of choice, enterprise and competition, while simultaneously recognizing the limits imposed by the material set up as well as the social welfare goals a good must fulfil (ibid.). For example, with regard to regulation of merit goods, where a minimum level of consumption

could be identified as a lifeline for some users, the report argued that society may judge that users should not be excluded if they cannot afford to pay (World Bank 1994 in Collier 2011).

This unbundling of the regulatory system opened further ways to re-engineer its specific functions through microeconomic programming like instituting ‘incentive’ pricing; commercializing maintenance, creating user choice (by technical controls like valves), or by allowing multiple providers to offer a service (Collier 2011). In Post-Soviet Russia this meant that communal service enterprises were oriented exclusively to efficient economic production by introducing incentives through competition and pricing mechanisms, and by freeing them from the “*fetters of social welfare obligations*” (*ibid.*). Moreover, the recipients of the service should be treated not as passive ‘subjects of need’ but as sovereign consumers who would be given “*control over the volume and quality of housing and communal services*” (Collier 2011 p. 233).

As an example of programming regulatory mechanisms and of a fundamental question in neoliberal style of reasoning, Collier (2011) discussed the Soviet system and the programming of social protection. In the Soviet case, the system was based on the assumption that a single public value or a normative level could be defined for all citizens and that the state should provide this value to all in abundance (*ibid.*). He argues that the reform did not criticize the basic value proposition of basic need guarantee, but at the “*veneer of equality and social protection under which it claimed to operate*” resonating with “*James Buchanan’s proposal to understand public value in terms of individual costs and benefits and with George Stigler’s insistence that the value produced by the state should be made an object of economic analysis*” (*ibid.*). The reformers examined the actual distributional implications of subsidies by breaking up the public and examining the costs and benefits of subsidies to differentially situated individuals and households. They found that blanket subsidies benefited disproportionately the better-off households receiving bigger subsidies in absolute terms due to their bigger apartments and norm-defined levels of consumption (Collier 2011).

Collier (2011) found that the reforms thus programmed social protection on two lines: 1) the subsidization of the sector was taken from communal service enterprises and given to

citizens, most interested in ‘effective expenditure’, in the form of monetary grants, and 2) reorientation of the system of subsidization from categorical to targeted subsidies. The subsidies were however, calculated as a maximum percentage of household income that could be spent on communal services and compensated households for ‘normatively justified’ expenditures on communal services in excess of that amount. Importantly, the government therefore, did not propose to consider *the actual amount* a family spends on communal services but the amount that *would* be spent on the normative level of communal services of a household of certain size. The reform style of reasoning about social protection was that the subsidies allocated initially to citizens and then by citizens given control of “the expenditure of budgetary resources”, would be allocated in a market-like way and be embedded in mechanisms of price (Collier 2011).

In this regard, and what Collier (2011) argues has been missed by critical scholars, neoliberal thought entails a critique of the orientation to public value. Indeed, “*it rejects the proposition that the core of the infrastructural ideal of low and equal prices for all is an acceptable way to think about distributional justice and replaces the idea of equal services at equal prices with a principle that mirrors Buchanan’s much more progressive (in the sense of more redistributive) and decidedly neoliberal concept of fiscal equity. The role of state is to equalize the burden that a certain socially necessary good imposes on households at different levels of income, residing in different kinds of housing and in different parts of the country*” (Collier 2011).

To sum up, Collier (2011) argues that neoliberal critique and programming developed to address some precise situations and rationalization needs of former forms *governmentality*, and that the “*accommodations and shifts we find in (heat) reforms... can be understood in terms of the form of problem making that defines the neoliberal style of reasoning about infrastructures and economic regulation.*” He further argues that while microeconomic devices depend on formal mechanisms of free choice, calculation and enterprise, in terms of their aggregate functioning they do not add up to a market (ibid.). Rather, he argues that “*we have to understand how, in neoliberal reforms, they are articulated with and accommodated to fixed material structures, existing patterns of provisioning, and crucially norms of social welfare*” (ibid. p. 243). Furthermore, the assessment of the processes of transformation associated with neoliberalism and the futures it implies have to be revised.

Based on the case of Russia, he argues that if reforms were implemented as reformers imagined them (which did not happen in Russia), the regulation would still remain a natural monopoly, profits would be determined by regulatory decision making, and users would still be governed as subjects of need, not as sovereign consumers. Moreover, pushes towards full cost recovery would be coupled with efficient subsidization, and while pressure on households might increase and direct the adjustment of populations, redistributive mechanisms would limit the impact on vulnerable households (ibid.).

In this regard, the study of reform calls for, as Collier (2011) proposes, a more nuanced articulation and analysis of reforms with a technical (following Weber) rather than imperative (judgmental) inquiry. Furthermore, he argues that often distinctions between neoliberal and other lines of thought is not a question about conflicting values: *“If both James Buchanan and the critics of neoliberalism are for equity and justice, what precisely is the problem?”* He argues that a more productive pursuit would be to ask how these values are elaborated in *“practical terms and how they are at stake in particular reforms, institutions, and forms of reasoning about the problems of distribution, substantive provisioning and calculative rationality that have persistently preoccupied governmental reflection in modern states”* (ibid.). In this way the inquiry is not motivated by a politics, but rather brings the terrain of politics itself at stake and in question. As this study is interested in water reform and the infrastructural mode of water control, this framework provides an excellent reference.

2.2 The political ecology and economy of water control – water services and improving access to water

In the literature dealing with water policy and practice there are several takes on the role of the political process in determining the distribution of water, depending on largely the underlying theoretical assumptions of the argument and the degree of commitment to them. Overlooking the literature on water service management is particularly important for the study of water sector reform, specifically its infrastructural aspects, as the ‘governance’ models are guided by theoretical orientations that in the end guide policy and practice.

However, before going to the review of the models embedded in water policies, the broader frame to study the translation of the Kenyan water policy reform and its possible

effects in a specific context should be outlined. For this, the literature on the political ecology of water provides useful concepts, which will be examined next.

2.2.1 Understanding translation – waterscape and the water justice framework

To begin with, in an overview paper of anthropological approaches to studying water sustainability Orlove and Caton (2010) call for the necessity to understand and conceptualize water as a ‘total social fact’ referring to the idea, that while (or perhaps because) water is a biological element, it is also essential to and encompasses all domains of human social institutions including economic, political and religious. In this sense, while water can be studied in different sites and aspects, its cross-cutting and connective nature should not be forgotten. However, following Latour (2000), at the same time the agency of water as an element of nature must also be considered, as in reality the water cycle itself, structures and influence these institutional processes and resource allocations.

In this same vein, (Swyngedouw 2009a) outlines a ‘*hydro-social research agenda*’ that “*envisions the circulation of water as a combined physical and social process, as a hybridized socio-natural flow that fuses together nature and society in inseparable manners*” creating various ‘*hydro-social configurations*’. He further introduces the site of study as ‘*waterscape*’, referring to analyzing the water-society interfaces in their (spatial) geographical and historical (temporal) contexts. Furthermore, he argues that ethical conflicts of distribution arising in these waterscapes can be revealed through a political-ecological examination of the hydro-social process. This approach, he argues, has vital implications for water policy as these power asymmetries determine who has access to and control over water.

In this line Mollinga (2008) argues for the need to see the management of water resources (including water services) as an inherently political process, the heart of which is the concept of ‘*water control*’ referring to “*any human intervention in the hydrological cycle that intentionally affects the time and/or spatial characteristics of water availability and/or its qualities*”. The different dimensions of water control he characterizes as: socio-economic regulatory referring to the legal and political economic institutional framework of society; organizational/managerial referring to the modes of how water control is organized and physical/technical referring to the questions of the means of water control.

This means that the control over water is also a crucial element in understanding the true access to water and meeting the essential needs (see also Swyngedouw 2009).

In this regard, and from a policy perspective, the connection between water resource management and water services becomes evidently important to consider in analytic sense. While the connection between them is obvious, they have largely been addressed by separate policy frameworks in order to gain efficiency (forthcoming). However, on the other hand Integrated Water Resource Management (IWRM) approach, promoting the coordinated development and management of water and related resources and the maximization of the resulting economic and social welfare in an equitable manner without compromising the sustainability of vital eco-systems (GWP 2000), implies integration. Still multiple criticisms have been veiled at this approach, including Seppälä and Katko (2009) expressing the worry that it does not give adequate attention to use priority conflicts (domestic use and community water supply being priority). Indeed with regard to developing countries, Barrasqué (2009) argues that as a significant amount of people is not connected to water services, the blurring of water resources and water services makes the right to resource and right to service practically the same thing. While the focus of this study is given to infrastructural form of water control and water services (and domestic uses), the water resource management structure is still important to understand as access to safe water in a particular context is shaped by the policies and practices that shape the control over water for various uses. In this regard, access to water, while looked at from an individual point of view in terms of need fulfillment, can also be looked at from a wider societal perspective, and thus from multiple levels.

Swyngedouw (2009) further calls for “*the need to address the question of who is entitled to what quality, kind and what volumes of water and who should control, manage and/or decide how the hydro-social cycle will be organized.*” These questions call for a framework of justice that considers inequality from the distributional and participatory aspects. Zwartveen & Boelens (2014) outline the social justice concepts of (re)distribution, participation and recognition in terms of water. Distribution refers to the way in which rights to water, capabilities to access (material and economic means) the benefits and the detriments are distributed and thus also affiliates with the political economic concept of redistribution. Participation refers to representational justice and deals with political

participation of control and decision making at different scales of governance. Recognition refers to acknowledging various forms of dealing with, organizing around and talking about water (ibid.). In this study the most emphasis will be given to distributional and participation aspects, while the other dimensions complement this perspective.

In addition to these basic theoretical conceptions Zwarteveen & Boelens (2014) also call for a research approach that produces ‘situated knowledge’ as *“determining what is unfair, inaccurate, or incomplete cannot be done from a transcendent outside position but always implies engagements and identifications with those whose lives and worlds are the objects of inquiry”* (Baviskar 2007 in Zwarteveen & Boelens 2014). Moreover, they call for skepticism of statements of ‘transcendent objectivity’, as injustices are often embedded in situated perspectives. Consideration should also be given to political effects of discursive representations as certain representations of reality serve certain interests and interest groups better than others. *“Facts and values to name and judge specific socio-natural orders often come together in, and are expressed through, particular discourses* (Zwarteveen & Boelens 2014).” A scalar approach is also argued to be pertinent, as often injustices of the present result from trajectories of injustice in the past. Exposing these trajectories on all levels of water control enables a deeper analysis of situated knowledge and gives space for future change (Zwarteveen & Boelens 2014).

2.2.2 Water services and policy approaches – beyond institutionalism?

Before going to the analysis of different water policy approaches in water services, the key characteristics of water services as given by Seppälä & Katko (2009) and Hukka & Katko (2009) is useful to overview. On a general note, Seppälä & Katko (2009) characterize the ontology of water, its value, and role as an economic service. Water is a basic need and an economic, social, financial and environmental resource. Furthermore, in economic terms water can be considered a merit good, and in terms of its delivery, the infrastructure as a natural monopoly. Water can also be classified by its use as single- or joint use with regard to its exclusion characteristics. As single use from on-site systems water becomes a private good, and through a water cooperative, a club good, delivered only for members. Water can also be supplied, and mostly is, through public utilities as a “common pool resource”, a public and social good that may be subsidized or even delivered free of charge in public standpoints. In this regard the authors (ibid.) also express, that often the consideration of water as an economic good is over-emphasized and that water has indeed other as

important social, public policy and environmental values and requirements. However, they note, that still, the costs of the water services have to be covered in some way but the required investments will pay back manifold in terms of health and other social and environmental benefits (ibid.).

From the operational perspective, Seppälä & Katko (2009) outline the main criteria for sustainable water services as follows: a) *social* (fair and equitable, fulfilling needs and promoting sustainable development); b) *secure and operationally reliable* (high technological reliability meeting increasingly stringent health and safety requirements, also in special circumstances); c) *environmentally sustainable* (raw water supply, water treatment according to stringent environmental requirements); d) *economically viable and efficient* (financing should be secured enabling long-term operation, management and development, with reasonable and equitable pricing); e) *flexible* (good quality water provided in changing environmental conditions). While these criteria are indeed ideal goals to aim for, in practice there are many factors that influence the fulfillment of these criteria. Thus a key question in the water service research is how this should best be done?

Seppälä & Katko (2009) further call for analyzing the different models of water services with an institutional approach, which asks whether there is an enabling institutional and organizational environment for operational and sustainable water services. The authors criticize that policy reforms adopted worldwide have relied too much on the assumptions of neoclassical economics and the centrality of rational choice in directing human behavior, which they find inadequate in explaining real life situations e.g. the operation of water services (ibid). Instead they follow North's (in Harriss *et al.* 1995) neo-institutionalism according to which institutions (rules of the game), instead of pure rational choice, guide human behavior (organizations – the players) by incentives (Seppälä & Katko 2009).

Seppälä & Katko (2009) also characterize the main different institutional and organizational structures and models of managing WSS. These models all have different roles for the state (the national or local government), and the market (the private sector) and the society (the citizens/consumers). These options can be outlined as follows: 1) purely public management (e.g. direct municipal or in some cases, management by state

organizations), 2) commercialized public management (public limited companies or municipal enterprises), 3) various forms of public-private cooperation and partnership (e.g. outsourcing of services, and mixed public-private management companies) (e.g. Finland and North Europe), 4) private management (through concessions or lease contracts) (French model) ; 5) ‘fully private options’, including both private ownership and operation (English-Welsh model) (ibid.).

Hukka & Katko (2009) further outline the current trends as well as some complementary models of water services based in the Finnish context. They note that in the past decades, more accountability has been called for in water service management, in the form of transparency of information (on e.g. water quality, changes in tariffs) and also citizen participation. The authors (ibid.) argue that as a response to this people should be regarded as customers and citizens, moving towards a responsive instead of consumer orientation often adopted by the ‘ultraliberal’ efficiency emphasizing approach. Moreover, they point out that a focus on demand-driven management instead of supply is becoming increasingly adopted.

Hukka & Katko (2009) further argue that the role of the local government has been and still is important in water service delivery in many parts of the world. However, they argue that, this has often depended on the strength of the municipalities in the society in general. For example in the Nordic countries municipalities have always had a strong role in providing services and have been mostly self-reliant in terms of funding based on the local tax revenues (ibid.). On the contrary, in England and Wales, the trust in local government has faded since 1970’s, rendering to the complete privatization of the water services (see also Bakker 2005). In the US however, local governments have played an important role in providing services and in Brazil the municipalities have been able to achieve nearly full coverage (da Costa 2006 in Hukka & Katko 2009). The authors emphasize however, that the water services can also be separated into core- and non-core functions, leaving the core functions like strategic planning to local authorities and outsourcing the services to be operated by the private sector.

However, Hukka & Katko (2009) express caution to the commercialization of local government utilities, a very common trend deploying the New Public Management (NPM)

model which they say has been problematic in the Finnish context. According to Windischhofer (2007) it has led to cuts in the municipalities' access to financial resources and encouraging them to adopt private-sector managerialism and entrepreneurialism. Moreover, Vinnari & Näsi (2008) have noted that NPM and the application of business-sector practices in public sector opens up possibilities for hidden taxation and other types of "creative accounting" by local government authorities and thus does not necessarily guarantee transparency and accountability (Hukka & Katko 2009).

Katko *et al.* (2009) further call for a historical approach in studying the evolution of these models in order to understand how they came about, and learning from the past mistakes. In similar lines, Juuti *et al.* (2007) follow North's (in Harriss *et al.* 1995) concept of institutional trajectory, and argue that the forms of water control (organization, technology) of the past cannot ever be completely annihilated and the physical and social forms of control remain, and in part determine the trajectory of future, especially if not taken into considerations by policies. Moreover, Hukka & Katko (2009) further point out that the local needs and particularities are to be considered and the diversity of approaches assessed according to them. Furthermore, the different models, and 'new' trends, should be seen as complementary (not mutually exclusive), and assessed based on their long-term experiences. For example, there were serious reasons why the local government took over water services in the 19th century from the private sector; main one being that the private sector could not meet the needs of the rapid urbanization (*ibid.*).

Despite the model taken, the importance of regulation, and the responsibility of the government to ensure commitment to universalizing the services as well as maintaining a balance in values in the decision making process, is called for by Hukka & Katko (2009). In general, however, the separation of policy making and service provisioning from each other, and the participation of public and private sector is called for (Seppälä & Katko 2009; Hukka & Katko 2009). However, as the fundamental role, and a precondition of a democratic government, is to safeguard the social and economic welfare of its citizens the main target should be fulfilling social rights to essential services implying the *not-for-profit principle*, however, coupled with the appropriate implementation of cost-recovery (*ibid.*). This means that possible revenues from the system should be used for improving the services and increasing the public benefits of the system including affordability.

2.2.3 Political economy of water services – the market approach and its critique

Perhaps the most debated paradigm of water services is the market-centred paradigm described by Rouse (2009 p. 139 – 151) which critics say is increasingly being used as the backbone of water sector designs worldwide. While often confused with solely privatization, the market-centred approach can, however, also mean the reorganization of the public sector, including public-companies, to operate on private sector principles. This is often referred to as commercialization. In fact, as we shall see later on, this model resembles the World Bank driven reforms of the Kenyan water sector (forthcoming).

The key argument which Rouse (2009) gives for the market-centred paradigm, is that, unlike the municipal paradigm, the market-centred approach is more efficient in providing water services. His main argument against the municipal paradigm is the danger of political interference in the operation of the water services, e.g. over-staffing of the operator due to employment targets, leading to inefficient services (ibid.). Moreover, he argues that there is no evidence on performance of the municipal model. As the conflicting objectives of fulfilling social and economic needs may hinder efficiency of the services, the author argues that the operator should focus solely on operating the services as commercial enterprise and remain independent from the local government (ibid.). However, importantly, the local authorities should remain with policy functions guiding the planning of water services in a given area and by using internal contracts (like in US and Australia) in monitoring the performance of providers, and if necessary initially invest in water infrastructure as well as subsidize the poorer consumers (ibid.).

Overall target in the market-approach in terms of financial sustainability is that it will be achieved with full-cost recovery of water use charges. This means that the independent commercially operating water utility would recover the costs of operation and maintenance and ultimately even future investments to the network with consumer charges. In this sense the water utility would be a fully operating business, its purpose being the provision of increasingly better services for the customers. This could be either a private company or a corporatized public-company, operating with private sector principles. Incentives for better performance would be given by adopting internal and comparative competition or benchmarking, led by an independent, transparent, regulator (Rouse 2009). Rouse (2009) further argues that because water is largely a natural monopoly due to dominant costs of

infrastructure, the prices for water cannot be determined by the market, but preferably by the independent regulator. Importantly again, the author argues that this would enable the best solution for the poorer parts of society, whose bills would be aided with targeted instead of general subsidies by the local government as before, the rich have benefited unduly from low-cost services on the expense of extending services to the poor (ibid.).

Ultimately full cost recovery of water services would enable a self-sufficient water sector eventually free from federal funding. In this regard, Rouse (2009) gives examples from England and Wales, as well as from Chile, where the author argues, privatization and the market-approach have been successful in making the water services world class. These examples have gone further in privatization in that they have floated the companies on stock market. However, in both of the cases, the regulation has been strong and targeted subsidies have been given to poorest users (ibid.).

It seems that the market-approach has been controversial mostly due to the praise of privatization. However, the ‘softer’ version, commercialization, seems to have more similarities to the arguments of other policy approaches given by Seppälä & Katko (2009) and Hukka & Katko (2009). All argue for a separation of policy from service provision, meaning that the political sphere is given the role of only guiding and regulating functions such as those of social protection. Service provisioning then, should operate based on commercial principles and recover costs by user fees. Moreover among these arguments there is general agreement that the sector should be well-regulated. However, disagreement or suspicion seems to be evoked by *how* the public companies are commercialized to operate based on private sector principles. Furthermore, Seppälä & Katko (2009) and Hukka & Katko (2009) do provide evidence that municipalism (or the local government approach) have yielded good coverage, and that local governments should remain as actors in the provisioning of water services as they enable the democratic and local control over the decisions and the participation of citizens. Also the market-approach seems to put more (though not all!) emphasis on efficient services while the others call for the public and social roles to be as important.

Another, more critical perspective to the market-based approach is given by Swyngedouw (2009b, p. 38-52). He argues that the main critical question in water services is in fact “*not*

the commodification of water (in fact, water has been sold as a commodity for very long time) or its public vs. private character, but rather the corporatization of water service delivery companies and the imposed requirement for profitability and “full cost” recovery.” He further refers to Karl Polanyi’s famous prediction of the self-destruction of society under market forces without them being embedded in a regulatory framework. Moreover, he calls for the need to redefine the concept of full-cost recovery to include systemic forms of redistribution, meaning discussion over different forms of subsidization (eg. cross-subsidization) so that the services can still benefit the poorer parts of society (ibid.). Importantly he argues that this should take place through a democratic and political discussion, as the question of who is responsible for investing or subsidizing what part of the service is inherently a political question (ibid.).

The key question in the critique of Swyngedouw (2009b) with regard to the market approach is the definition of redistribution or subsidies. Indeed, while the market-centred paradigm considers subsidies to be important for the poor, they ought to be made by the local / or national government, not the operator itself and should be embedded in their bills (Rouse 2009). While Rouse (2009) does not mention cross-subsidization, called for by Swyngedouw (2009b), meaning in practice the redistribution of wealth from rich to poor, the idea is found behind the idea of targeted subsidies. Indeed, the market-centred paradigm argues that the rich have benefited from general blanket-like subsidies, leaving the poor without proper services, implying that cross-subsidies are not shunned upon as Swyngedouw (2009b). In this regard, the local or national government remains with the overall responsibility to ensure equity in access to water. It seems that role of the state is two-fold: ensure risk-free, and regulated environment for the private (or private like) companies to act, while ensuring that this does not result in injustice. The question is then, what this appropriate regulation and subsidization should be, indeed the key questions of the neoliberal scholars. It is the different answers to these questions that this study is interested in.

3 RESEARCH QUESTIONS

The purpose of this study is to articulate the styles of reasoning of the Kenyan water policy reform and investigate its translation and emerging effects (intended and unintended from

the perspective of water justice in the context of historically unequal distribution of water in the Taita Hills. More specifically this study aims to answer the following questions:

1. *How is water justice (in terms of (re)distribution and participation) conceptualized in the policy discourses of Kenya's (neoliberal) water reforms?*
 - a. What is the style of reasoning behind them specifically in terms of regulation and the role of state, market and society?
2. *How are these conceptualizations translated into discourses and practices of water control by the actors involved in water management in the waterscape of Taita Hills?*
3. *What are the intended and unintended effects of these styles of reasoning with regard to unequal access to water in the historical context of water control in the Taita Hills?*

The analysis aims to identify and deconstruct the styles of reasoning embedded in the policy discourses and how they become articulated as they are translated into the waterscape of Taita Hills. This situated analysis will give insight about the (neoliberal) styles of reasoning in a specific historical context embedded in political economy of development. It further aims to problematize the premises on which it bases based on empirical evidence of intended and importantly the unintended effects. The study takes a critical approach which means that instead of trying to solve a problem, the aim is to understand how the problem came to be. Furthermore this is coupled with a perspective which is big instead of atomistic (Gabay & Death 2014). In this sense the study aims to contextualize and understand and by so doing provide a different, and as important contribution to studying water related problems and their prescriptive policies. Indeed, this approach enables a fruitful interaction between the natural and engineering sciences and social sciences as a problem cannot be solved by engineering without first understanding how it came to be.

4 METHODOLOGY – DATA COLLECTION AND ANALYSIS

4.1 Justifying methodology - critical realism and ethnography

Methodology of a study consists of the ontology (what exists), epistemology (what can be known), and methods (how knowledge is produced). As an interdisciplinary study, this research must be based on an ontology and epistemology that does not conflict between the natural and human sciences. A middle ground is provided by the critical realist ontology and epistemology, which concurs that there is a natural and social reality independent of the researcher and it can be studied. According to Bhaskar (1998) the (social) reality to be studied by science is a *transcendental reality*, which means that the concepts we use to express phenomena under study are a part of the reality, but nevertheless the reality transcends our concepts and exists independent of them. As Davies (2008) argues in relation to ethnography “*we can know about this reality because we are, or can become through our actions, a part of it. We gain insight of this social reality and alter it through our presence. The knowledge gained from inquiry must build on the recognition of the separate yet interdependent levels of social reality, those of structure and of the individual (p. 254).*”

However, Bhaskar (1998) also takes note of the postmodernist and poststructuralist critique of social science, in that the understanding of the reality (including nature) is socially constructed and does not exist, in this sense, in an objective vacuum. This means that the way humans (and scientists) view reality (their context), is constructed in a specific space and time of history – including the norms and ideas prevailing. Hence, a social researcher, an ethnographer, who studies people and society as objects of research must consider the “double hermeneutic”, that is the self-interpretation by the objects of research in their context (*the emic*) and the self-interpretation by the researcher in relationship to the researcher’s context (*the etic*) (Flyvbjerg 2001). This requires reflexivity on the part of the researcher. Critical realism advocates therefore for a form of analysis that is built upon the creative tension between abstract explanation and grounded description (Davies 2008). Ethnographer must make use of these tensions throughout the research process, as they are an intrinsic part of the reflexivity of ethnographic research.

4.2 Ethnography as research method

This research is a case study that, in addition to utilizing data in the form of reports, legal texts, and historical documents, draws its empirical data from real-life experiences of different organizations involved in the water policy reform process as well as from ordinary people and their daily lives in the Taita Hills. Objects of my study were the discourses and practices found in these texts, and narratives of the various actors involved directly or indirectly in the water service or resource management in the area as well as the infrastructural forms of water control.

4.2.1 Ethnography, reflexivity and ethics in the field and back home - limitations of the study

As argued before, the reliability of ethnography requires self-reflection of the researcher. This is especially the case in an interdisciplinary research, where ‘fact’ and interpretation are combined in discourses or narratives of the object of study. In terms of this study, the researcher had to distinguish fact (in this case understood as something observed and existing) from the interviewee’s own interpretations by using triangulation, that is, verifying what is true by reflecting the other sources of information, observation, other interviews, reports, previous literature on what is being said. This is essentially what an ethnographic study is about – a collection of all possible information regarding the problem or question under inquiry (Hammersley & Atkinson 2007 p. 3), and making connections between them.

I stayed in the research site for a period of six months of the year 2013, from mid-January to mid-June, and revisited the area with the rest of the research team¹ in February 2014. As the time passed in the field, more and more information was accumulated on the entire area, and on various aspects of peoples’ lives. A constant ‘zoom-in zoom-out’ mode of thinking was needed, meaning that it was necessary to focus and ‘zoom-in’ on a problem, and then see it in its context by ‘zooming-out’. It was not until after coming home from the field, that a total ‘zooming out’, was possible. This led to the reading of various theoretical approaches, thus reiterating the actual problematization of the study. In this process too, it was necessary to sometimes zoom-in again and reflect on the details of what people said, and what they meant by it.

¹ See acknowledgements for details of the project team and affiliations.

Indeed, it is easy for the researcher to understand what the interviewee means to be what he or she wants to hear. To avoid this ‘bias’, reflexivity on the researcher’s background expectations has to be articulated and reflected upon. Importantly, in the field, I had to reflect on how my position as a white-foreign-female student, would influence what was being said or not said. I also had to consider the interviewees own context, what made them say what they were saying. While this zooming-in to the exact utterances of the interviewees was important, it was also equally important to keep in mind what was being said, in the overall context of the interview, but also in the context of the discourses that were repeatedly being said or talked about in the area and among the people. Zooming mid-way into government reports about the area, but also of the policy reports of the World Bank, provided again another layer of the story, and revealed important discourses that in fact were much older than expected. This sometimes ‘chaotic’ accumulation of information, has been tried to bring under a focus, and has been used to narrate the story here.

As the research touched upon some sensitive questions of water distribution in the area, this has been also considered in the reporting of the results. The specific names of people are not given, and the link between direct quotes and the specific institutions is not made. Furthermore, consent for all the interviews was asked prior to them. Indeed, while some sensitive issues may be touched upon in the results, these issues are not in any way information that should not be public. An opportunity for the participants to comment or correct some of the findings and facts was given in the final workshop in 2014 (forthcoming).

Some limitations of this study in the field included the language barrier, which limited in the communication especially when I carried out interviews with some community groups alone (forthcoming). Although English was widely spoken in the area, sometimes the best speaking people would give the most elaborate answers, as others would express themselves only briefly. However, this was taken into note in the analysis as much as possible by triangulation.

4.2.2 Expert interviews

The study utilized primarily qualitative methods like semi-structured interviews, participant observation, and focus-group discussions. These methods were chosen because

they enable a more interactive and in-depth information sharing process, that help to understand the context and the problem from various angles.

During the course of the fieldwork 47 interviews were conducted with various organizations, groups and individuals found in Table 1. Sampling of expert interviews was done in non-random and purposive way, and by using snow ball effect, meaning that references from interviewees about other relevant informants was used to select further interviews. These included local as well as regional officers from the water sector (water supply and resource management), members of local water related community groups, local district officers of government ministries, representatives of local government, representatives of local administration, local private companies, and locally based NGOs and CBOs (Community Based Organizations). The interviews were mainly carried out in English, apart from local community groups with whom translation in either *kiswahili* or *kitaita* was sometimes needed. This was done by one of the Kenyan research team members, the other being from the Taita area. Some of the interviews, mostly with government officers but sometimes community groups, I conducted by myself, some together with the other team members (esp. Emmah Owidi). The interviews were recorded by using a voice recorder. Consent to record the interview was asked prior to the interview, and if recording was denied, notes were written down during the interview in the semi-structured forms (see Appendix 2). Prior to each interview, questions were designed based on key areas of interest, targeted but not limited to the scope of the expert, namely: background information; role of the institution in local water management; view of water situation / state of water resources in the area; view of water distribution and equity questions; view of major challenges in the work or area. During the interview questions were also asked as they came up, letting the discussion be only guided by the questions.

Table 1. Key informants interviewed in the course of the research.

Organization /Institution	Spatial scale of jurisdiction ²	Category
CWSB headquarters	Regional (Coast)	Expert – state water bureaucrats
WRMA sub-regional office (5 officers)	Regional (Coast)	
TAVEVO senior engineer	County	
CWSB Area coordinators (Wundanyi and Mwatate)	District	

² Marked according to the administrative structure prior to County Government inauguration in May 2013. See section 5.2.1. for details.

County council water engineer	District	
Public Health officer/assistant (Wundanyi and Mwatate)	Division	
Irrigation officer	District	
NDMA / Early Warning coordinator	County	
		Total: 8 institutions; 14 officers
WRUA committees (4 groups)	Sub-river catchment	Expert – community groups
Community water project committees (5 groups)	(Mwatate and Voi river) Mwatate catchment area	
Community water project committees (3 groups)	Wundanyi catchment area	
		Total: 12 groups
World Vision (INGO), WASH project coordinator (Mwatate)	District	Context – non state
Wildlife Works Ltd.	County	
Teita Sisal estate Ltd.	District	
		Total: 3 organizations
District Commissioner, Mwatate	District	Context – state
District Officer, Wundanyi	District	
County Council Clerk, Wundanyi	District (Taita)	
Area chiefs/sub-chiefs Wundanyi (3)	Location /Sub-location	
Area chiefs/sub-chiefs Mwatate (5)	Location	
Village Elders ³ , Wundanyi (from 3 sub-locations)	Village	
Village Elders, Mwatate (from 4 locations)	Village	
		Total: 6 District level bodies ; 18 groups/administrators

The interviews were then transcribed by listening carefully to the recorded files and any unusual observations were noted down (example of a part of a transcribed interview in Appendix 3.)

4.2.3 Household interviews

During a second part of fieldwork, in February 2014, 30 household interviews were conducted in the study area together with Johanna Hohenthal's study about migration. The sampling of these interviews was done with random sampling. The person or people at home was interviewed, most often the individual women (27 out of 30) or women and other family members (3 out of 30). The small sample of interviews was meant to give a glimpse of the local realities of water accessibility in the study area, especially in terms of costs, that would support the institutional focus of the study. The questionnaire with the relevant water related questions can be found in Appendix 1. The responses on water cost

³ Village elders were interviewed in groups of between 2 – 5 in both areas.

and expenditure from these interviews were combined with the data collected in the spring 2013 by other members of the research team (Kivivuori, 2013) in order to get a more comprehensive view. The interviews were carried out with the local researcher team member, who was proficient in *kitaita* as well as in English. The interview details are presented in Table 2.

Table 2. Households interviewed by area

Location / Area of households	Low-/Mid-/Highland	Number of households interviewed
Mwatate town middle	Lowland	4
Mwatate town East	Lowland	3
Mwatate town West	Lowland	1
Mwachabo	Lowland	3
Kishamba	Midland	2
Dembwa	Midland	1
Chawia	Highland	2
Wusi	Highland	3
Ngerenyi	Highland	2
Wundanyi	Highland	2
Sungululu	Highland	2
Werugha	Highland	2
Mbirwa / Talaya	Highland	2
Wesu	Highland	2
		Total: 30 households

4.2.4 Workshops

Participatory workshops were organized in February 2013 and 2014, in order to create a platform for discussion among the locals, and in 2014 also the bureaucrats, with possibly differing opinions about the water situation in the area and what should be done. These workshops were organised in Wundanyi and Mwatate catchments. In the first workshop, participants consisted of members from water and land use related community groups who were grouped in the workshop by location. The groups were asked to map out the key water issues in their areas, as well as to draw a timeline of key historical events related to water issues, drought, or other significant events. These exercises were then discussed with the whole workshop. In 2014 the aim of the workshop was to gather the participants of the research, community groups and institutional representatives, to discuss the preliminary findings of the research based on a draft report that had been circulated with the groups and institutions. The discussions and presentations of both workshops were recorded by audio and video. This study has mainly used field notes from the discussions of the February 2014 workshop in the analysis, while the data from the 2013 workshops held early February provided useful background information for the starting fieldwork.

4.3 Data analysis

The data analysis is qualitative in nature, and relies on textual analysis, or discourse analysis, with the help of the conceptual framework of the research questions. The analysis is based on ‘abductive’ reasoning, meaning that the analysis of the themes and discourses emerging from the data is guided by theory but not limited to testing a pre-conceived hypothesis (Tuomi & Sarajärvi 2009). Reflexivity of the researcher's positionality was considered while analysing the data as discussed before in section 4.2.1.

4.3.1 Discourse analysis

According to (Wodak & Weiss 2003, p. 22) discourse is a way of signifying a particular domain of social practice from a particular perspective. There is dialectical relationship between particular discursive practices and the specific fields of action in which they're embedded. *“On the one hand the situational, institutional and social settings shape and affect discourses, and on the other, discourses influence discursive as well as non-discursive social and political processes and actions. In other words, discourses as linguistic social practices can be seen both as constituting non-discursive and discursive social practices and, at the same time, as being constituted by them. (ibid.)”* Moreover, according to Weiss & Wodak (ibid. p. 23), there are several levels of context through which discourse can be examined, namely: *“1) immediate language text context; 2) intertextual and interdiscursive relationship between utterances, texts, genres and discourses; 3) extralinguistic social/sociological variables and institutional frames of a specific “context of situation” (mid-range theories); and 4) broader socio-political and historical contexts, which the discursive practices are embedded in and related to.”* In this study the analysis of the data was primarily done with regard to the 3rd and 4th level of context, as these supported the answering of the research questions the best. It could be said that the discourses of the policy reform guide social practices that are further embedded in their own social contexts and that analysing these discourses clarify the translation process of the reform.

Another strategy used to analyze the various discourses especially in the expert interviews was based on Ian Hacking's (2002) dynamic nominalism, in which he utilized Foucault's analysis of discursive production of subjects to understand the history of knowledge creation and to analyze how certain ways of being have become possible by the creation of social categories or technologies (Hacking 2002). He asserted that certain ways of being or

‘people’ (e.g. the poor, the citizen, the customer or the homo-sexual) have become into existence or as possible ways of being at the same time as social categories of the people are created. In this regard, underlying discursive ‘subjectivation’ is therefore the power to define people or objects and their ‘appropriate’ behavior. The very naming or categorizing of people often goes together with practices that define their marginality or partiality (political agency) in the society. The analysis of this study therefore paid special attention to such subject positionings and objectifications to tease out power relations.

4.3.2 Analysis process – primary and secondary

The primary analysis of the qualitative data, that is the coding and classification/categorizing of the data according to the relevant themes looked for with regard to the research question, was initially done using the Atlas.ti software. After that, the coded texts were bundled together and a thematic (or grounded) analysis was used to capture the relevant themes appearing in the coded text sections. These specific themes arising from the data were simplified with an expression and then related to the existing or new categories (see Table 3). For the purpose of the analysis the interviews were grouped according to their discursive significance into the categories (e.g. Expert – community groups) visible in Table 1. presented earlier. Then codes and new categories were grouped according to the two dimensions of water justice – distribution and political participation, for the sake of organization. In this process the focus was given on the *meaning* of the respondent, regarding the specific context and position from which he or she responded. As Dey (2003) explains meanings cannot be understood independently of the contexts.

Table 3. Example of analysis framework for initial content analysis based on grounded (emic) approach

Actor group	Distribution (Main category)	
	Technical/Financial Means / discourse (Sub-category)	
	Original expression	Simplified expression
Expert – state water bureaucrats	<i>“T: You know, they (Coast Water Service Board) are the ones that are supposed to seek for external funding, so that now they improve our infrastructure. So at their level they deal with the ministry, because the ministry is also supposed to source for funding, for development of water and sewerage facilities. So I don't know what challenge there is, but there should be challenges in terms financing because services, our services are not all that good, bearing in mind that even our infrastructure, our sources are not adequate. The demand has outswept the supply. That means we need to invest more in new water supplies, new structure...”</i>	Multiple sources of funds – donor fund reliance
		poor services
		inadequate supply vs. demand

In the proceeding, secondary analysis, the coding categories were reassessed in order to make sense of the emic concepts, i.e. the informants' concepts, and etic categories, the researcher's concepts. In this phase a more careful reading of the discourses (see discourse analysis above in section 4.3.1.) found in the texts was done and eventually the findings were contextualized into the overall historical and factual context to produce a coherent interpretation or "narrative".

5 CONTEXTUALIZING THE CASE STUDY

A historical perspective to water governance and its reforms has been argued as important (Nilsson & Nyanchaga 2008), and even inevitable in the analysis of local waterscapes. Thus in order to understand the context of the water reform in Kenya and the water realities in the study site, the Taita Hills, a recount of the historical trajectory of water control is thus useful to present.

5.1 Historical context of water policy reform in Kenya

Nilsson & Nyanchaga (2008) (see also Nyanchaga in Juuti et al 2007; Nilsson 2011), outline the policy history of Kenyan (urban) water supply, starting from the pre-colonial period up to the current reform. As the purpose of this historical account is only to frame the context, only the key points will be discussed.

5.1.1 Background of the reform - colonial heritage and the developmental state

Following Nilsson & Kaijser (2009) and Nilsson & Nyanchaga (2008) and their compilation of the historical evolution of Kenyan water services in the urban areas, a few key characteristics can be pointed out, that have importance in the analysis of the this study. During the colonial time piped water served the purpose of serving industrialization and the economic development of the British Protectorate. This was also the case for Mombasa, which became the most important port city for the colony after the construction of Uganda Railway line, where the water supply was built in order to supply water to ships and so compete with ports of Zanzibar (Willis 1995). As the dependency theorists argue, in the colonial era, the development of infrastructure was not meant to benefit Africans, who were often used as forced labor, but the colonial capital accumulation and maintaining of health of the elite (Rodney 1972).

Indeed, Nilsson & Nyanchaga (2008) found that up to independence, the urban water services were mainly targeted at the wealthy colonials with racially segregated design of water allocation. This was written in the Water Ordinance (effective since 1935) as well as in the Kenya Gazette (1953): “*gallons of water allocated per head per day*” for ‘non-natives’ was 50 gallons, whereas for Africans it was 10 gallons (grotesquely being the same as for ‘large livestock’!) (in Nilsson & Kaijser 2009). Moreover, individual connections were mainly the norm for water services, and the tariff structure was clearly suited for the needs of the colonials. As the authors point out however, this policy of targeting the rich white population on one hand, enabled the water systems to be economically stable (Nilsson & Kaijser 2009 p. 278). During this time Ministry of Agriculture and Natural Resources was the home Ministry for water policy development, and the Public Works Department as its branch was the Water Authority. In 1946 an investment programme for urban water infrastructure took place, with a cost recovery principle through rate charges (African Affairs Department 1955). In 1957, the water supply in large towns was taken over by local authorities (Nilsson & Nyanchaga 2008).

After independence, the same logic for the urban water service provision remained; piped water was a service to a small fraction of the wealthiest class of people remaining in the major urban towns – in a sense, then, a luxury good (Nilsson & Nyanchaga 2008). This was changed by the Development Plan (1970-1974) initiated by the independent government which enacted a policy of ‘water for all’ and a goal of ‘universal access’ (ibid.). During this period from the 1970’s to mid- 1980’s the government expanded its budget for urban water supplies under the Ministry of Water Development, which became responsible for development, management and direct provisioning of water services (ibid.). Then the principle legal framework governing water provision was the Water Act (Cap 372) adopted in 1972.

After the Local Government Act (LGA) was enacted in 1980’s, it was possible for local governments to undertake water services. This time was also the start of the macroeconomic crisis of the early 1980’s and the start of Structural Adjustment Programmes (SAP), the development loan conditionalities set by the World Bank and IMF, aimed to reduce public spending and restructure the economy in order to ensure private sector growth and adjust to the decreasing resources. Eventually the policies of cost-

sharing and cost-recovery entered the public sector. While water's role as a public, social and purely economic good has changed over the period, according to Nilsson & Nyanchaga (2008) the shift in the period of SAP was towards the economic and public. This meant that the public was expected to 'participate' in the provision of services by cost recovery. In 1988 commercialization was tried by establishing a parastatal called the National Water Service and Pipeline Corporation (NWSPC) which took over commercially viable water services (World Bank 2002) and was responsible for both the planning and provision of water services. However, at this stage the water services remained still centrally controlled.

In the district level in rural areas however, the decentralization that had taken place after 1983 had created the district level development committees (DDCs) that were now parallel to the local government service delivery system as well as the district sector system (referring to ministry representation at the local level). Until multi-partyism revived, the DDCs were the main body to accept the developments (including water projects) in the district level. The local government chairmen and clerks were members in the DDC. However, after multi-partyism revived, the local governments began to revive too. In the water sector this meant that some were admitted to be water undertakers by the Ministry. The water service delivery structure in the district level that was prior to the second wave of reforms set out by the Water Act 2002, is presented in Figure 1.

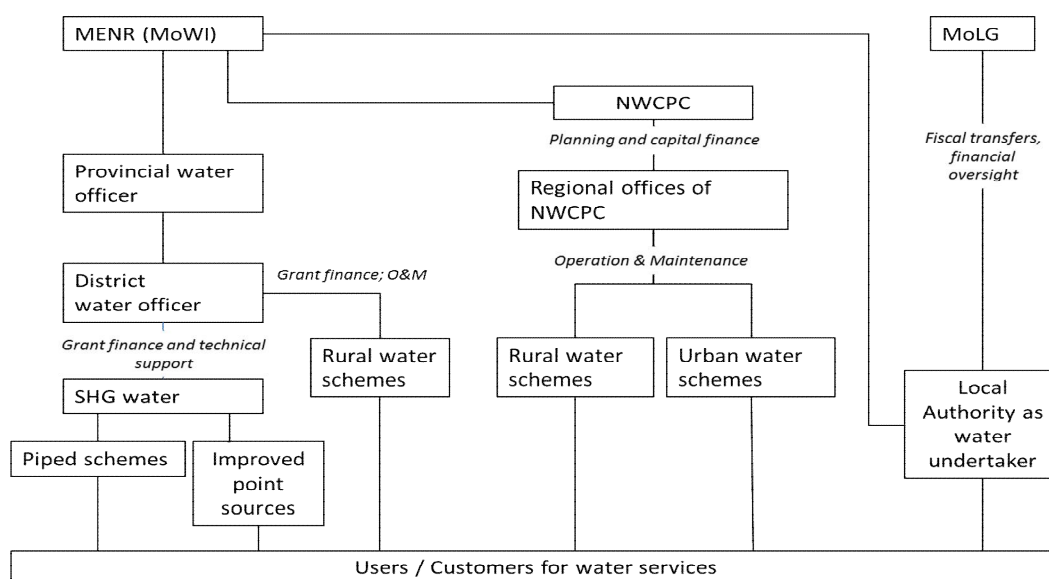


Figure 1. Water service structure in district level prior to reforms (World Bank 2002)

5.1.2 Negotiating reform as part of new development policy

However, according to Nilsson & Nyanchaga (2008) by 2000, less than half of the rural population and only 2/3 of the population in urban areas had access to potable and reliable water supplies. Consequently, in efforts to enhance the efficiency, accessibility and sustainability of water services, the Moi Government started formulating new policy. However, this process that led to the water reform of 2002 was also a result of a long negotiation between the Moi government and the donors (personal communication with a former reform negotiator, Prof of UoN 2013). The water reform was also embedded in the overall public sector reform in Kenya led by the loan conditionality of the World Bank in the form of Poverty Reduction Strategy (PRS), the process that requires the low-income borrower countries to complete a PRS paper (PRSP) to access International Monetary Fund (IMF) and World Bank concessional lending and Highly Indebted Poor Countries (HIPC) debt relief (Harvey 2008). The public sector reform aimed to improve ‘governance’ by redefining the role of state e.g. by reducing the amount of public sector civil servants (World Bank 2004) in order to “*provide fiscal space for pro-poor expenditure programs* (ibid.).” Moreover, the privatization of the major public infrastructure (including water utilities) was initially demanded (ibid.). However, during the water reform negotiations, as was shared by the Prof. of UoN, who had been initially on the donor’s side (later went to work for the Ministry), the Kenya government was able to replace privatization by private-sector participation in the form of commercialization, as the poor experiences from Tanzania with full privatization had already been visible. In 2002, the National Rainbow Coalition (NARC) government came to power finally launching the Water Act 2002. In the end, the World Bank’s monitoring report (World Bank 2004) concluded, that the lessons learnt from the policy push of privatization were that instead of privatization, public-private partnerships seemed to better received by the recipient countries. These roots will also be significant in the analysis of the reform.

5.2 Waterscape of Taita Hills

In order to contextualize the reform translation, however, it is also important to present the general and more specific features of the Taita Hills waterscape.

5.2.1 General geographical and political characteristics of the case study area

In geographic terms, the research site is located in the Taita Hills of southeastern Kenya (38250S, 388200E) (Figure 2.) adjacent to the dry Serengeti plains (Pellicka *et al.* 2009).

Administratively the Taita Hills are located in Taita-Taveta county part of the former Coastal Province.⁴ The county is divided into 4 districts (now called sub-counties) namely Voi, Mwatate, Taita (Wundanyi), and Taveta districts. Before the county governments, Taita and Taveta Districts had been separated in their own units in the Coast Province from 2007 onwards (Mghanga 2010). Before that the two districts were merged as Taita-Taveta District. Nevertheless, the administration was inherited from the colonial period and the central government was the main unit of decision making. During this time, the local governments were mainly municipal councils based on the three largest towns in the area, Voi, Wundanyi and Taveta. The research concentrates mainly on the Taita District, and more specifically in two divisions Wundanyi and Mwatate (out of the six).

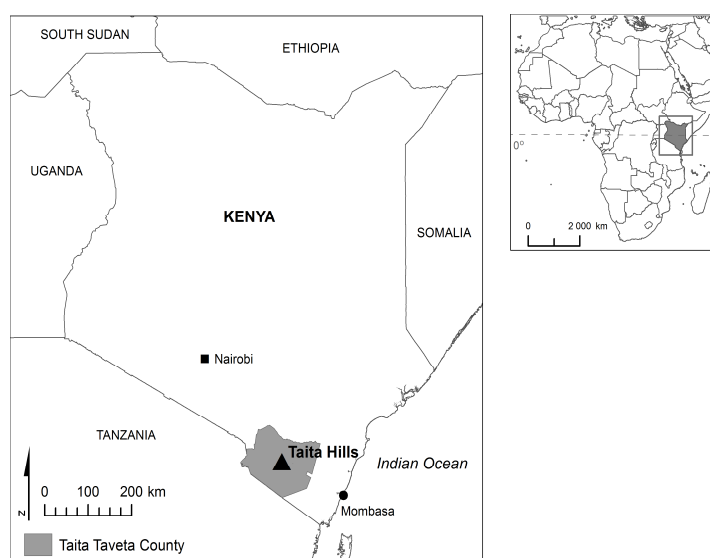


Figure 2. Study area (Hohenthal *et al.* 2015)

The political constituencies are three, and follow more or less the administrative boundaries, namely Wundanyi, Mwatate (covering Mwatate and Mwambirwa divisions) and Voi (TDDP 2008).

The population of the entire county was 284 657 in 2009 (KNBS 2009 in TTCG 2013). The inter census growth rate is estimated to be 1,6 % (below national average of 3%) and the expected population in 2017 to be 346 000. The population division in the study area based on 2009 census, is presented in Table 3. In the county an estimated 57,3 % (national

⁴ Because of the changes in the Kenyan governance structures, the administrative units have been under different names and borders during the past decade. The formulation of the new constitution 2010 resulted in new administrative and governance structures all over the country. The formation of independent county governments was on going in the area as the research was commencing and after the elections held in March 2013, the county government was formed in May 2013.

average is 46%) of the population is absolute poor, living on less than KES 1 562/month (~\$17 / month; \$0,60 / day)⁵ (TTCG 2013).

Table 4. Population distribution in the study area (TTCG 2013)

Area (division)	Wundanyi	Mwatate
Population total (area)	56 020 (701,3 km ²)	71510 (1837,6 km ²)
Density general	80 / km ²	39 / km ²
Population town	4117	5573

Currently, according to Mghanga (2010) inhabitants of the Taita and Taveta district are crowded in 11 % (1,930 km²) of the area, while 62 % (10,539 km²) of the Districts are under Tsavo East and Tsavo West National Parks, 26 % is state land, 1 % is under Trust Land (Mwachofi 1977 in Mghanga 2010). Of this 1930 km² over 735.6 km² is taken up by five sisal estates (Mghanga 2010), of which the largest, the Teita Sisal Estate located in Mwatate, covers 300 km² (interview with Sisal manager 2013). Moreover, the Taita Hills Hotel, Salt Lick Lodge, Lumo Animal Sanctuary, the land taken by the Kenyatta family and other large commercial ranches cover a large fraction of the 11 % of the said land.

The specific study area was further narrowed down to focus on the two river basins or catchments as shown by the map (Fig. 3). Wundanyi catchment (14.6 km²) is located in the moister climatic zone in the upper part of the Taita Hills, its altitude varying between 1258 and 2104 meters above sea level. Mwatate catchment (79.1 km²) borders Wundanyi catchment in the North and North-East and its downstream limit is in Teita Sisal Estate dam (831m a.s.l.). The study area is characterized by important differences in terms of the agro-ecological conditions especially in terms of water availability. The mountainous zone serves as water catchment area with average annual rainfall approximately 1132 mm (measured between 1986 – 2003 at Mgange at 1768m) (Jaetzold & Schimdt 1983 in Pellikka *et al.* 2009). The area is affected by South-Easterly winds coming from the Indian Ocean. There are two rain seasons in the area: long rains fall between the months of March and May (approximately) and the short rains between November and December. However, the conditions of the highlands, the cooler temperatures and higher altitude, are ideal for condensation of moisture and orographic rains resulting in relief rainfall during dry seasons. The tropical highland forests in the hills, thought to be part of Eastern Arc

⁵ Calculated based on exchange rate of 1USD = 91,583 KES (on 21.1.2015).

Mountain chain, (Pellikka *et al.* 2009) also known world-wide for being a biodiversity hotspot of various endemic species of flora and fauna (see e.g. Brooks *et al.* 1998), are an important part of the water cycle. Moreover, in agricultural terms the highlands have high potential for production of horticultural crops like tomatoes, french beans, peas, cauliflower, cabbage, kales, as well as maize, beans, cassava, potatoes, mango, bananas, passion fruits, papayas, guavas, avocados, macadamia nuts and arrow root, and even coffee (among others) are grown (Soini 2006).

Towards the lower zones, rainfall becomes less. The zone on the slopes of the hills (between 910-1220m) receive average annual rainfall ranging 600 - 800 mm (Soini 2006), Here the ecosystem changes to dry woodland (Pellikka *et al.* 2009). In agricultural terms this are considered mid-zones, and the most typical crops grown in these areas are maize, beans, sorghum, cowpeas, pigeon peas and green grams (Soini 2006). However, the along the Mwatate river, especially in Kipusi valley, coconut trees, sugarcane and arrow roots are also grown. The plains few kilometers away from the hills (*nyika*) are characterized by dry savannah and grasslands and the lower lands are mainly categorized as semi-arid region (ASAL). In Voi, at 560 m altitude, the average annual rainfall is around 587 mm (Pellikka *et al.* 2009). This zone is categorized as low-productive area, although millet is grown, and consequently the area is occupied by large scale ranches for livestock (Soini 2006).

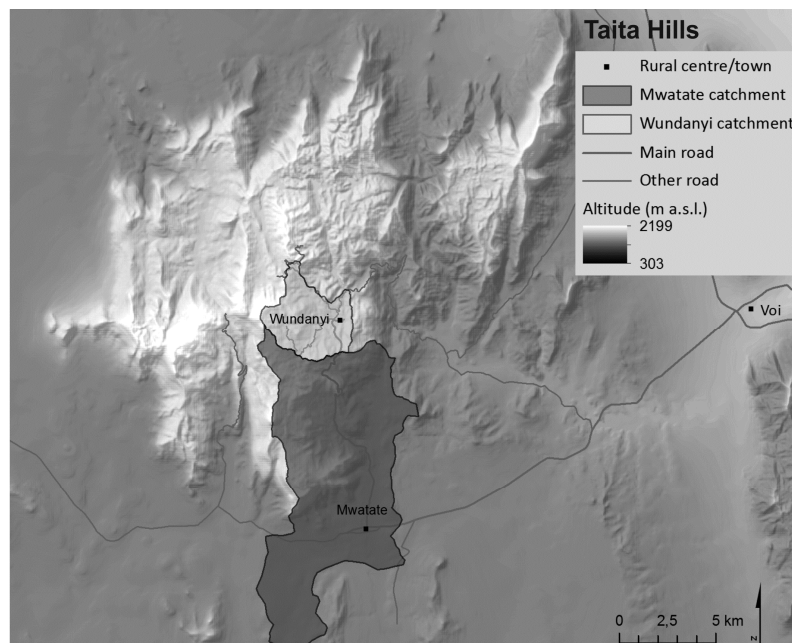


Figure 3. Specific study area, the Taita Hills (Hohenthal *et al.* 2015)

In the Taita-Taveta county the largest water sources are the Mzima Springs located in the Tsavo West National Park formed by the waters draining from the Chyulu Hills, which supplies Voi town and some surrounding areas with water, as well as the city of Mombasa. Other large sources include the trans-boundary (with Tanzania) lakes of Lake Jipe and Challa, which are located in Taveta area. The water to these lakes originates from the underground aquifer formed by Mt. Kilimanjaro melt waters. The two rivers in the specific study area are the Voi and Mwatate Rivers, have their origins from the Taita Hill masses. The Voi River originates from various streams originating from the hilltops of Iyale (altitude ranging from 2104 m to 1750 m) and Ngangao (1952 m to 1700 m) and flows down crossing Mwatate and Mwambirwa division into Voi town and Tsavo East National Park. In addition to these main rivers, there are also many springs and streams, mostly located in or close to the remaining tropical cloud forests (Himberg 2011) in the highland areas. There are also some manmade dams, and natural wetlands, but most of them have been turned into farmland.

The highland areas part of the Mwatate River catchment (Upper Mwatate from now on) also have many springs scattered around the hills flowing down in streams forming the Mwatate River. The Mwatate River drains down into a valley, where the Ngulu wetland has been formed. During rains the area floods. The river flows to the Sisal Estate Dam, from which the water overflows to continue its way towards Kwale District. However, the river nearly dries completely during the dry season, and the overflow from the dam is non-existent. In the lower lands of the study area, there are a few springs on the slopes of the hill masses, but mostly groundwater is available. There are several boreholes and few wells that have been dug on the wetland area of Mwatate.

Throughout the course of the research, the diminishing water resources were a constant worry among both, the local citizens as well as the government officers. However, there was no clear consensus on the estimation (which indeed is impossible) of when the water resources started diminishing. In the timelines produced at workshops, indications of reducing water resources were placed earliest at 1960's, but decrease in water levels was mentioned mostly later in 1980's (Hohenthal *et al.* 2015; Kivivuori 2013). Also other more short-lined studies, like Lekasi *et al* (2005) (cited in Himberg 2008; Himberg *et al.* 2009) have received similar feedback from the community. In the Rapid Appraisal, the

community in Wusi sub-location (also in the area of our research) told that the water resources had started diminishing from around 1960-1970's, compared to 1920's when water was plenty (ibid.). During the expert interviews those that had stayed in the area for more than 20 years said that some of the then permanent rivers had become seasonal. While, it is clear that people's memory is not as such a reliable source of information, it cannot be undermined either, especially if it is the only source of information and is confirmed by a large number of people. However, whatever the case, what can be deduced based on these testimonies is that while drought has been a distinct and repetitive feature of the area, the water resources seem to have diminished over the past 50-60 years. Hence the increased seasonal scarcity experienced by people in the area seems to be real.

In terms of water quality, the major sources of pollution to the surface waters especially the streams and rivers are chemical pollution from farmlands, siltation (though this can also be beneficial to farming) and pollution from wastewater discharge from urban centers and at times overflowing septic tanks or pit latrines especially during rainy seasons. In general the water in the springs is of good quality at least in terms of microbial quality (Interview with Divisional Public Health officer Wundanyi 15.03.2013.). However, in the lower lands people rely mostly on surface water, and the mineral content of the groundwater is high in some areas according to monitoring report in Mwatate area by CWSB: salinity 1254 - 2335 mg/L (n=2); alkalinity 754 - 792 mg/L (n=2)⁶, and indeed nearly non potable. (unpublished report 2013). However, as the Public Health officer said, the questions of water quantity clearly start to overshadow questions of quality the further from the hills to the plains one goes. Still, in Mwatate area the incidence of waterborne disease is higher, e.g. during rainy season in April 2013, 140 cases of diarrhea and 8 cases of dysentery were reported at the Mwatate District Hospital, while in Wundanyi there were 113 diarrhea cases and no dysentery (Wundanyi Public Health Office, unpublished data).

5.2.2 Historical land control as cause of structural inequality in Taita Hills

The context of the Taita Hills would be inadequately described without the land question, as according to (Njogu & Dietz 2006) "*land is ... the basic resource through which other biological resources - in this case, wildlife and forests (my case water) - are owned, used managed and contested.*", at least in the capitalist sense. The land issue in Taita-Taveta has

⁶ WHO guidelines for potable water in terms of salinity and alkalinity are 1400 - 2450 (mg/L) and 500 (mg/L), respectively (Farquharson and Wright 1990).

been widely researched already (see Fleuret 1988; Hermunen 2004; Mghanga 2010; Mkangi 1978; Njogu & Dietz 2006). Therefore the purpose here is only to highlight the context and the most relevant aspects of land control as it inherently relates to the control of water, and importantly questions of water justice.

The first largest land grabs from the community took place during the early 1900 when the area was colonized, and land was taken for industrial purposes of the British Protectorate, but also for white settlers (Nazzaro 1974). This was a start of reorganization of land use in capitalist terms with multiple implications. Studies by Nazzaro (1974) and Fleuret (1988; 1989) show that the land reform brought by the Swynnerton Plan in the 1950's aiming for increasing productivity by introducing private property, modified the former Taita system of adapting to drought. The Taita had land in different agro-ecological zones and shifted their agricultural and grazing practices depending on water availability in each zone. The lowlands (*nyika*) adjacent to Taita Hills, including areas around Mwatate town were used, and are still in areas where land consolidation is not completed, for grazing larger herds of animals which was often done communally (Mkangi 1978; Were 1986 in Kivikkokangas-Sandgren *et al.* 1991). As a result of land consolidation, perhaps the most significant aspect of the land reform, the various plots were grouped together into one large plot, its size equivalent to the total size of the different plots put together. However this land was given in one, sometimes random location. This process was full of corruption (Smith 2008) as also came up in our interviews, and hence local elite as well as government grabbed former community land. Moreover, according to (Fleuret 1988) the land consolidation also seriously disrupted the landownership pattern on which the traditional water management rested. Now kin-based relations of water management of furrows, that diverted water from streams and rivers to residential areas for both agricultural and domestic needs (see Fleuret 1985) were changed into business relations. Fleuret (1988) found that some people had even privatized springs by taking water into concrete tanks and further sold this water to the neighbours resulting in a lawsuit on the grounds of individual ownership of water (*ibid.*). This land reform, has therefore had large impacts on the socio-economic differentiation of the area. This, coupled with population increase, has created pressure on the environment, including water resources.

The attempt of the Colonial rule to establish private tenure (and increasing production by intensive farming) through land consolidation was justified also on environmental grounds of settling people down from the highlands. Indeed, a resettlement scheme to Shimba Hills attempted already during the Swynnerton plan in the 1950's, was suggested on environmental (like preservation of water catchments) grounds, which the locals refused (interview Toro Water Project 17.6.2013) as the people's link to land was more than economic, indeed part of their identity serving as link between the present people and their ancestors (Harris 1978). By consolidating the different parcels of land into one fixed larger parcel, however, not only delinked the connections of kin, but also contributed to an increasing scarcity of land in the highlands (coupled with the subdivision of land for descendants), continuing the efforts to move people to the lower lands (TTDDP 1976). According to the Taita-Taveta District Development Plan of 1974 – 1978: *“After land consolidation around 30 % of people are legally landless or on sub-economic units and average farm size is extremely small. Efforts to encourage people to move into lowlands have been unsuccessful (TTDDP 1976).”*

As was discussed before, the settlements in the Mwatate area had been temporary (apart from the enclave of the Sisal estate) before, as cultivation near the streams and rivers was done only in certain times of the year (Fleuret 1989). Indeed only after 1950's the area started to grow and the market center of Mwatate (though already a trading cite before colonial rule) grew in size. According to the study of Fleuret (1989), accompanied with the findings of Harris (1978) and Smith (2008), a majority of the people in the lowlands, especially in the surroundings of Mwatate, were until a long time non-Taita; or those retired or unable to work for the Sisal estate; or those abandoned by families due to accusations of witchcraft or the like; thus as Fleuret (ibid.) defines them, somewhat “socially marginalized”. The drylands had been considered as reflecting social calamity, and anger as opposed to peace of the wet hilly areas (Harris 1978). However, after land consolidation, and the allocation of land in the lower zones the population has become permanent, thus importantly, increasing the demand for water.

5.2.3 Brief history of water control in the Taita Hills –pipelines and modernity

The colonial rule also introduced a new mode of water control, infrastructure. The introduction of infrastructure to distribute water to different parts of an area and for different purposes was a part of the colonial project of economic productivity and

expansion. The water infrastructure was first serving the purpose of railways. In urban areas, piped water schemes were laid for the white Europeans in order to “protect them from public health hazards”. Eventually the British expanded the water schemes to the growing rural centers and market places.

This was the case also in Taita Hills. The first water infrastructure was laid from Mzima Springs to Voi and further to Mombasa already during the construction of the Uganda railway already early 1900s. Then during the time of First World War (1914 – 1918), when the British soldiers were occupying the areas of Maktau, the soldiers were supplied with water by a pipe laid from Vuria hill down to the plains of Maktau (Mjomba 2014, personal communication). Later on in 1920, when the British Government was finishing the construction of the railway line, they took over the management of the water pipeline as well. The pipeline was planned then to supply water to the construction workers and to the trains. Later, in 1949 – 1951, the pipelines were complemented with two water tanks that served the trading center of Maktau. The system remained under the British Government until independence after which the Kenya Railways took over the maintenance of the water system (ibid.). The British Army also constructed so called ‘water pans’ which collected rainwater in earth structures. One of them, the Manoa dam, is also near our study area. Later a dam and several boreholes were made for the establishment of the sisal estate in the 1930’s by the colonial rule, however these were meant solely for the purposes of the industry (interview with sisal estate 5.2.2013). Later, as Wundanyi became the headquarters of the district after Voi, the colonial government introduced water supplies there in 1953.

After independence the state’s aspirations for modernity and development increased. The developmentalist state (or as some have said the “African socialist state”) increased the expenditure in water infrastructure in all parts of the country as discussed before (Nilsson & Nyanchaga 2008). While the trend of establishing water systems for economically important areas in Taita area like Voi town and inside the National Parks (for staff of hotels continued) (ARTTD 1975), increasingly the community members with the aid of local politicians used the *harambee* systems enabled by Kenyatta government to establish water projects. However, the aspirations for a political control of the former colonial water infrastructure also raised its head. After Kenya got independence, the MPs of Taita and

Taveta constituencies started calling for the Africanization of the Mzima pipeline board as after independence ex-colonial officers continued to chair it until the 1970's (Hansard 1970). They argued that the colonial officers did not look at the water needs of *wananchi* (swahili for 'common person') of the area and continued to serve the interests of the tourist city of Mombasa. Even a motion in parliament to appeal for funds from the then Ministry of Water Development was run by Voi MP in the 1970's to take water from the pipeline to smaller communities and tap water from the rivers for irrigation purposes (ibid.). Indeed the control of water became a central political question.

Several water projects were also funded already then by international donors like UNICEF, which were transferred through district development committees and forwarded in the form of grants (Hansard 1962). There is no record of how these projects were managed, but there is mention that some of them were transferred under the management of the local government, or county council already early on (ibid.). However, there were some contestations regarding the disconnection of water to a school of the newly built Mwatate water supply by the county council, due to non-payment, as argued by a local MP (Hansard 1971). Already then people did pay for the water being directed to the lowlands.

In the start of the Ministry of Water Development in 1974-1978, the proposed budget by the ministry in the district for development of water supplies increased dramatically from 1974-1975 year's budget of 27 400 KES to 1977-1978 of 832 000 KES (TTDDP 1976). During this time, the Mwatate Water supply, established already in 1960's, was enlarged by the county council to meet the growing demand of water for the market center (TTDDP 1976). Also the Dembwa-Wusi water scheme was established by the funds from the Ministry of Water Development in 1975, serving then already 6000 people (ibid.).

However, as the economic crisis hit in the early 1980's, already in the next development plan the first ambitious spending targets were lowered on national and district level (TTDDP 1981). This was also the onset of structural adjustment in Kenya, and "decentralization" of government expenditure in rural development came to dominate the distribution of development funds including for water infrastructure as opposed to the former more direct path from the Ministry of Water Development. The District Focus for Rural Development (DFRD) was inaugurated in 1983 (Gibbon 1995; World Bank 2002).

The ostensible intent of the DFRD was to enhance equitable distribution of national resources to regions which had not been favored by Kenyatta. However, these also proved to be to regions with which Moi's personal political links were strongest, including Taita-Taveta (Barkan & Chege 1989 in Gibbon 1995). Through DFRD based manipulation of development management, Moi maintained support in districts of political interest to him and moulded support in other areas by promoting local brokers and assembling clientels around them (*ibid.*) (see also Crook 2003).

In Taita Hills, under the DFRD approach the process of decision making on planning of intermediate-sized projects eg. water projects, went entirely in the hands of the chiefs and councilors as consultation meetings were rarely held (Gibbon 1995). It was further observed that in these districts the development projects usually come from above (the senior politicians) and people could not recall ever attending a meeting to discuss the planning of such projects. Indeed, according to Gibbon (1995) DDCs caused considerable popular "de-participation" since senior politicians and admin officials overshadowed ordinary people in decision making, and had tax and other charges exempted (Crook 2003).

In this period the nature of *harambee* movements, which used to be local labor based donations to smaller projects (incl. water) and thus based on more traditional communalism (albeit also encouraged by Kenyatta), changed to larger scale projects and cooperative and economic activities as locally based politicians and MPs of the ruling party KANU sought to establish them to grow their clientels. The water groups were especially politically infused as they were involved in provision of basic services, which made them central to development politics and socio-political relations at the local level. The more centrally directed projects of DFRD enabled better patronage. Indeed self-help groups turned first to brokers and lesser patrons drawn from local business elites to organize minor *harambees* on their behalf. These elites formed the link between the groups and senior members of the community such as MPs, party officials and senior "home area" civil servants, and used such approaches to exert influence on their own behalf or on behalf of their senior patrons (Gibbon 1995). The problem with these projects was that politicians often turned off funds when political competition was low, in order to make sure that there was still a project to mobilize support around later.

It was during this time also that the structural adjustment and freezing of government aid by donors in 1990 due to the inadherence by Kenya government to the conditionalities, led the funds for projects to be channeled directly from NGOs to community projects (ibid.). In Taita the number of NGOs increased from 8, 1988, to 14 in 1993, with 2 foreign NGOs, of which one DANIDA was largely involved in establishing water schemes. As Kanyinga (in Gibbon 1995) shows, the political patronage that had increased during the Moi era infusing the water projects, was not changed by the entry of NGOs. While the NGOs tried to avoid this, they were often blind to the later guidance of some community elite groups to take their projects to their own areas. Some observers pointed out that politicians and senior civil servants from Taita Taveta had influenced foreign NGOs with field officers in the district to concentrate on specific divisions within them. Moreover, struggles on the content of or the micro-level location of the NGO activities took place once they had decided to locate in a particular constituency (ibid.). Smith (2008) also describes that some politicians claimed they had started projects, which had in reality been started by the larger donors in the area.

While the role of patronage politics in the earlier times of water control of Taita has not been possible to analyze due to lack of data, what can be said is that its importance did not decrease with the interventions of SAP. Importantly, according to Smith (2008) the legitimacy of state in terms of bringing development began to crumble, as the public offices no longer had funds to support the start of water projects, and importantly, because this gap was filled by the surge of donors as well as the patronage politics. It was on this ground that the institutional framework of the water reform of 2002 was going to be translated and which it sought to change.

Figure 4. summarizes the historical context of the water sector and the key events of water control in the Taita Hills. Indeed, as just discussed, these were embedded in the local, national and international political economy.

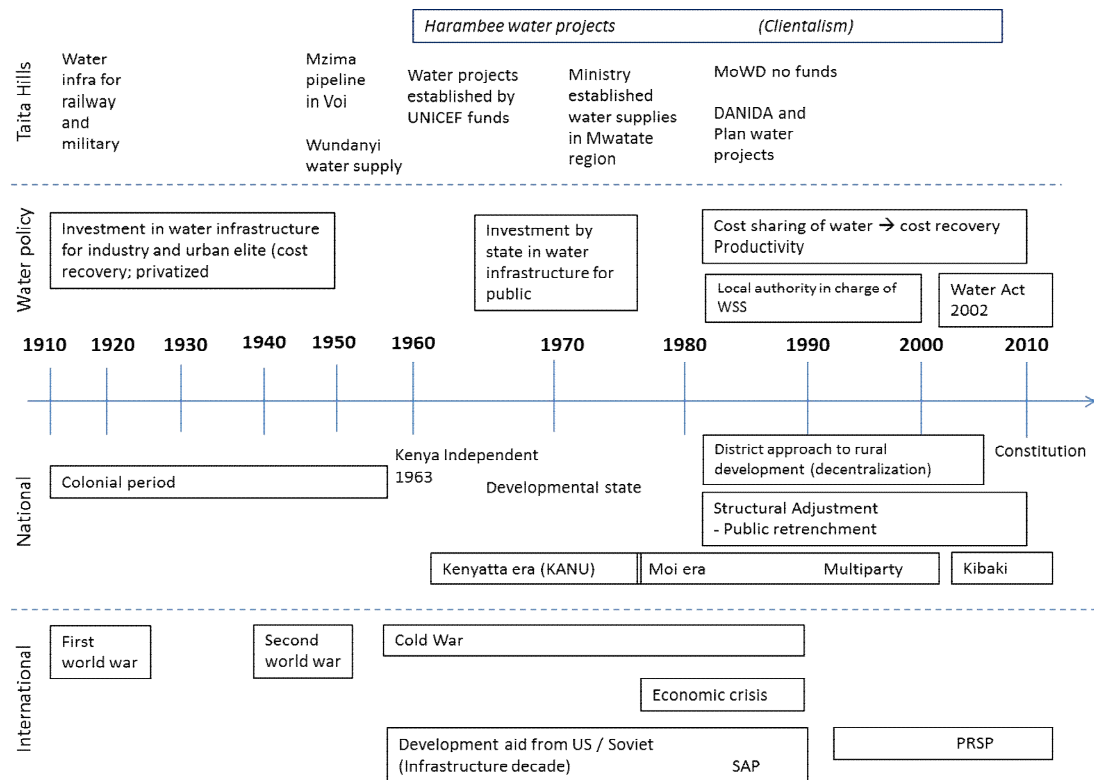


Figure 4. Summary of historical context of water sector in Taita Hills and Kenya

5.3 Current organizational structure of water actors in Kenya and Taita Hills

Before going to analysis of the reform translation, the institutional framework established by the reform and the details of the principle water providers in the Taita Hills is useful to present.

5.3.1 The institutional framework of the Kenyan water sector after reform 2002

A temporary, independent committee, the Water Sector Reform Steering Committee (WSRSC), had been established for preparing the framework for implementation of the water sector reforms (Krhoda in Odugbemi and Jacobson 2008) and for creating the new institutional structure for the sector. The water sector was split in terms of water resource management and water and sanitation services (see Figure 5). While the focus of this study is in water supply sector and the domestic use of water, for the purpose of understanding the translation of the reform in terms of just access to water, the water resource management structure will also be briefly outlined.

Indeed, as shown in the historical timeline, before the reforms started, the state and the local ministerial level had the key principle role in developing and maintaining water supplies in Kenya. One of the major changes that started after structural adjustment and

which became later articulated in the new reform, lead to unbundling the water sector into various organizations with separate responsibilities.

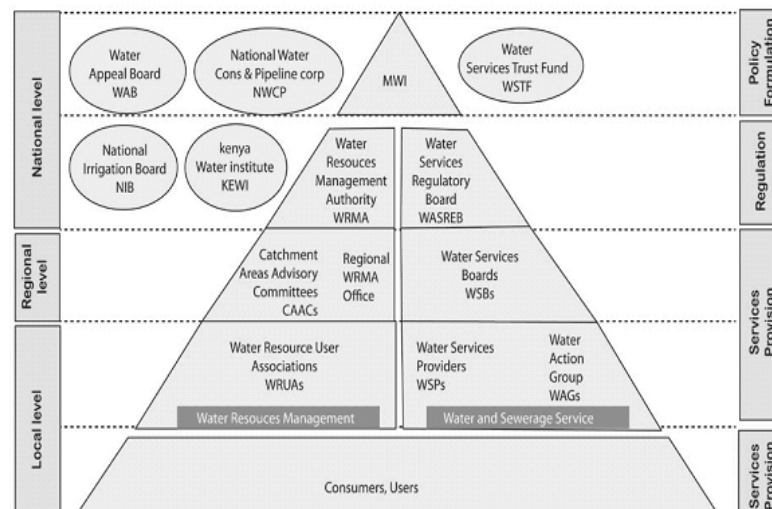


Figure 5. Water governance structure in Kenya after reform 2002. The institutions were established in 2005. (MoWI 2013)

This meant that the Ministry of Water Development was broken down to different entities; first, separating the water resource management from water and sanitation services and then breaking down the sector institutions into independent public corporations. While the state remained with the ultimate responsibility over the entire sector, albeit focusing now only on policy making, coordination, supervision and guidance, perhaps a key feature of the reform was that the regulatory functions were moved under two independent authorities, namely the Water Resources Management Authority (WRMA) and the Water Resources Regulatory Authority (WASREB), which were legally public corporations with board members nominated by the Ministry (K' Akumu 2006).

In terms of water resource management, the WRMA has regional as well as sub-regional offices in each 'river catchment' area. These areas are large river-basin areas that have been further divided into sub-catchment areas. Each catchment area has a Catchment Area Advisory Committee (CAAC) consisting of various stakeholders in the area. The head offices of these are in regional headquarters of the WRMA, resulting in large jurisdiction areas. The water permits, the principle instrument for water rights allocation (further discussed in the document analysis) were to be handled by the sub-regional offices and approved by the regional offices with the advice of these committees. In the local context these permits were also supposed to be regarded by the Water Resources Users

Associations (forthcoming). In this regard, the planning of water uses and infrastructure was transferred away from the local governments.

This is also the case with the water supply sector where the Local Government has been removed at least in principle from the operational duties of water supply. The tasks of developing services and investing in assets have been given to the regional water services boards (WSB), public corporations, licensed by the WASREB (Water Act 2002 section 57.). Anyone providing water services to more than 20 households is to be authorized by the WSB, including individual and community water projects (Water Act 2002 section 56.). According to a World Bank Water and Sanitation Program (WSP) report (Mehta *et al.* 2007), the local District level Ministry staff were meant to be managed by WSBs, with salaries paid by the Ministry. However, this was to take place only in the short run as only a few of these staff was to be selected to join the water board permanent staff. This, the report says, is being done to ease the transition of the approximately 6,000 current water department staff into employment within public or private institutions. The WSB's sign contracts or Service Provision Agreements (SPAs) with locally based water service providers (WSPs) that carry out the actual operation of the services. These were meant to be the largest urban water service providers, which in Kenya have been mostly formed from former municipal water undertakers, the local government supplies. Once the reforms would be advanced the providers owned by the Local Authorities would have to compete with other potential service providers (GoK 2007). In this regard, and in practice, as we shall see, the local government was not entirely removed from the sector, although importantly, its function as a decision making body was retrieved.

Indeed the only forum for participation remained with the community based groups the Water Resources Users Associations (WRUAs), who have been mandated by the Act to be the stewards of the government resources. Indeed, the WRUAs have been meant to not only carry out water resource and catchment rehabilitation measures, but also ensure "equity in allocations", that is in practice, ensure that water is being allocated justly between different uses, and that there is adequate water for domestic use and water supplies (discussed further in section 6.1). The Water Act has also established a separate water court, the Water Appeal Board, which deals with cases of complaints, objections and

conflicts of decision making about water rights allocations as well as about larger water services.

5.3.2 Water service providers in the Taita Hills area

To give some background context to the reform translation, the key water providers in the area are presented briefly. The principle water supplier in the area is TAVEVO, which is responsible for running the water schemes in the major urban centers in Taita Hills. In addition to this, there are several community based water projects, and private vendors who sell water in the study area. The providers considered in this study are the ones that fall within the range of the major two river catchment areas presented in Figures 6. and 7.

TAVEVO is responsible for operating the two major urban schemes, namely Wundanyi water scheme and Mwatate water scheme (although the transition of the latter scheme from the country council to TAVEVO was on-going as will be discussed later). The operational details of the two schemes in the research area are presented in Table 5.

Table 5. The operational details of the two major urban water supplies (TAVEVO 2013)

Water schemes (TAVEVO)	Wundanyi (est. 1950's)	Mwatate (est. 1960's)
Area of coverage	i) Wesu ii) Township, iii) Mteni-Kitukunyi/Sungululu and iv) Mlaw/Bengonyi/Wasinyi/Mbauro and Ruma); Wesu District Hospital, the district headquarters, Wundanyi Prison, Wundanyi town	Mwatete town and environs
Intake / distribution system	Gravity; Pumping	Gravity
Source (quality)	spring (good) ; river (high turbidity)	Ngirwunyi Stream (high turbidity)
Treatment process	Chemical dosing of $AlSO_4^2$ (Aluminum sulphate) and $NaCO_3$ (Sodium Carbonate) for flocculation and sedimentation; disinfection with chlorine; residual Cl- tested	Chemical dosing of $AlSO_4^2$ (Aluminum sulphate) and $NaCO_3$ (Sodium Carbonate) for flocculation and sedimentation; disinfection with chlorine; residual Cl- tested
System production*	15 m ³ / h for 24 h ; total 700 m ³ /day	~ 500 m ³ / day
Population estimation ⁷	20 000 people	15 000 people
Overall demand / per capita demand	2024 m ³ /day ; 101 (l/c/d)	1995 m ³ /day ; 133 (l/c/d)
Coverage / deficit	-1324 m ³ /day	-1495 m ³ /day

*The level of non-revenue water (NRW) for the whole Taita-Taveta water service area is just over 50%.

⁷ The figure is based on the estimation of the company on people served in year 2007. The actual population of the areas is higher according to the census.

In addition to these two water schemes, TAVEVO owns 5 water kiosks in Mwatate town, which are operated by community groups (forth coming). These kiosks are served with water from the Mwatate water supply.

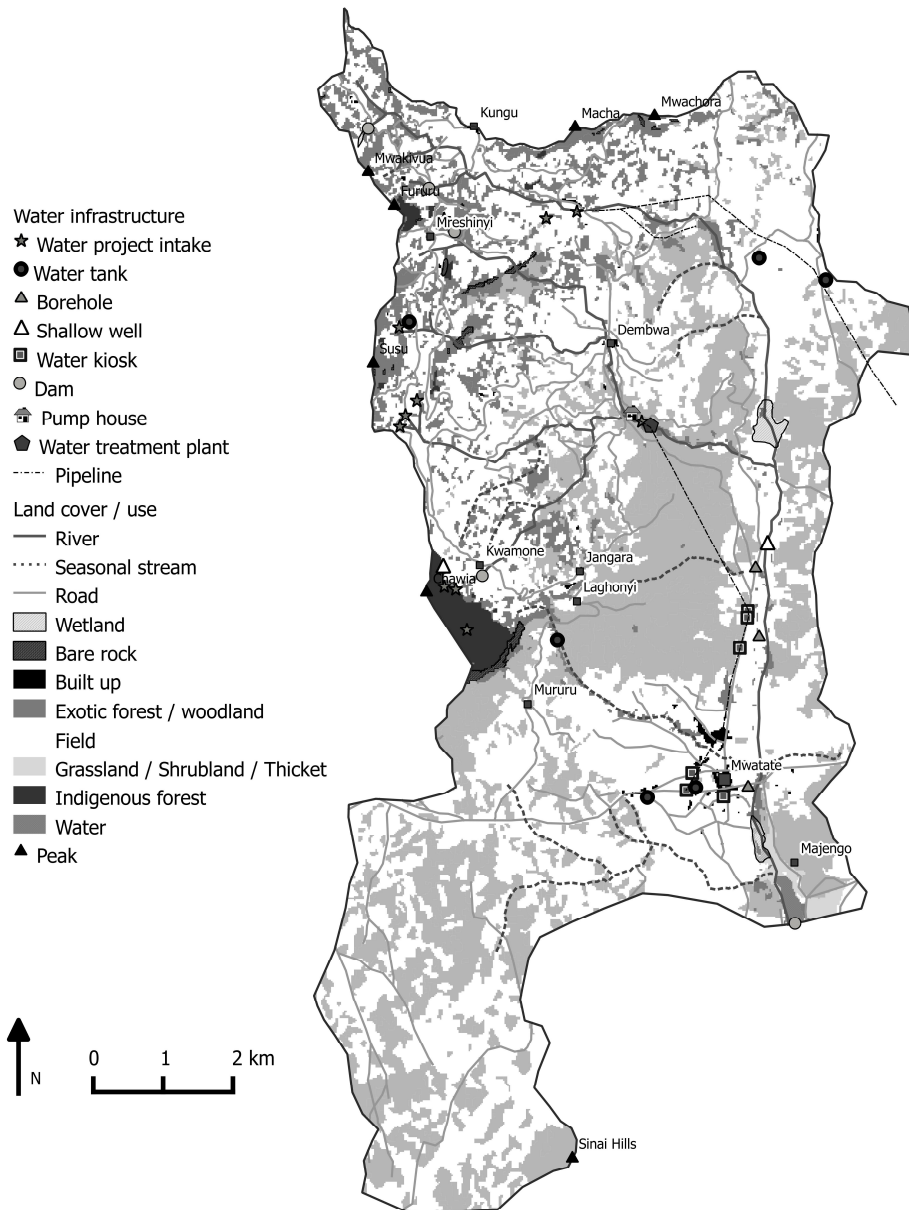


Figure 6. Mwatate Catchment map with important water infrastructure (Hohenthal *et al.* 2015). Note: the drawn pipelines are rough estimations of the routes of the pipelines.

There is no clear number of all the community based water supplies in Wundanyi, or Mwatate catchment. However, the projects presented in Table 6.were said to be the most actively operated (tariffs forthcoming in section 6.2.3).

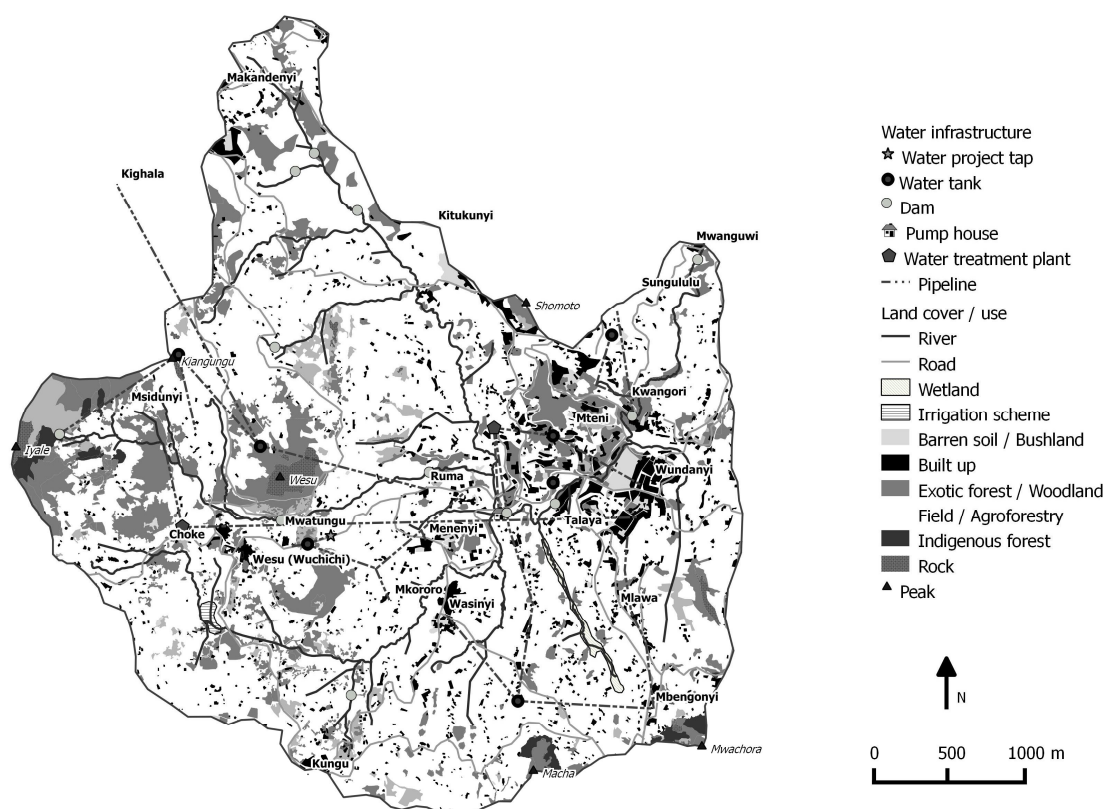


Figure 7. Wundanyi catchment and important water infrastructure (Hohenthal *et al.* 2015). Note: the drawn pipelines are rough estimations of the routes of the pipelines.

Table 6. Major community-based water supplies in research area

Name of provider	Source/ Treatment	Area of operation	Year started	Funded by
Dembwa – Wusi Water Project	Spring/ Yes, chlorine only	Upper Mwatate (Josa, Wusi, Kengwa, Dembwa, Ilole)	1975; 2000	GoK; CDF
Josa – Modambogho Water Project	River/ No	Upper – Lower Mwatate (Josa – Landi)	1991	DANIDA
Mtango Water – Project	Spring/ No	Upper Mwatate (Mtango, Kidaya)	2009	WSTF (CSR)
Mwasineyi Water Project	Borehole/ No	Lower Mwatate (Mwatunge, Maryland, Singila)	1999 2014	CDF, Pwani CCS
Iombonyi – Mwaroko water project*	Borehole	Upper Mwatate (Mwazola, Mwaroko, Iombonyi)	2014	LASDP (orig. Plan Intl; UNDP)
Sisters of mercy	Borehole	Kipusi - Mwatate		Catholic Church
Iyale – Msidunyi Water Project	Spring/ No (but tested)	Taita (Werugha Wesu)	1992	DDC, CDF
Toro Water Project	Spring/ No (but tested)	Taita (Wundanyi– Menenyi, Mkororo, Mwatungu)	2005	CDF
Kidakiwi water Project	Spring/ No (but tested)	Taita (Wundanyi – Kongori, Kilili)	2007	DANIDA/CDF

* Not operational yet

In addition to community supplies, there are also private more-or-less informal vendors⁸ especially near the largest market centers of Mwatate, who sell water either from private boreholes, self-constructed shallow wells or from the mainline of Mwatate water supply. These vendors charge in between 3 – 5 KES / 20 L. The busiest months for the vendors are the two dry seasons of January - March; and July – October. In Wundanyi area, there are practically no vendors, apart from individuals who sell water from their own connections to their neighbors during rationing, however, sometimes even at a profit of 20 KES / 20L (interview with a sub-chief in Wundanyi location, 18.02.2013). Especially in Mwatate area, an important business is also the bulk transportation of this water to households, public institutions and private business of the market areas. These are often individuals on ‘*boda-bodas*’ (motorbikes) who charge according to distance. Indeed during dry spells, the price of a 20 L jerrycan could go even up to 80 KES, when it is transported from the Kipusi valley, the area where most of the water from uphill has flown. Indeed this informal market characterizes the context in which the reform aimed to improve the situation for the poor.

6 RESULTS

Having presented the historical and political context of the reform, and the general institutional framework it established, as well as those of the waterscape, the translation of the discourses and practices the current reform regarding water justice and control will be now analyzed in this context. The following analysis draws upon the careful analysis of the styles of reasoning of the reform policy documents as well as the interviews carried out with the major actors in the water sector regarding the Taita Hills area, as presented in the methods.

6.1 Kenyan water policy reform analysis – the legal framework

The key documents of the policy reform reviewed in this study were the Water Act (2002), the principle legal framework that directs the entire sector together with the more explicit sub-sector oriented rules Water Resource Management Rules 2007 (MoWI 2007)); the National Water Services Strategy 2007 – 2015 (GoK 2007) and the Tariff Guidelines (WASREB 2008). However, to understand the overall reform style of reasoning, it was important to look at the reports behind these national water sector policies, namely the World Bank reports on water sector. Perhaps the most significant feature of the reform, as

⁸ Due to the informal nature of these vendors, the names of the vendors interviewed for this study (n=3) are not given.

was discussed on a more general note in the background section, clearly stated in a World Bank Report (Mehta *et al.* 2007), was the *redefinition of the role of the government*. What this means is that the emphasis in terms of functions of the government, are given to regulatory and enabling functions as opposed to providing direct service. This the report says, calls for “*institutional reforms that promote an integrated approach, including changes in procedures, attitudes and behavior and ensuring gender balance in participation throughout the sector and institutions.*” (ibid.) What this means in practice and in the perspective of justice will be explored through the above mentioned documents. Importantly the styles of reasoning of reform discourses and practices will be analyzed with regard to subject creation and responsibility, that is, who is responsible for improving and ensuring just access to water?

6.1.1 Water justice and the legal framework for water resource allocation and establishment of water supply infrastructure

In order to understand the implications of the reform documents in terms of water justice, it is vital to first present framework of water control, in this case defined by the water resource allocation policy, and then water access, defined more generally in association with water infrastructure.

The first step in order to gain access to water is to have a legal right to use the water. In the new institutional framework, water resources are allocated for various uses in the form of permits (Water Act 2002 section 25.) to be applied from the Water Resource Management Authority (WRMA). However, the very basic uses, such as drawing water from a spring or river in small quantities without the use of works, such as for domestic purposes, require no specific permissions or fees (Water Act 2002 section 26.). However, a permit has to be obtained for larger uses of water which have the potential to make a significant impact on the water resources. These larger uses include, among others, the diversion or abstraction of surface or ground water and water storage in dams and pans (WRM rules 6th schedule). For some systems, like water supply systems or boreholes, an Environmental Impact Assessment is also required (ibid.).

In order to be a ‘valid applicant’ for a permit, one needs to prove that he/she has a legal status and is either the owner of the land or an authorized operator of the system (WRM rules 18.). The water permit is therefore tied to the formal property rights and ownership of

land. The permits are valid for five years and may be renewed. A fee for the application, the five year permit, and a use rate for domestic, public and livestock use of 50 cents/m³ is charged (WRM rules 1. schedule). The fee for water permit and the rates charged clearly indicate a demand management approach, whereby the regulation of resource use and its conservation is assumed to result from a user charge fee.

According to section 32 of the Water Act (Water Act 2002) the following aspects, relevant in terms of distributional justice, are considered when issuing the permit: “(a) *existing lawful uses of the water*; (b) *efficient and beneficial use of water in the public interest*; (d) *the likely effect of the proposed water use on the water resource and on other water users*; (g) *the strategic importance of the proposed water use*.⁹” Indeed it is clearly stated in the Act that the use of water for domestic needs is the priority: “*The use of water for domestic purposes shall take precedence over the use of water for any other purpose, and the Authority may, in granting any permit, reserve such part of the quantity of water in a water resource as in its opinion is required for domestic purposes...*” (Water Act 2002 section 32 (2)). Another rule protecting the domestic water supplies is given in section 16 of the WRM rules which states that, if water works are to be established for purposes of supplying domestic, public or commercial use within the limits of supply of a water service provider, then the consent of the licensed water service provider (forthcoming) is required. Moreover, the licensee (the Board), has powers to restrict the use of water within its limits of supply if in its opinion a serious deficiency of water available for distribution exists, however with the approval of the WASREB (Water Act 2002 section 72.).

A permit may also be varied or cancelled entirely in certain circumstances. With regard to distributional justice these are important ‘corrective’ modes for the distribution of rights and benefits. In section 35. of the Water Act it is stated that a permit may be varied whenever it is shown to the “*satisfaction of the Authority*”, that owing to changes in circumstances like drought¹⁰, natural changes, increased demand or other cause, uses under a permit cause any of the following: “a) *inequity*; b) *a deterioration in the quality of water*; c) *a shortage of water for domestic purposes*; d) *a shortage of water for any other purpose which...should have priority*.” However, a permit holder is given a chance to object, unless

⁹ In addition to these considerations, the duration of the use and quality characteristics of the resource are also considered.

¹⁰ According to Water Act: “*a drought shall be deemed to exist in any area when the Minister, upon such information as seems to him sufficient, by order published in the Gazette declares that a drought exists in that area.*”

there is a declared drought or emergency. According to section 108. (Water Act 2002), the Minister may declare drought, according to the information given to him/her. In case this threatens the essential domestic water needs of people in a given area, he may also “*direct a person who has a supply of water in excess of his needs for domestic purposes to supply to the area concerned...*”. However, the Act does not specify what this information might be and how severe such a drought should be in order for it to lead to actions. For the case study this is particularly relevant, as many issues with water distribution deal with drought.

Another opportunity for corrective measures of distributional justice is given in section 36. of the Water Act (2002), which provides for a possibility to rationalize or review the permits in a given area in order to: *a) achieve a sustainable allocation of water from a water resource which is under stress; (b) to achieve equity in allocations; (c) to promote beneficial use of water in the public interest...* Other options for permit variations or cancellations include section 37. of the Act (2002), which allows the cancellation of a permit in order to enable a state scheme or community project to be undertaken (forthcoming). In this case the permit holder will be given a chance to object and is compensated by the Authority. A permit may also be cancelled in the case of a committed violation or a failure to make beneficial use of the water (Water Act 2002 section 38.). A permit may be varied also in the case that a hydrographical survey has been made, and new information about the water resource becomes available (Water Act 2002 Section 39).

The legal framework stands on the premise that the State is the ultimate guarantor of the ‘public interest’ and that by its authorities, the regulation of the distribution of rights and responsibilities towards water are allocated in a just manner. How is public interest defined? This question is relevant especially when the authorities are given the mandate to choose e.g. the ‘strategic uses of water’. Public interest is not directly defined in any part of the Act, but in section 19. (Water Act 2002) the meaning of ‘public purpose’ in relation to a ‘state scheme’ is defined as “*the supply of water, or of electrical energy derived from the energy of moving water, to the public or any section of the public*” among others¹¹. In section 20. and 21. (Water Act 2002) a state scheme is given a special status and precedence and priority above all other schemes of water use. This is important with regard

¹¹ The other public purposes include drainage of lands; protection of water resources or catchments; flood control; conservation of water quality; measurement of water; storage of water for bulk distributions or construction of reservoirs.

to the land property right as for a state scheme the Minister may acquire land by law (ibid.). Moreover, no permit is required for a state scheme, as it transcends the powers of the Authority. Section 20. (Water Act 2002) also enables the Minister to order that works for a state scheme or community project, in respective order, “...*be aided from public moneys to such extent as may be authorized by Parliament.*” However, in section 24. (Water Act 2002) a condition is laid on the benefits of ‘public purpose’: when a part of a state scheme or community project (forthcoming) has been paid by money provided by the Parliament, the Minister may demand any person who has benefited from the scheme or project to pay the Government a water rate for that benefit.

A similar status of ‘public purpose’ is given to community projects, however, below a state scheme in the hierarchy. A community project, is given priority and status to take precedence over other works for water use, and like the state scheme, can be aided from public funds. A community project (Water Act 2002 section 19.) refers to a project operating under a permit for purposes which are (a) connected with the use of water or the drainage of land within a given area; and (b) classified and declared by notice published in the Gazette by the Authority, with the approval of the Minister, as community purposes. Unlike a state scheme, a community project has conditions: it has to be approved by persons owning or occupying at least 2/3 of the area for the project and a provision of an alternative supply of water has to be made by the project to permit holders likely to be adversely affected or unable to benefit from the scheme (Water Act 2002 section 23.).

How then can the public influence the decisions about permit allocation and ensuring there is equity in terms of use priorities for public purposes? In terms of water rights allocation a permit application shall be subject to public consultation. The general requirements of *public consultation* are defined in terms informing the public (Water Act 2002 section 107). The Act states further that copies of this applications will be available to the public with a reasonable cost. With regard to the water permit process, this means, that the Authority must notify monthly of permit applications and their purpose falling in larger use categories in the Gazette, as well as in a National Newspaper and a notice of all applications should be displayed in the administrative offices of the Districts¹² as well as the subsequent administrative levels including the Chief’s offices (WRM Rules 2007

¹² This has changed now in the county governments – districts are within counties.

section 29). A copy of the permit application will be given to a registered Water Resources Users Association (WRUA) of the area, who will submit comments or objections in writing to the Authority within a time frame of 30 days (WRM Rules 2007 section 28), the same applying for any member of the public, albeit the cost of the application (Water Act 2002 section 29; WRM Rules 2007 section 30).¹³ After this process, the Authority will give a copy of any objections to the WRUA and if necessary also conduct a meeting at the site of the permit applicant, to which relevant stakeholders, including the WRUA, will be invited and which will be open to the public (Water Act 2002 Section 31,).

However, importantly, the status of the WRUA depends on whether a Memorandum of Understanding has been made between it and the Authority. In case one has been made (as according to section 10. in the WRM rules 2007) the Authority may provide administrative, technical or financial support to the WRUA in matters related to collaborative water resource management. However, a registration with the Authority does not “*confer a legal standing on the WRUA*” (ibid.). This is significant as the WRUAs are given a mandate to ensure that there is equity in allocations. Without legal standing, this task remains with only rhetoric value.

6.1.2 Market enabling regulation and corporate governance - the changing micro-economy of water supply

While the previous section dealt with the water permit applications and water resource allocations for different uses, the priority being domestic use, this section analyses the law and policy texts that deal specifically with water services and its operation principles.

The scarcity of funds in the Kenyan water infrastructure sector to meet the Millennium Development Goals, drives the sector to find solutions for meeting the funding gap. According to the World Bank infrastructure report (Briceño-Garmendia & Shkaratan 2011), the funding gap is almost 80% in the Kenyan water and sanitation sector with regard to the targets. A part of this funding gap is reasoned to result from inefficiencies in the services, which results from according to the NWSS 2007 - 2015 (GoK 2007), the “*extremely high levels of unaccounted for water (UFW), on average 60%, which consists*

¹³ “(1) The Authority may, if in its opinion exceptional circumstances warrant such action, grant a permit authorizing, unconditionally or subject to conditions, the use of water from a water resource and construction of the works required therefor, without subjecting the application to public consultation. (Section33, Water Act).” However, the interference with domestic requirements of other users will be considered when applying this exception.

of losses of water due to theft, informal or unpaid connections” (ibid.). The report argues that poor metering and collection efficiency is insufficient, due to poor management of providers. Especially the government institutions are the greatest debtors of WSS utilities, that is, they do not pay for WSS as they do not budget for them. In addition, the funds generated through water revenue are said to be diverted by Municipalities to other needs than investments in infrastructure (ibid.). Furthermore, the tariffs are not in line with the costs of producing water, resulting in financial difficulties and unsustainable operation of utilities. This is said to penalize especially the poor consumers, as the connections cannot be extended to their areas (ibid.).

The reform thus aims to improve the efficiency of the sector by commercializing the services (GoK 2007). This refers to the idea that the sector will operate on principles of the private sector, including efficiency, competition and corporate governance, without forgetting the ethical considerations (forth coming). This is also outlined in the Water Act (2002) in section 57., which states that “*water services shall be provided on commercial basis and with sound business principles*”. The commercialization is argued to result in increased efficiency and also in significant improvements in terms of access to water without a need for large investments in the sector. The focus of the sector is therefore mainly concerned with demand management. The concept of demand management refers to focusing on managing the demand side eg. efficient water use, water metering, billing, effective collection, network repair etc.) over supply management (tapping new water sources, extending treatment and storage capacity, etc.) which also implies that priority is given to the rehabilitation of existing systems for water production than increasing capacity (GoK 2007). The focus on demand management is also justified by achieving environmental sustainability in the context of scarce water resources.

The commercialization of the sector also means that funding of the water sector is increasingly user based. The Act (2002 section 20.) provides for the use of the revenue charges from both water user fees as well as from license fees in the functions of the regulatory authorities, WRMA and WASREB, respectively. However other sources of funding still remain. The Ministry of Water can provide grants, loans or subsidies to the regulatory authorities from the money provided by the Parliament (ibid.). Furthermore, funds are sought from development cooperation as well as from private sector. In case of

need of capital investments, the private-public partnerships are searched to make the needed investments. Ring-fencing of funds for investment is also called for.

The NWSS 2007 – 2015 (GoK 2007) outlines also different challenges and strategic responses in the water supply of urban and rural areas. The urban areas have a higher rate of piped networks, and hence the cost-recovery principles are more heavily pushed in urban settings. The aim is that each consumer group receives the service level it can sustain. The poor are considered in many ways. For example the tariffs should not be significantly higher in the public outlets than the tariff for lifeline consumption at household connections. It is also noted that public outlets should be promoted wherever a network with household connections cannot be established or maintained by the poor. However, wherever possible, the poor should benefit from the economies of scale, meaning that larger systems could scale up to meet demands of poor. Moreover, in terms of running the services, the NWSS 2007-2015 (GoK 2007) envisages that directors and managers of WSPs undergo training on corporate governance and social responsibility as part of induction upon appointment and at least once every 2 years. In this sense, the utilities are supposed to run like corporations, and the ethical considerations would then fall under the corporate social responsibility (CSR). This is essentially what socially responsible commercialization means in terms of operating utilities.

However, unlike for urban areas, there is no specific policy for the rural areas. Indeed in the rural areas, majority relies on surface water sources, which are not regarded by the MDGs as sustainable or safe access to water. In rural areas, the choice of preferably low-cost technology therefore remains with the communities, as the piped water systems are often built on demand-driven bases. While there is not such a clear indication of shifting towards corporate governance principles in the NWSS (GoK 2007), it is said that wherever possible, shifts towards commercialization should be made. Cost-recovery in terms of at least recovering operation and maintenance costs from user fees is thus also strongly encouraged for the rural water supplies, but justified on the basis of enhancing ownership of the projects through ‘participatory processes’ such as the before mentioned choice of technology and importantly, community contributions. Moreover, the adjustment of user charges is justified by the idea that if user charges are not collected, the poor will have to rely on expensive services from private service providers. It is thus better that everybody

pays, according to ability, rather than no one pays. In this sense a consumer/customer subject is assumed to exist or at least waiting to be created (also forthcoming).

Moreover, The WSTF/WSBs are facilitating the development of national standards regarding design and management of installations as well as governance, especially in terms of transparency and accountability. In addition, linking and clustering of the bigger rural supplies with WSS utilities of urban areas is aided by the WASREB and WSB, in order to obtain the benefits of economies of scale and attract professionals in the management. If this is not possible then the *“formal service providers shall be obliged and offered incentives to cover underserved areas within a given timeframe. Tariff negotiations and pro-poor financing mechanism shall help to achieve such aims (GoK 2007)”*. Indeed, the Water Services Trust Fund (WSTF), which gets its money from the Parliament, and by donations, and grants (Water Act 2002 Section 83.), has been established for the development of infrastructure and financing community water projects. The WSTF has developed a community project cycle to facilitate channeling finances directly to communities. In this sense while the different nature of water infrastructure in the rural areas of Kenya is considered in the reform, there is a clear indication towards corporatization of water services also in the rural areas.

This is also clear in the example given in the World Bank report (Mehta *et al.* 2007) on ‘good practice’ regarding community water supply. The following characteristics are found in this example: 1) Merging of two projects into one society. 2) Large service area (over 100 km²) and network of lines and storage tanks. 3) Scheme managed by an elected management committee with employees. 4) Large number of registered members, majority having individual metered connections. 5) Commercial approach collecting more than it spends on operational costs. 6) Auditing by an external auditor; reports presented annually to the committee. 7) Sharing its management lessons to others. However, clearly the context of this project was not described.¹⁴

¹⁴ The same project is found in a report by Oxfam (Davis *et al.* 1993), revealing that the project was based in Meru District where the context was beneficial in many ways for the project to be successful with its commercial approach. 1) there was adequate supply of water even to cater for small-scale irrigation and other economic needs, and 2) a strong cash economy. Another workshop report from 1997 (URL: www.ircwash.org/sites/default/files/205.1-97CO-13757.pdf), in which the same case was presented, noted, that *“high payment of shares and deposits (11 000 – 12 000 KES)) makes less fortunate members unable to have water connections.”* Sometimes the committee took coffee cherries as payment for water bills. In this regard, the commercial operation of water services did not necessarily mean equitable access to water.

The market-like orientation is also visible in the larger vision implied in the NWSS 2007-2015 and more clearly laid out in a World Bank report (Mehta *et al.* 2007). In this vision, the water sector should operate as a market, whereby all the services required by the water suppliers would be bought. In the NWSS (GoK 2007) this is also noted in that once the transfer of the rural water schemes under the WSB would take place, then all the services, e.g. for maintenance purposes, would be given by the WSB or the local private sector on commercial principles. The larger vision behind this idea is articulated by the World Bank report (Mehta *et al.* 2007), according to which the ultimate goal of the reform is to transfer public civil servants from the government service to private sector in the form of consultants and other private firms that will then be available as services to be bought by the water enterprises for “affordable prices”. This is the mode of public-private partnerships envisaged by the reform. The role of the public sector and finance would remain in regulating the market, with the main task of creating an enabling business environment. This would mean for example that the regulatory authorities would require certain services be to be bought as a condition to receive funds/subsidies, thus simultaneously helping to create demand for the supporting services. This would mean supporting certain businesses or ‘facilitating’ support structures with public funds. This approach is justified based on the argument that the costs will be reduced and the access to water increased as the water enterprises become viable.

In terms of strategic planning and the decision making of where water infrastructure should be constructed, the reform outlined the following guidelines. Whereas this task was done before by the provider, which was either the Ministry of Water Development (as the name also implies) or the local government, the reform separated the provision from strategic planning. However in Kenya, the *“reforms initiated by key service sectors... respond to the weaknesses in the DFRD system and local authorities and largely attempt to bypass both these systems, creating new institutional arrangements and financing mechanisms through deconcentration and delegation to local level facilities.”* (World Bank 2002) In this sense, it is clear that the neoliberal thought of corruptness of local authorities and the district administration which both had direct links to the state (especially during Moi era), was the main justification. Instead then, the planning was moved to apolitical entities, the Water Service Boards. Moreover, on the local scale, planning was replaced by the market-based allocation of answering to demand, in the form of demand-based or community-led

development. However, whether or not these providers would make a profit is not discussed explicitly.

6.1.3 Equity and socially responsible commercialization – human right discourse and the creation of consumer-citizen

The market-oriented approach, however, entails social goals as an intrinsic part of the reform objectives. Indeed, as the international policy discourse has moved towards the Human Right approach (UNHR *et al.* 2010), so have the national water policies and strategies had to consider this aspect more explicitly. While the Water Act (2002) does not specifically define a basic human need for water nor engages with ‘human right’ discourse directly, the WRM Rules 2007, and the NWSS (2007-2015) and the Tariff Guidelines (WASREB 2008), mention it more specifically. The NWSS (GoK 2007), makes direct reference to it as follows: “*The guiding principles for the water sector reform and for the NWSS are: 1. Sustainable access to safe water and basic sanitation is a human right...*”.

The human right to water or the basic human need, has also been defined in terms of adequate quantity and access. The WRM Rules (MoWI 2007) define basic human need as “*...the quantity of water required for drinking, food preparation, washing of clothes, bathing, basic... assumed to be equal to 25 L/person/day.*” However, while neither the Rules nor the Act give any further definition of adequate access, in the definitions of NWSS (GoK 2007) and Tariff guidelines (WASREB 2008), the human right to water is stated as 20 L /person / day and the adequate access is achieved when the source is available at max. 30 min or 2 km distance, in urban and rural areas respectively. Furthermore, the affordability of the water should be no more than 5 % of the monthly income for this minimum quantity (forthcoming). Compared to the UN Human Rights Commission’s definition of human right to water, the Kenyan formulations differ slightly. In their definition (following guidelines of the World Health Organization (WHO)), the human right to water and access thereto is sufficient when it is 50-100 L/person/day, though minimally when 20-25 L/person/day. The appropriate availability would be at 30 min or 1 km distance, preferably a household connection. Further, the costs should not exceed 3% of the monthly income. The water should also be safe according to the WHO guidelines (UNHR *et al.* 2010). Therefore it is clear, that the Kenyan reform documents have had to compromise on the indicators as, stated by the NWSS 2007 – 2015 , the ones set by the international standards are too ambitious.

Moreover, in order to develop a process of “socially responsible commercialization” the WASREB has chosen an approach, which aims at ensuring that the WSPs cover their recurrent costs and allow for improved sustainable access to safe water for the poor. The guidelines state that *“tariff adjustments will not be made without consideration of the ability to pay, especially of the poor population.”* The tariff guidelines (WASREB 2008) further state a relevant point in the light of the research questions: *“The described objectives might be perceived as conflictive in their simultaneous achievement. The appropriate use of this guideline should allow the achievement of divergent objectives at the same time. The tariff structure can be designed e.g. to balance financial sustainability with affordability by including cross-subsidies between consumer groups and allowing for a lifeline tariff for the poor.”*

The tariffs are designed with a structure that includes a “social block tariff”, charging a lower percentage of the average tariff (e.g. 50-70%) for the consumption of up to 6m³. After this the tariffs rise (WASREB 2008). The logic of cross-subsidization assumes that there are enough people who consume more water and so pay more, in this way “subsidizing” or redistributing the money to the poorer consumers. This, the guidelines state (ibid.), will ensure that at least the operational and maintenance (O&M) costs are covered by the tariffs. Also the commercial and administrative consumers pay more for the water, and they do not have block tariffs. It is therefore ‘fair’ that everyone should pay in order to run the company. However, the tariff guidelines also speak for individual connections and the removal of shared connections in order to achieve efficiency (ibid.). For the poor who cannot afford to have an individual connection, standpipes and kiosks with the minimum of affordable 20 L of water should be made available. There are also various incentives and performance targets given by WASREB for both the providers and the consumers in the form of performance targets, curiously rewarding the WSPs and WSBs who make “extraordinary efforts” to improve access to water by the poor customers (ibid.).

The considerations for justice also concern the question of violations – in this case – what happens if a person or an institution does not pay for the water? Should the person be disconnected – in the name of ‘fairness’ regarding others? According to the NWSS, the biggest problems with non-payment regard the government institutions (GoK 2007). The

NWSS provides discounts for those who pay on time and states that “...*but exaggerated discounts or rebates for those who pay late is against the principle of fairness to all customers*” (ibid.). The NWSS makes a harsher claim on the government institutions who fail to pay their bills on time: “*The Ministry of Finance issues a letter to all government institutions indicating that WSPs have the obligation to suspend services in case of non-payment of water bills... All government institutions should provide for adequate funds in the annual budget for WSS services received*” (ibid.). However, according to the UN – Human right covenant, general comment 15. that no individual under any circumstance should be deprived of minimum essential level of water i.e. that full disconnection may be done only if there is an alternative source to replace it. This presumes that disconnections of institutions serving vulnerable groups like schools, hospitals or refugee camps are prohibited (UNHR *et al.* 2010). Hence, while the human right approach is included in the sector strategy, it does not apply to all cases.

6.1.4 Summary – conceptualizations of justice

Indeed, there are several guiding principles and practices that, according to the style of reasoning of the policy documents, would lead to equitable allocation of water resource. Firstly, the permit system established by the reform maintains the private property rights to water by tying the permit for water extraction to land ownership. Furthermore, the regulation of the amount of water being used by a permit is assumed to be carried out by price and demand management. The use priority, which is stated to be public interest (state and community) and the use of water for domestic purposes is guarded by law, although land ownership is required. In this regard if this regulated market-based allocation based on demand and private property, fails and results in inequity or if drought occurs, then the allocation can be corrected by the regulating authority, provided that there is proper evidence and information. Therefore the ‘externalities’ produced by the market based allocation, rely on available and valid ‘information’, which is compatible with the rational market logic. This, as we shall see, is a problematic assumption in the realities of Taita.

In terms of participatory justice the allocation of water resources is supposed to go through public consultation, though this remains to be notification and consultation rather than more profound negotiation. The WRUA is a representative of public who should by law be also let give the views and let object the decisions of WRMA, though the ultimate decision

remains with WRMA. However, the WRUA is also mandated to make sure allocation is done equally. It is not clear therefore what happens if the WRUA does not agree with the WRMA decision. The objection can be made but it has to go to court process, which are expensive for many rural communities.

In the water services sector the concept of justice is that everybody is responsible for their own consumption needs (cost recovery), apart from the very poor, who are given subsidies in order to obtain the minimum lifeline, norm-defined quantity. In this regard water is considered a merit good. The state is given minimal responsibility ending with the provision of the norm defined amount, the human right to water, for an *affordable* price and leaving the individual the responsibility to cater for oneself more. The reform, however, also calls for responsibility of the higher income people through cross-subsidy, who are said to have benefited unduly from subsidies and have ignored their responsibility for paying the amount for the consumed water. Moreover, fairness is achieved when everybody pays for the water services, as this equalizes the burden of payment in the society. Table 7. summarizes the key ideas and their practical articulations found in the reform documents.

Table 7. Summary of key aspects of water justice in reform documents

Policy document	Distributional justice	Participation and justice
Water Act (2002)	<ul style="list-style-type: none"> - Water permits / water rights regulation <ul style="list-style-type: none"> • Linked to private property (land) rights • corrective measures <ul style="list-style-type: none"> ▪ Domestic use priority ▪ Equity in allocations ▪ Drought • Demand management - Public interest priority <ul style="list-style-type: none"> • public funds allocated by Minister - Business and commercial principles in water services 	<ul style="list-style-type: none"> - State ownership of water resources – guarantee of public interest - Public consultation reg. water allocations <ul style="list-style-type: none"> • limited to notification - Public objection through WRUA (ensure equity) - Top-down decision making of funds - Decision making relies on complex information needing specific high level skills and equipment
Water Resource Management Rules (2007)	<ul style="list-style-type: none"> - Basic need (25 L/person/day) - Water reserves for public interest – priority domestic use 	<ul style="list-style-type: none"> - Public complaint - community participation (WRUA)
National Water Services Strategy (2007-2015)	<ul style="list-style-type: none"> - Water as economic and social good (merit good) - Water as human right (20 L/person/day; 5% income ~ affordable) - Planning water services <ul style="list-style-type: none"> • Financial sustainability • Business principles • Economies of scale 	<ul style="list-style-type: none"> - Ownership – participation by choice of technology; financial contribution

	<ul style="list-style-type: none"> • private sector participation • demand management • pro-poor projects 	
Tariff Guidelines (2008)	<ul style="list-style-type: none"> - Financial sustainability <ul style="list-style-type: none"> • cost-recovery • Fairness achieved when everyone pays • Performance targets - Socially responsible commercialization <ul style="list-style-type: none"> • pro-poor tariffs / • cross-subsidization 	<ul style="list-style-type: none"> - Participation of everyone in cost-recovery - Traditional sources are dirty vs. “safe water”

6.2 Translation of reform principles in the waterscape of Taita Hills

In this section the results of the empirical analysis are presented. Special focus is given to the issues outlined in the reform documents both in their practical terms, as well as in terms of the principles. Therefore, the purpose is to reflect upon the already visible and potential challenges the ideas and practices of the reform has had in a complex context of already structural inequalities embedded in history. First the background of the water reform translation will be briefly outlined. Then, I will discuss how the operation of water services and its micro economy is being reshaped by corporate principles and the challenges this provides to just distribution in the particular context. Then the establishment of sovereign consumers will be discussed in the light of local realities. Next, the production of water for the market will be presented in the context of water resource allocation and ethics. Finally, the politics of water control in Taita Hills and its collision with the reform objectives and the more detailed social justice analysis will be discussed in the next chapter.

Indeed the reform brought about by the Water Act (2002) seemed to have only infused the area for few years after the official transition period that had ended in 2008. At the time of the research, the process of aligning the Water Act (2002) with the Constitution 2010 was already on-going and a draft Bill of a new Act was available online. Many of the officers were also aware of this process and waiting for changes. The reform therefore had not fully been rolled-out. However, how and in what ways this integration had taken place discursively and in practice will be presented in the following sections in dialogue with the historical context.

6.2.1 Socially responsible commercialization and corporate governance of the public water company

As the Water Act stated, the water providers should operate their services with sound business principles, and adopt corporate governance principles of efficiency, accountability, cost-recovery and demand management through metering. In this regard, a new subject, the sovereign consumer with calculative choice and rationality is assumed to exist. It is therefore the existing supplies that are reprogrammed to use the water more efficiently. Let us then look at how the different providers had adopted these measures and how they had (re)organized their operations, including their socially responsible tariffs.

A major part of the reform was to commercialize the municipal water undertakers, and make them into a public water company. As the rolling-out of the reform had only recently started, the TAVEVO Water and Sewerage Company Ltd., had been formed in 2006 as a limited private water company with the three councils (namely the Voi municipal council, the Taita-Taveta county council, and the Taveta town council) as the major shareholders. The operations of the company started in 2007 (TAVEVO 2013). In Wundanyi area, the water supply system formerly run by the Ministry of Water and the National Water Conservation and Pipeline Corporation (NWCP) had already been transferred to the company. However, the second water supply in the study area serving Mwatate town, operated by the county council, was still in the process of being transferred to the company during the spring 2013. It did not become clear, why the process had delayed, and it seemed that the Coast Water Service Board was oblivious of this as well. However, as had also been noted elsewhere in Kenya (Owuor & Foeken 2009), the changes envisaged by the reform in terms of getting staff with corporate background, had not taken place.

In terms of strategic planning then, the local government no longer had much functions, apart from answering to local demand aired out through the councilors and through the LASDAP, the Local Authority Service Delivery Action Plan, process. However, the clerk of the county council of Taita-Taveta, said that this would mainly be in the form of financial facilitation of small investments like water tanks, which would then be handed over to TAVEVO to manage. In this regard, the role of the local government was reduced to providing “targeted subsidies”, which were programmed to meet demand. The clerk further said one major problem to be the lack of a master development plan for the whole area, which he saw was necessary for the development (Interview with Taita-Taveta

County Council Clerk, 14.2.2013). The interview was carried out just before the elections after which the new county government would be elected and start as an independent devolved government.

The company had signed a service provision agreement with the CWSB and developed a strategic and business plan for its operations (TAVEVO 2008-2013). In this plan, the reform principles are clearly visible in the mission statement: *“The mission of TAVEVO is to provide adequate potable piped water and sewerage services efficiently and economically to the community in urban centers in Taita Taveta District.”* Furthermore, the core values of the company are said to be: *“customer orientation, teamwork (participation), social responsibility (good corporate institution), zero tolerance to corruption (transparency and accountability) and pursuit of excellence.”*

The ‘corporatization’ of the water supply in its financial sense had not fully taken place as shared by the local water officer of the CWSB, the company was running on donor funding and government subsidies, not with its revenue from fees. In fact, the current staff was still paid by the central government, the Ministry of Water and Irrigation, as the company did not have the financial capacity to pay them. Moreover, the operations were challenged and made expensive by the fact that the rehabilitation of the water infrastructure, as had been promised by the reformers to be carried by the government, had not been done (Interview with CWSB District Area Coordinator, Wundanyi, 4.2.2013).

Indeed these challenges were clear also from the strengths and weaknesses analysis of the company, which stated the main weaknesses to be e.g. : *“inheritance of obsolete facilities making repairs very expensive; high amount of an accounted for water (UFW); inadequate water supply - demand outstrips supply; large number of bulk consumers on a low flat rate; low skill level of staff and inadequate tools and transport; inadequate capital base and inherited debt from MoWI; negative cash flows; and inability to access and source for funding.”* The strengths for the company was *“the only organization mandated to providing and controlling water and sanitation services in Taita Taveta District”* and the fact that there was a large tourism and hospitality industry in the area, referring especially to Voi town and the safari lodges, that consume a lot of water and have revenue to pay (TAVEVO 2013, p. 31).

Despite these financial challenges, the company provided individual metered connections and a tariff structure that at least in principle (forth coming) reflected the water consumed, and was thus trying to follow the guidelines of the reform and the regulator. The connection fee to the network was 1850 KES to which the cost of pipes and the meter were added. For the piped water connections in Mwatate and Wundanyi area, the company had a social tariff structure, a flat rate, that was meant to subsidize the poorer users by the higher consumption rate and charge of the better-off more consuming users. The first tariff block counted for 0-6 m³ consumption rate in a month, equaling to 250 KES monthly; for the second block, from 6 m³ up to 10 m³, 450 KES per month is charged. This tariff system gives a so called 'lifeline' tariff for the lowest amount of consumption, after which the buying power of the household determines the amount they can consume. However, the tariff was the same in all the areas of Taita, despite the clear areal stratification of society in terms of differences in wealth. Indeed, the water company also mentioned that a major challenge in their area in terms of their operations is *"inadequate financial resources for the water company because it is difficult to deliver service at a cost-recovery rate to the very poor."* (TAVEVO 2013) However, in their strategic report, the company stated that possible threat for the company was also the *"unclear and restrictive tariff policies imposed by the Central Government"* (*ibid.*). In this regard the economic efficiency pressures seemed to be conflicting with the reality on the ground. Moreover, as will be later discussed, despite the aims for metering and billing according to consumption, the company had many challenges due to the variable water resources in the area.

In attempting to meet social goals where fewer water sources were available and the people generally poorer, as in Mwatate town, the company had put up a few kiosks with the funds from the WSTF. The kiosks were supplied water from the mainline and the water was further sold by a women's group to people according to 20 L jerrycan price of 2 KES. The company charged the water bill from the group leaving them a little profit to be used for community causes. Indeed this is what the reform principle of targeted subsidies meant in practice. The consideration of 'vulnerable' or marginalized groups and prioritizing them in the selection of who would operate the kiosk, was a policy of the WSTF, and indeed a precondition for donor funds. However, according to the technical engineer of the company, the company itself did not have a separate equity policy in their normal operations. In this sense they focused on providing economically efficient services.

The water company also provided water for some public institutions like the largest hospitals and some schools which were within their supply range. The hospitals had a different, subsidized, tariff, but schools had the same tariff as individual consumers. In terms of disconnection policy, the reform was harsher than utilities of many eg. European countries. It was an accepted practice carried out by the company to shut down water to schools, as that would give ‘*an incentive*’ for the school (or government) to pay faster (Interview County Council Clerk, 14.2.2013).

The tension between the economic and social goals of water services was indeed visible in the higher levels of the new management structure. The interview with the CEO of the Coast Water Services Board (CWSB) revealed that indeed, the commercial operation principles were deeply embedded in the management principles of piped water networks, also determining the concept of equity:

“C: Yeah I think we are giving water freely to everybody, you see it is business. But ok, what I can say, as I've told you, we deal with the bigger pipelines, we don't deal directly with individual people, we give this water to the companies. And then they come now and sell it to willing buyers, everybody who wishes to be connected is connected, nobody can be denied water. But of course I can get your point, that some rural areas which don't have pipelines, because you see these pipelines just come to the towns, but in the hinter land, where maybe there is no piped water, that's where we have these water pans, we have boreholes, such things. But you see, water here like the one which is going in the pipelines it is business, so anybody who wants is connected, so long as you're able to pay (laughs). But in the rural areas, where there is no piped water we do the water pans and boreholes.” (interview with CWSB CEO 26.3.2015)

6.2.2 Commercialization and the micro-level regulatory framework

As was presented in the document analysis, one key feature of the reform was to reduce the size of the public offices and centralize the regulatory tasks to a few national level entities. In addition, the support services used by the water service providers were increasingly meant to be bought from a market of private operators instead of using the services of public officers. In this sense public services were programmed to respond to demand.

While a shift to community-led service provision and reduction of resources in public officers had already started during structural adjustment, the reform did not change this direction. According to the reform, as discussed before, the district level officers were to be shifted to the water service boards, remaining with one district level area coordinator that would be responsible for coordinating all the community water supplies, as well as overseeing the functioning of the main water provider. According to the reform documents, the role of these officers was to shift slowly towards consultation, as a support service market was to be created where projects could 'buy' services they needed. At the time of the research however, these local area coordinators still helped the community water supplies to design the projects in terms of their technical aspects (e.g. water source productivity and demand calculations) and checked that they were designed according to the standards. They also guided them to write proposals for the donor market.

With the new reform principles of corporate management, they also encouraged the communities with the right tariff structures and the operational details, as many projects faced challenges especially in terms of maintenance.

“W: You see the challenges with the rural water supplies, the community to some extent assumes that they should get that water for free. And we have been insisting that this water is not for free. In fact we have been telling them, they should revise their tariffs. For instance if an household is going to pay about a 30 shillings or 50 shillings a month and that is a household. Really this 30 shillings cannot run that project. It cannot. So I think the issue here is to let the community know that this water project should be self-sustaining and as such they should get enough money to pay for scheme attendance. And to cater for any emergencies like sometimes there is the bill for power; if there is burst purchase all those fittings. But that has been an issue. They need to get water which is somehow free. It has been a problem, a challenge to the management committees. A very big challenge. And our office can work out all these water tariffs, we can, there are ways on how to develop these tariffs. (Interview with CWSB District Area Coordinator, Wundanyi, 4.2.2013)

The CWSB area coordinators suggested appropriate tariffs for gravity-fed kiosks and vendors to be 2 KES/ 20L jerry can, and 5 KES / 20L for borehole pumping systems. However, occasionally, the officers were able to transfer some funds coming from the Ministry to support community projects, but this was a rare case, and was a practice that

was going to end with the reform progress as all funds were to come from the WSBs. The officers mainly assisted the project committees with finding funding and writing proposals.

In terms of considering equity, the CWSB gave some room for targeted exceptions of paying in their tariff guidelines. The following quotation reflects this well:

W: Because the projects we are dealing with are community based so those groups are within the community, we cannot tell whether they are marginalized, or how they are minority, because the project is supposed to cater for the community. What we normally tell them for example, within their community when they're supplying water, for instance when there is an old mama, a homestead with a very old mama, that old grandma cannot pay for water. They have the discretion to at least give that old mama water for free.

M: So there are those kind of exceptions?

W: Yeah there is those kinds of exceptions. And there also maybe a household where there are children, and the parents are not there, I think they cater for them free.

(Interview with CWSB District Area Coordinator, Wundanyi, 4.2.2013)

The officers also took part in elections of the committees and were an important “neutral” entity in dealing with conflicts between committee members. In fact, while conflict resolution was often the role of the local administration, the chiefs (an institution that was going to be abolished by the new county government), water related issues that went beyond the chief’s know-how were forwarded to the water officers. One such case was observed at our workshops, where one local chief reported to the water officer, that in her area the water committee was abusing the project funds. He was asked to come and try to resolve the case.

A major challenge for regulation was that the coordinators had large jurisdiction areas resulting in a large number of projects to handle. The officers complained of resource scarcity especially for transportation. Indeed, a general issue for the officers was a lack of time to answer all the community calls, and even to familiarize with the projects properly. This in part explained the shift toward demand driven approaches, which meant that the officers would not monitor regularly the projects but would answer to demand. Several local farmers and some water project committee members, complained that the officers were so busy all the time, and that the government services had a price, in the form of

‘transport allowances’ and that each visit of the water officer cost them 4000 KES. While the officers said that their guidance was free of charge, they admitted that any matter which included transport to a site or involved additional labor would have to be catered for by the ‘customer’. Indeed the shift towards demand-driven services was a step towards creating a support service market. However, in the study area the only available private sector services for the water projects were local plumbers and technicians who were able to fix small problems with the infrastructure. However, any larger issues required more qualifications, and further costs. The community often tried to solve most of the problems amongst themselves, as coming up with funds to ask the officer to come was not possible and even less so the hiring of a private consultant.

In terms of regulating the use priority of water resources as well as equity in terms of distribution, the reform had established the community-based Water Resource Users Associations (WRUAs) in each river sub-catchment area of the hills. However, in practice, these groups had been either recently formed or were still in the process of beginning to ‘fulfill their mandates’ as they were waiting of funding. They were supposed to register all the water projects in their areas as well as coordinate water catchment protection measures. In participatory sense, the WRUAs were also to be watch-dogs and avenues for citizens to express their concerns in terms of violations of water use priority advising the CAACs on the available water that may be allocated or reallocated to other water users. However, WRMA, who actually admitted the water permits, had shifted their office from Wundanyi to Mombasa sub-region and was no longer presently monitoring water uses. As then the WRUAs were practically not ‘operational’, the tasks of regulating water use priorities especially during dry seasons when water became scarce, was carried out in practice by the local actors. For instance, during dry seasons when the flow in the river sourced for the supply in the lowlands reduced, one of the engineers of TAVEVO who had worked in the area for over 10 years, would head to the hills to monitor any irrigators that were diverting the water to their fields (forth coming). These sort of measures were also carried out by some chiefs, the local level public administrators, who still had some (although reduced) authority in their locations.

6.2.3 Water projects, corporate management and social tariffs

The major implication of the reform for the communal water projects was that the law required the existing water projects to operate under the license and supervision of WSB

and adhere to business principles of operation and management, just like the major water companies in urban centers. Indeed, the time and origin of the water projects in terms of their funding pattern, turned out to be a significant factor affecting the adoption or infusion of the reform principles of operation. Also their relationship with the Ministry and the CWSB differed in this regard.

As was discussed earlier in the historical outline of water control in the Taita Hills, there are many kinds of community water supplies in the area. In terms of the reform translation, especially with regard to commercializing the operations, the community projects started by self-help means still had their own systems for tariffs and were operating with their own rules. It was only the newly established or former government projects that seemed to have a clearer attempt for recovering costs by user fees and by “professional management”, and thus operate more like a business. Indeed as just discussed, these projects were assisted and strongly encouraged by the local CWSB area coordinators in terms of project operations, tariffs and design.

Indeed, all community water supplies did charge some kind of fee (see Table 8.). However, the fees were justified in different manners and took different forms. Some projects especially in the uplands in Wundanyi area, with simple gravity fed system and an intake in the spring had only an initial registration fee and a monthly contribution of 50 KES, for any repairs or maintenance needed. Indeed, these projects did not meter their consumers, and some did not even aim for recovering the costs of water, as water was free, and only the repairs needed some funds. This fee could also be contributed by labor. Some of these, had tapped a spring and sealed with concrete leaving water to flow for free. Many of these groups had started with various donor funds, also from the local government funds and the Constituency Development Fund (CDF). These groups had plans of starting income generation activities like water bottling on their own, but they did not have plans of metering in the future. Generally these groups would also take debt and would not disconnect households very easily.

Especially in Mwatate side there were also ‘hybridized’ versions of the corporate management in some of the projects. Particularly one former government project, that had been handed over to the community in the 1990’s was running mostly according to the

principles of the reform. In fact, this project was also registered and approved with the CWSB. Still this project was not able to meter its customers due to water scarcity (forthcoming), and thus charged a flat rate from consumers. However, the project had a special tariff for the poorer strata of the community who only had to pay 15 % of the tariff the other users paid (see Table 4. Dembwa-Wusi project). They also let the water from the spring flow to the surrounding community for free, in order to avoid vandalism, a common issue in the area (forth-coming):

“...We were constructing an intake, that intake, (where) the spring comes from, is in between somebody's shamba (field). So that man is saying, you cannot take this water from this place and leave me without it. So we had to set aside a pipe whereby the water will be running for free for the people around there to take water from that place, so that they could not interfere with which we have taken to other people down there. So that problem is there...The neighbors of the intake really complained that how can water come from our place, and benefit people outside this place. And yet we within don't have that. So that challenge is there. (Interview with Dembwa-Wusi water project 1.3.2013)”

It seemed therefore that the idea of reciprocity in terms of sharing a local resource was still a central conception of fair distribution of a flowing resource like water, even though this meant losing revenue from supplying the water. Underlying this idea was that water is a free resource for everyone to use, and if someone controls it, they should also let other people benefit from it. As becomes clear from the quotation, this still prevailing moral code of sharing water had been recognized by the committee of the community water project, solving the issue by giving water for free to the surrounding community in the closest vicinity. The project still maintained a small office and had employed an accountant from the local community. Indeed, this project was praised by the CWSB, despite their looser principles of operation.

Table 8. The operational details and tariffs of the major community water projects given by their chairmen in Wundanyi and Mwatate Catchments

Name of provider	Operational/ Rationing	Connection fee (KES)	Tariff (KES)*	Connection type
Dembwa – Wusi Water Project	rationing dry spells	720 + pipes ¹⁵ ~ 8000KES	190/ month 30/ month	Individual/ Communal/ Institution
Josa – Modambogho Water Project	rationing (4d/week) ¹⁶		40-60 /month ¹⁷ 20 /month	Individual / Communal/ Institution
Mtango Water – Project	not fully operational		150/month 1000–2000/month	Individual/ Institution
Mwasineyi Water Project	Run during dry season	7500 + pipes ~ 10 000 – 30 000 ¹⁸	5/20L	Communal/ Private (4000 – 5000)
Iyale – Msidunyi Water Project	Rationing		100/month 50/month	(individual) communal
Toro Water Project	Not yet operational		plan is 50/month	communal (individual)
Kidakiwi water Project	Rationing	200 registration	50/month	communal individual

* Tariffs for individual connections are presented first, second is communal or for an institution (school, church).

There seemed to be however, somewhat new approaches to manage the projects, translated more directly from the reform principles of everybody-pays-fairness and business. The joint project to be kicked off in the near future, adhered to that everyone would be paying according to meter readings (communal water points would have tariffs calculated according to the consumption). The project would close up the well, used by the people around the forest, as a borehole was going to be built to pump water for the system, and so for the surrounding community there would be no exception for paying. At the time of the interview the committee did not have in place any considerations for the poorer strata in the society. It seemed thus that this project, despite being designed with the assistance of the CWSB area coordinators, was not (yet) adequately socially sustainable.

Another recently formed borehole-based project in the lower lands had adopted the ‘targeted’ form of social protection. When I asked about the considerations of inability to

¹⁵ During our household interviews, a lady told us that she paid all together 8000 KES (5000KES for connection 15x200KES for PVC pipes).

¹⁶ Contradicts to story told by World Vision, who say that people in Landi get water only once per week

¹⁷ A lady connected to the project, said they have a meter and they pay 60KES/month. She also said, the price was going to rise to 140KES/month.

¹⁸ The total cost for connecting to a pumping system, such as a borehole supply is very expensive. A 2 – 2½ inch GI pipe of 20 ft costs 17 000 shillings. The plastic pipes (class D, ¾ inch) are 300 shillings per 20 ft. The meter costs 6000 shillings, and the connection 1500 shillings (total 7500 KES). If plastic pipes are used, this results in 10 000 - 15 000 KES depending on how distance from source. The project chairman told me that sometimes some people are subsidized by a donor to get connected, e.g. the CDF or more recently the county government.

pay or considering poorer people, the chairman of this project replied to me that he would occasionally and case-by-case make exceptions on payments, but this was by no means an established or thought-through-practice. According to the chairman, people were able to pay the 5 KES / 20 L, as they would even pay 30 KES for the same amount of water to be brought to them during the dry spell by motorbikes. He said that reducing the distance to the water source was more important for the people, and that they were willing to pay the amount. The project therefore, clearly held the idea that charging same tariffs for everyone was fair and that people were not so poor to afford it.

The newly designed projects or the ones still in-progress, seemed to also favor individual connections, as was encouraged in the reform documents. The project chairmen of these projects said that the individual connection ensured financial flows and made the consumers more 'responsible' in paying their bills, and keeping their connection. Sharing the connection with a neighbor was not prohibited in these projects but it was not encouraged either. The favoring of individual connections in community water projects was contradicted by the local water officer who said that they designed the projects to be primarily communal water points and that individual connections would be available for those that could pay for it. However, the project chairmen clearly seemed to think that communal taps or kiosks were difficult and they trusted that the fees they charged were not a hindrance for people to pay for individual connections.

6.2.4 Demand management and water scarcity

The style of reasoning of the reform relies on the existence of a sovereign consumer, that is, a consumer with calculative rationality and an individual choice of consumption. In this regard, the major principles of the reform for water services, demand management and cost-recovery, are justified from the consumer point of view in terms of paying for water consumed by metering and introducing 'the choice' of how much they are ready to pay; and from the supplier's point of view in terms of recovering costs of 'producing' the water (operation and maintenance). The tariffs for cost recovery in the reform have been created to respond to the true cost of water, however, also adjusted to people's ability to pay – that is the tariff should not consume too much of the people's income. The reform documents argue that a social tariff will ensure that even the poor can access safe water. The previous section presented the operation principles of the water supplies in the area, including the tariffs they applied. The establishment of water services running on business principles

also assumes that people are willing to pay for water. This section will identify the key tensions in the creation of a sovereign consumer in terms of supply scarcity and the responses and styles of reasoning of a small sample of consumers, the demand side.

A major challenge for both the main water company, and the community water projects was to meet the local demand for water. This was mainly due to the variability of water in the sources, especially during dry seasons, but also due to the technical design of the infrastructure. The problem during the dry seasons was that the water flow in the sources (mostly springs, but also rivers) went down due to higher evaporation, but partly also because of competing uses, mainly irrigation (forthcoming). During rainy seasons, the technical aspects of the design also came to hinder the supply of water. Most of the projects with surface water sources had a gravity-based design for the water intake, and often without major filtering or protection of the source. The source thus became easily silted with the runoff during heavy rains, resulting in silted water running in the pipes and the formation of blockages that sometimes resulted in bursting pipes. Another issue was the leaking pipes and valves in general, which resulted in poorer flow of water within the network.

These challenges with the variable water flow and aging infrastructure resulted in rationing of the water supply by all the water providers in the area. Rationing meant that the water was supplied in intervals to the various locations served by the network, i.e. a given area would receive water for 4 days a week, while another would receive the remaining days. This practice was used to at least serve everybody some water – indeed a way to maintain fairness in the distribution. What this meant however, in terms of the reform principles, was that in practice, none of the water providers in the area had consumers pay according to consumption, that is, by a meter reading. While meters had been installed for some of the projects, the consumers paid flat rates, as there would not be water all the time to be consumed anyway.

In this regard, the concept of demand management and creating consumer choice in the form of metering seemed quite irrelevant in a context where the problem was more of maintaining adequate supply. In fact, especially in the lower lands many people would go for rain water harvesting during rainy seasons, and save money (forthcoming). However,

the argument behind demand management (paying gives incentives for conservation, etc.) was used more in the justification for collecting fees. It was also mentioned by several projects, that paying for water would make people more ‘responsible’ and willing to conserve the water. It seemed that at least in the rhetorical sense they had adopted the idea of demand management.

However, especially in the case of the lower zones, where drought spells stopped water from flowing to the ends of the system, the issues with flat rates was also problematic. In Mwatate, the elders shared that they were charged money for water that never came, and that they could not refuse to pay because they would be disconnected. They had to then pay double price, because they had to buy water from neighbors who did receive water and who charged some money to cover their own costs of the bill. In fact the situation in Mwatate was escalating to the extent of people receiving water from the county council pipeline starting to sell the water for profit to the surrounding community. While this was clearly an illegal activity, the local engineers could not do anything as, at least according to them, the infrastructural design would not allow the water to flow to the end, even if they stopped the people from collecting the water midway into large tanks. Whether this explanation was true or not, was not possible to verify. Another explanation might be that the county council (not yet under the TAVEVO company) benefited from the billing of this water, and therefore, did not want it to stop.

The CWSB district area coordinator in Wundanyi explained the challenges this brought for the operation and maintenance of the main water service provider, the company, especially in terms of cost recovery. In his opinion, if only more sources were made available for the company to serve, it would become viable:

“W: No it (the water company) is doing (its best). But let me point out this. The most challenge to these companies is the water demand. You see now, what is being produced cannot match the demand. The market is there for water but they are getting little. And you see it's not within the mandate of TAVEVO to ensure they're getting enough water... It is the mandate of the Coast Water Services Board, which is the government now, to ensure TAVEVO has enough water. But now the question is, where are these water sources? They need to be developed. I believe if you can develop enough water sources and then hand over them to TAVEVO, they can manage

it. They can have a good revenue and then they can go off with their business. But the challenge is the water sources.” (Interview with CWSB District Area Coordinator, Wundanyi, 4.2.2013)

His comment represents the key tension with the style of reasoning of the reform, where the optimal water distribution is resulting from a functioning water market following the fluctuations of supply and demand. Indeed, the reform rationality is that it is adequate to rationalize the consumer side by a payment for the used water, which would result in an optimal and efficient water consumption rate. However, according to the officer, the problem in establishing an economically viable company, is not the management of the operations, or even the lack of demand, but the lack of supply (see Table 5. section 5.3.2). He further pointed out that indeed, the role of the government (in the form of the parastatal CWSB) is to ensure that this water is available for the companies. In this logic he followed the reform style of reasoning, in that the role of the state is to enable a viable business environment, that is, to provide resources for the business to run.

6.2.5 Poverty and creating the sovereign consumer

As just described previously, the seasonal drought and resulting rationing of water services, especially in the lower zones, hindered the establishment of demand management, whereby the tariffs would be based on the amount consumed. Notwithstanding the problem of metering and lack of adequate supply, the question of poverty as it is experienced by the residents in terms of scarce and seasonal income described in the description of the area, is vital in understanding the establishment of the consumer. In this regard, the establishment of demand was not so straight forward either.

From the side of the water officers, who had well internalized the values of the reform, the argument was given that the question of poverty was not the reason why people did not pay for water. They argued that because people were able to pay even 50 KES per 20 L during dry spells in the lower zones (when transport costs to bring water to marginal areas were high) they could not be so poor, and therefore the main reason why people didn't pay for the water projects, was their *unwillingness* to pay, and their '*ignorance*' and '*wrong priorities*'. Indeed, if looking at purely the tariffs that the projects were charging, one could come to the conclusions the officers made. However, the issue was not as simple as it seems. First, the fact that people did not receive water constantly, as explained in the

previous section, made the investment for contributing to a project risky. This can only be understood when looking at the context from the perspective of a household. Therefore it is now useful to turn to the small sample of household interviews carried out the author and Hohenthal in 2014 and by Kivivuori in 2013, in order to get a glimpse of the peoples' context and their 'ability to pay'.

First of all, there is an important distinction to be made between 1) the ability to pay for water in the form of buying water as a singular event (KES / 20 L), 2) paying to be connected to piped water and 3) paying for the water rate or maintenance costs of piped connection *regularly*. The ability to pay in all cases is linked directly to the cash income available in the household at different times of year. Though difficult to assess, according to our findings from the micro-sample of the household interviews the average monthly income of a household in the area of Wundanyi is around 11 100 Ksh (n=8) and in Mwatate 5944 Ksh (n=9). However, especially in the lower lands in Mwatate, the income was highly season dependent and insecure, as many households rely on diverse sources of income, and importantly cash, mainly from local casual labour, remittances or from family members in cities (see also Fleuret 1988). Moreover, not everyone was able to say or assess their monthly income (Mwatate area 4 out of 13). Hence it is not straightforward to calculate people's ability to pay. In any case, for the poorest and most income insecure people in the area, connecting to a water supply is a big investment (8000 – 17 000 KES depending on the distance from the intake), especially since for those living far from the sources, and the fact that water had to be rationed during dry spells reduced the peoples' willingness to take this risk.

However, in some cases, we found that the ability (adequate income) did not necessarily result in the willingness to pay for water or to join a local water project. Though our data was not adequate to make any generalized conclusions, one case illustrated well the reality and priorities of people in the area. The particular household in the lowlands of Mwatate had an average monthly income of around 7000 KES, hence above the general average of the area. Nevertheless, the family did not buy water from the kiosks and was not connected to the local water project which was less than a kilometer away. This, the woman of the house explained, was because they would get water from the nearby Mwatate River (about 50 m from their field) and harvest rainwater with some buckets during rainy season.

Although the river dried during the dry season, they would dig under the sand to get underground water. Interestingly, in the interview the chairman of the nearest water project was present, and he tried to inquire if the family would join the project. The woman hesitated, as her daughter was in a government high school with school fees to be paid for. Therefore the choice for the family seemed to be whether to invest in education or piped water. Because the river was so near to them, they rather used it for free than paid for the piped water.

Therefore, a different kind of rationality was used, and indeed one could say a very calculative one. Saving in everything else to get children to school was a clear priority as that was “investing” in the future. Water was an immediate need, and if available another way, people would go for it. In the highlands people fetched mostly from springs, and in the lowlands they would harness rain water with buckets and only during dry season resort to buying water. In some sense then, it seemed that people who had no problems to pay for water would have piped connections, while in the other end, people *without choice* would buy water after all the other ways to get water were out of question.

Table 9. Lowland households and their views about access to water

Interview household	Good price for water (KES) / Should it be free?	Are people able to pay for water (in their area)?	Is there equal access to water?
01 Mwatate - middle	Hard to say / Yes	Doesn't know.	Everyone has same challenge during dry season
02 Mwatate - middle	2 / 20L / Yes	Yes, but difficulties in dry season	Some go far, most get water from within the area
03 Mwatate – middle closer to Sisal estate	Doesn't say / Yes	Very few people in the village.	Some have taps, but have no water.
10 Mwatate – middle town house	50 – 100 / month	Some can't afford clean water and go to well	
08 Mwatate – East	2/20L compared to 5/20L	Yes, they're able to pay 2/20L and fetch from river	During drought not equal
09 Mwatate – East	2/20L	-	People suffer together, some with big water storage tanks are better off
07 Mwatate – East (Mwandungunyi)	Even if 200/month would still use free water, so she can send her children to school	Doesn't know	People near river get free water; people further away have to connect and pay
11 Mwatate - west	2/20L (5 too high)	Yes, but complain about 5 KES	In an area a little further, people have difficulties to access water.
04 Mwachabo	3 / 20 L is ok.	People are able to pay. But poor fetch from the dam.	-
05 Mwachabo	-	-	Everyone has same challenges.
06 Mwachabo	Doesn't know /Should not be free because need for maintenance. Have always paid	-	During drought, elderly and poor can't afford water, so she shares.
16 Kishamba	-	-	Yes
17 Kishamba	-	People pay 50 KES/month	-

However, many also understood that a project needed funds for maintenance, and therefore paying for it in the form of water charge was acceptable and logical to them. Generally, when asked what a good price for water would be, people in the lower zone said (n=13) that 2 KES/20L would be ok (see Table 9). However, 5 KES/ 20 L was already considered by many too expensive. Even so, for a household of 5-6 people, consuming altogether around a 100L per day (this does not include the cows), the monthly expenditure for a 5 / 20 L rate would be 750 KES/month and for 2 KES / 20 L it would be around 300 KES/month, that is, if somebody is able to fetch the water themselves and not use transport. With an average income of 5000-6000 KES, (however with poorer people around 3000 KES or less) – 2 KES/20L tariff would mean a percentage of 5 - 6 % of the income, and for a family with only 3000 KES monthly income, it would be already 10 % of the monthly income. Therefore it seems that TAVEVO water kiosk tariffs, are still within a reasonable range of expenditure for water. However, still, for the more marginalized people who can't access the government subsidized kiosks, the expenditure is much higher. Table 10. gives a rough estimate of a small sample of household income and the percentage of it spend on water. The figures are combined from the interviews done in February 2014 and a study made by Kivivuori (2013).

Table 10. Average expenditure on water and its percentage of average monthly income in the study area. (Source: Hohenthal et al 2014)

	Cost/month (Ksh)						% of monthly income					
	Wet season			Dry season			Wet season			Dry season		
	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Wundanyi	0	221	2000	0	222	2000	0.0	2.0	18.0	0.0	2.0	18.0
Mwatate	0	287	2500	0	622	6000	0.0	5.4	40.0	0.0	8.6	40.0
- Highland	0	119	1200	0	127	1200	0.0	2.0	20.0	0.0	2.0	20.0
- Lowland	0	372	2500	0	860	6000	0.0	7.5	40.0	0.0	12.9	40.0

Wundanyi wet season cost: n=44; Wundanyi dry season cost: n=39; Wundanyi wet season % of monthly income: n=44; Wundanyi dry season % of monthly income: n=39. Mwatate wet season cost: all n=45, upland n=15, lowland n=30; Mwatate dry season cost: all n=43, upland n=14, lowland n=29; Mwatate wet season % of monthly income: all n=38, upland n=14, lowland n=24; Mwatate dry season % of monthly income: all n=36, upland n=14, lowland n=22. The average monthly income in Wundanyi is 11 100 Ksh (n=8) and in Mwatate 5944 Ksh (n=9). These may be overestimations, since many poor farmers were not able to estimate their income or it varied a lot within a year. Percentages of monthly income are calculated using these figures for 2013 interviews by Kivivuori, when income was not assessed.

What becomes clear from this sample, is that overall the people in the lowlands have to pay the most for the water in absolute terms and in proportion of their income, especially during dry seasons. This indicates that indeed the poorest people actually pay the most for water, and the people living in the upland areas of the catchment are substantially better off in terms of accessing water.

6.3 Society and tensions of translation - intended and unintended effects

The previous sections have looked into the key reform principles and their translation into practice in the waterscape of the Taita Hills. This section will further investigate the implications of these discourses and practices in terms of their intended and unintended effects with a broader historical perspective. More specifically, these effects will be analyzed from the perspective and framework of distributional justice and (political agency) of especially the more marginal groups.

6.3.1 Socially responsible commercialization and market-programming of redistribution – intended and unintended effects

As was discussed before, the areas in most need of water services are the ones in the plains, and more so those further away from the urban centers adjacent to the hills. Therefore in terms of need, the priority of developing water services would be these areas.

Indeed, some improvements had been made due to the reform. The human right to water discourse in the reform documents did yield some positive impacts visible in the local level water distribution. A good example of this was the increased number of water kiosks in Mwatate area built by the public water company with the help of the WSTF, which served a large group of people with fairly clean water and cheaper, subsidized water prices, thus improving the access in financial and distance terms. This was confirmed with many informants, who were satisfied with the 2 shilling price per 20 L. Moreover, the kiosks seemed to serve the people who actually needed the water, although there were still a lot of unserved people especially during dry seasons. People were thus ready to become consumers of better water, that is there did exist willing customers, but on the other hand the practical realities and the financial challenges seemed to hinder the potential for becoming one as discussed before.

In terms of socially responsible commercialization, the reform was able to create positive, intended improvements of some of the water supplies. Some of the well-managed water projects had partly accepted the corporate management guidelines given by the Board's area coordinators, and seemed to be, for the most part, relatively successful, taking into consideration the difficult circumstances of running a financially viable project in the area in the first place. The merging of some projects seemed also to enable an extension of services to poorer areas. However, the most successful projects had taken extra measures to

ensure project was accepted by the community, which meant that in fact not everyone had to pay the same amount for the water. Indeed, as also intended by the reform by the establishment of block-tariffs, a progressive cost recovery practice seemed to be the most sustainable one. Despite, the relative success of this principle, however, the projects still had to deal with the same challenges as the rest of the projects in terms of scarce water resources, and peoples' low buying power.

While improvements in the urban center had been enabled by the reform, the locally based water officer shared, that the population in the plains were still disadvantaged in terms of accessing water. A major reason for this was that the population was largely scattered and therefore it was difficult to make projects there cost-effective. The requirement of cost-effectiveness and acquiring economies of scale in developing water supplies was however, not only a principle of the office, but was a criteria for donor funding. The following quotation illustrates this point in terms of investment priority:

WOM: You know fairness, is.... I can't say, it comes in because it depends on now where you are and whether you have the source near. Because where they have water sources near, it's cheaper to do a water project, than where there is almost nothing, the drier lowlands. It's difficult to get enough water, the groundwater maybe it's not available. If you come up and see scheme is expensive. So it becomes an issue of per capita cost, how much to invest in this project to serve this number of people. At the same time up here, on the highlands, there are more people than in the lowlands. And it's cheaper per capita to fund the project up there, than down here where people are sparsely populated and the project is so expensive. So that also comes into play... Where do you go in first? Even if it's a partner who is coming in, the donors themselves, where they're getting the funds, they'll say the per capita cost should be low. We don't have to incur so much when you are serving few people. So the people down there now become a bit disadvantaged. (Interview with CWSB District Area Coordinator, Mwatate, 19.2.2013)

Indeed, while the genuine aim of the water officer was to supply water to everyone, especially those hardest hit by drought, the issue of financial capital came into play. Herein lies a tension between the economic and social logic of improving access to water; the the neediest people are often those that economically are not 'worth' serving. In this sense, the shift in the discourse of water users, from subjects of need to sovereign consumers, seemed

to influence the practice of seeing consumers with effective demand of water, either in the form of large amount of people with low-buying power or a small amount of people with large buying power; as priority ‘customers’ instead of the marginalized people with actual need. For them survival was however, guaranteed by as the CWSB CEO said, water pans, which could be used by animals and for irrigation. Indeed, the households in the lower lands had been using the water from the Manoa dam, the same that was used by the livestock. While they used some home-made treatment methods (turbidity clarifying stones, and boiling), and their immune systems had probably become to some extent used to the water, still it seemed unfair. Indeed, these people were waiting for funds to be able to start a project.

Also the response to drought was clearly an issue, further exasperated by the law that required the Ministry, as discussed before, to confirm the drought and allocate assistance to the needy locations. This requirement was attached to the budget that disabled the use of funds in case of a needy situation. Therefore the people that were closest to the area and ‘saw’ the situation were armless to act upon it. The following quotation also shows the rigidity of the practices of financial management and maintaining accountability.

“We have projects, we have to run a project, the water was planned prior to the start of the financial year, these are the projects we are supposed to do in accordance with this and this component. And I cannot redirect the funding to other areas. Unless now it's an emergency situation, where the government now, it has been determined with the reports we give feedback that there is a drought and then they make a provision for emergency drought, and that's when now we can go in. But normally like now, when that has not been done, those facilities are still lying...(refers to assisting communities with installations).” (Interview with CWSB District Area Coordinator, Mwatate, 19.2.2013)

Indeed, the fact that the decisions of funding the extension of supply did not come from the lowest local level was also challenging for the water company. This was clear from the report (TAVEVO 2013): *“Asset development is the responsibility of CWSB and this constraints water companies in situations where, for example the companies need increased water supply within a given time frame.”* Indeed this was also a clear issue mentioned in the interview with the main engineer of the company who said, that they rely on everything from CWSB (Interview with TAVEVO 24.4.2015).

Another unintended effect especially with regard to reaching the neediest people was the poor availability and affordability of water services to the public institutions like hospitals and schools especially in the lower zones. While, the report and the interview with TAVEVO indicated that the company had been able to carry out the planned improvements in the Mwatate water supply, such as extending a new line to the Mwatate Health Center and building a storage tank (TAVEVO 2013 p. 44), still during dry spells the supply ran dry. The public health officer's assistant told that they had to buy water from individual vendors just like the other people. Sometimes TAVEVO had been able to assist with water boozers, but at the time of the interview, this had not been done, and the hospital staff had been told that there is no water in the pipelines because the water source is dry. In this regard, the consumer principle, of everybody being responsible for their own needs, was clearly fighting with the concept of prioritizing the needs of most marginalized. As was expressed by several officers and administrators in the area, during drought everybody had to fight for the water themselves, the public institutions included.

However, clearly there were also institutional constraints in replying to emergencies like these. The officer shared that coordination is a challenge, due to several providers in the area, and the fact that some institutions think of water as a philanthropic activity and don't realize that in order to reach the neediest areas, proper planning is required.

"I'm now in the process of trying to see how we can bring them (other departments) together so that we can coordinate, so that we can at least during emergencies we can know who is where and who is with water and now we can tackle the issue. And then during normal times we do project having in mind the areas of concern, during emergencies like drought (?) so that we put up project which will mitigate against drought. Because not every time we have a short spell, like now we are having, people are running up and down. We should have put boreholes, have them strategically in areas which are most affected so that we can contain at least, we try to bring down the issue of emergency, using the development funding. So we target our funds as per the areas where emergencies, where drought is most severe. So that during droughts now we are at least stable. But we have just now trying to come out to see and put up, bring these guys together, that we can at least be having that coordination. The same with also outside players. You find that like KWS, they might have the resources sometimes, they want to put up the borehole, but they just put it anywhere. And you

just find, I'm just here, and just find that they've stuck the borehole somewhere.
(Interview with CWSB District Area Coordinator, Mwatate, 19.2.2013)”

In this regard the unintended effect of reducing local government planning to mere coordination and decisions over distribution of funds to a regional level, was a fragmentation of the efforts to meet the needs of the most marginalized and redistribute water to areas where it lacked.

6.3.2 Privatized water control – a challenge to developing water supplies, the unintended effect of private property

Indeed the control of water seemed to be contested and made difficult by the very agency of water itself – the seasonal variability of its flow and its absence. Therefore the question of equal distribution and access to water is fundamentally also a question of water resources made available for the provision of water. This section discusses the unintended consequences of the reform principles in terms of water resources that relate to distributional justice and improving the access to water in the needy areas. Why was it still available to some more than others, how did the law on water allocation translate in the local setting and what kind of control did the law encourage?

According to the legal framework of the reform, the ownership of the water resource itself is with the state. As the analysis of the reform documents showed, the state is the guardian of public interest, and the use priority of water for basic needs. However, all the interviewed actors stated that a common problem, and also a reason why water sources ran dry, especially in the lowlands, was that the people upstream with land next to the rivers, streams and springs would often use the water as if it was their property and use it for irrigation. The water officers argued that the farmers had not understood that water belongs to everybody (the state) because they use all the water uphill for irrigation. While this was prohibited by law, the question was not only the ‘ignorance’ of people but also the historical mistakes done during the land reform, i.e. the demarcation of land titles up to river banks and springs. In this sense, the translation of the water law was difficult without changes in the other laws as well.

The conflicts of use priority show that leaving decisions of priorities solely on peoples’ own sense of justice, may not work as planned, without proper enforcement and regard to structural, economic questions. Some elders from both upper and lower zones, made

claims that generally people in the upper areas do not think about the people downstream when they're using the water upstream even though their own "kinsmen" might reside in the lower zone. However, the elders of the lower zone also acknowledged the more structural reasons of poverty that drove upstream people to forget the needs of the people downstream:

"...and they know it is their brothers who are down here, so the problem has been there because, do I cultivate my vegetables so my child can get education... the issues on the lower sides, let them sort out themselves". (Interview with village elders Mwatate sub-location, 17.5.2013)

Indeed, this issue was also tied to the inadequate regulation of use priority and sometimes legitimized by law. As was discussed before, the WRUAs, the community based groups to ensure equity in water distribution, were only beginning to be operational, and the permits were determined by the WRMA authority. However, as the information about the water use conflicts in Taita Hills during dry seasons was not reaching them and importantly no official drought that would be a threat to fulfilling the basic minimum need, had been declared, in practice the permits were allocated according to demand. In fact a local chief in the lower lands shared during our final workshop that he had tried to stop a farmer upstream from diverting water for irrigation so that water would reach down to the lower lands for domestic needs, and that because this farmer had a permit issued by WRMA, the chief was sent to court for trying to oppose his right. He was further questioning the role of the WRUA, who defended themselves by responding:

"There is a difference between WRUA and WRMA. Right now the person licensing (permitting) water use is WRMA. The WRUAs have not yet taken the full control of the water resources, because we've not been empowered, especially with monitoring, it has taken a lot of time and money. When we travel to Mombasa (*WRMA sub-regional office is there*) we use our own money, the treasurer has travelled today. We've been having problems with WRMA concerning financial issues [...] there is so much bureaucracy, so it's difficult." (Final Workshop notes, 5.2.2014)

Indeed, the user groups were in practice dis-empowered rather than empowered by all the requirements for their operations that required financial resources, which they were meant to compete for in the donor market after their initial start-up. Indeed the WRUA group told me that they could not write proposals that would appeal to the donors (interview with a

WRUA, 12.6.2013). While the secretary of this WRUA, was a former councillor that had been able to defend a spring in his area to remain under community control instead of being taken up by the Sisal estate (ibid.), the watch-dog role that the WRUA could have had, was taking long to be realized.

In terms of groundwater the situation of water control and use priorities was even more challenging. As groundwater is also lawfully state owned, it became clear that in practice, the land owner has control over the resource and can decide whether to allow a communal water project to be established on the land or not. These challenges of diminishing public land were elaborated by the water officer in Mwatate, regarding new infrastructure development. Especially in the Taita lower lands in the urban center of Mwatate, it was difficult to get land for laying pipelines. This was because the town had grown from a market center without planning, and the whole town area was mostly private land registered with the lands department. Pipes did not either fit in the town, or people did not always welcome them on their *shambas* (fields). It was therefore challenging to plan public infrastructure that would benefit all. The issue of finding public land for infrastructure development was also problematic in the lowlands further away from the town center, where the only options for water sources was groundwater often not available everywhere at drillable depth, or the establishment of dams or water pans for rainwater collection. However, the vast tracts of land of the plains were also owned either by private estates or private or group ranches. As the CWSB has scarce, mostly donor-based resources to invest in rural water supplies in these areas, compensation for land was rarely possible, thus rendering the control of the ground water with the private land owners.

Challenges brought by the requirement of the ownership of land influenced also the establishment of community water projects. This was especially evident with a particular community water project in the lowlands, as shared by the water officer and the project members themselves. After some issues in the management committee, a committee member who was also the land owner of the project decided to change their mind and no longer wanted the project to be community owned, but decided to start a private business of selling water. As the land owner must always be compensated, and if the community members cannot come to an agreement or access adequate funds, it became problematic to establish publicly available water infrastructure. While the law provided in principle, for

the state to acquire land for public uses of water like for constructing large water infrastructure networks or a dam, the government would only step in to assist projects if it has a strategic interest in them. The Mwatate water officer told that this was not a simple issue as the question of which department was to compensate made it difficult to realize it in practice. Therefore while the state remained with the ultimate authority to acquire land and establish a state scheme for public interest, it seemed not to apply for smaller rurally based schemes.

What became clear in the area was that with private land ownership the priority criteria in terms of using the water also became less affirmative. The large estates were also actors with capital to invest in boreholes, and in fact in the lowland plains medium-scale irrigated farming was practiced by one land owner throughout the year with the water extracted from a private borehole. Some of these owners would show their 'benevolence' and sell this water to the community. The use priority dilemma was even greater regarding the question of the industrial scale user of ground water, the sisal estate occupying over 30 000 ha of former community land and utilizing over 900 m³ of groundwater daily drawn from its 11 boreholes of nearly 100 m deep for the industrial process of washing the sisal fiber (interview with Teita Sisal Estate, 5.2.2013). In the light of the general shortage of water in the area, it seems ironic that a factory consumes double the amount of water (in comparison to the local water supplier TAVEVO abstracts approximately only 500 m³ for the piped water from the river in the same area), while a shortage of water prevails in Mwatate during dry seasons especially.

However, this use priority conflict could not be regulated as was enabled by the law, as there was no publicly available monitored data to determine how the heavy use of the aquifer would influence the overall water table and the availability of water to the other use needs. However, a sign of threatening salinization of the groundwater was already visible as during dry spells the Sisal estate bought its water for their staff from the boreholes further upstream, as their own were too saline, and not very fit for drinking (interview with water vendor in Mwatate, 17.2.2014). If information about water levels or a severe drought would have been adequately monitored by the authorities, the sisal estate could have been mandated to give water to people by law. Indeed, before the new water law, and perhaps because of a benevolent owner, during a drought in 1996 people had been allowed to fetch

water for free from the Sisal estate (interview with an old lady living next to Sisal estate, February 2014). Whatever the case, the seasonal re-occurring drought in Mwatate was not deemed as severe enough.

6.3.3 Politics of water services and redistribution

The institutional framework of the reform created tension in meeting demand on one hand and maintaining accountability and transparency and public interest on the other hand. In terms of keeping water projects free from political patronage, indeed one of the very core justifications of the reform, this tension was particularly clear.

As discussed earlier, in the overall context of the public sector reforms in Kenya, of which the water service delivery was a part of, the public civil servants were to be reduced and moved eventually toward private sector consultancies. In the transition phase however, the civil servants were now answering to demand, instead of delivering direct services or imposing assistance. However, they still remained with the important supervisory roles and acted as ‘micro-regulators’, as was discussed before. As mandated by law, the WSB were supposed to register water providers, which would bring them under the operational principles established by the reform, including the commercial principles of cost recovery and the corporate management accountability. While in the rural areas, it was recognized that this was not possible to the extent of the urban providers, the same principles still remained. The tariff guidelines and the metering were encouraged by the officers, which would enable extending services to other areas and maintaining water as public good.

However, in tension with these regulatory roles catered for by the law, was that the demand based services coupled with the reduced resources (and the resulting “allowances” meant to cater transport costs of officers) did not in practice give much authority to change uneven dynamics in the community. Moreover, the introduction of choice and competition to financing the community driven groups had some unintended effects in terms of keeping the old forms of gaining access to resources through senior members alive rendering water to becoming a club good.

This is illustrated by one particular water project started by the political fund Constituency Development Fund (CDF), which is a redistributive instrument from parliamentary funds directly to constituencies. This funding instrument allowed the communities to access

funding for their own projects, which usually was easier through the MP of the area. This particular project was started as a counter effort by the community to get water closer to their homes cheaper than the then Ministry operated water supply. The CDF had hired a consultant to design the project who had, however, made over ambitious designs with regard to the yield of the source; also because the MP had promised water to many people in return for votes, and thus the project had been delayed for several years. The following quotation shows the other justifications for the political route:

“Ch: Consultant yes. And he was paid. The guys (officers at the Ministry of Water) were saying, you should've given this to us, maybe it will be free, or you pay less. They (officers) would not have it. You know the reason, we see our departments as being inefficient, that's the way we see it. They are useless, they can't give us water. Whenever you go there, there is no pipe, there is no fuel to come to your place. All manner of complains! So the politicians decided to say, we will give these people water because we have the money, there is nothing like fuel (allowance), so we were given the money and now we are doing the project. When it is over, somebody somewhere may say, all water projects should be handed over to the government. That is it, we shall start paying the 500 instead of the 100 (laughs).” (Interview with a project chairman, 17.6.2013)

The option for the community provided by the politicians had been therefore appealing as it allowed them to take things into their own hands. Importantly then, from the community point of view, this also meant control over how they would arrange the water distribution, and importantly how much they would pay. However, disappointingly, politicians remained disinterested in actually developing water sources, as to them the purpose was to continue their flow of votes. In the end the chairman mistrusted both politicians and public officers, as to him they were one and the same government.

However, it was clear that the local culture of patronage was a serious way to make ends meet and improve the living standards for many. In this regard, those who were able to ‘negotiate’ and gain resources through influential relations, were able to start projects gaining benefits for themselves or a smaller community. This was well described by one chairman of a WRUA:

“Wch: And the brave people do not want to sit in the committees of several projects. Like there was a guy who was telling me, in their place in central province, you get a

permanent secretary sitting in the local water project committee [...] So when he comes home on leave, he attends the meetings. And perhaps that is the day they're going to see the DC. When this DC sees this gentleman, ah, he shakes, 'oh what can I do for you?' 'Oh we wanted some funds from the...'. Then that project goes through so fast. Because of this one man... All the talk here, and then he goes to Nairobi to push. If he is a pierce for agriculture, and they are talking about water, and he goes to his counterpart, "my friend I have my project at home, a water project, can you assist?" So they get the funds very fast. But in Taita, our well-landed guys, have no time for these committees. [...] So you see a whole committee, but they are limited in their education, in their skills, so they try. When they feel they can't go further, they just sit down." (Interview with WRUA chairman, 22.5.2013)

While the chairman said, that in Taita these "well-landed" guys had no time for community groups, this in fact was still expected for them. In this sense, the culture of reciprocity and leadership in Taita meant also that someone with connections was *expected* to share the benefits to community as a whole. However, the size of this "community" was not clear. In this sense the tension of the reform lied also in terms of the definition of public interest. Perhaps the unintended effect of emphasizing 'community – led' development, had been over the years, that this further re-emphasized a smaller sense of what was meant by public welfare.

6.3.4 Justified thefts? Tensions in translating reform principles

The historical heritage of political patronage in establishing water infrastructure, continuing indirectly by the CDF, and the often resulting uneven access to water in the community was also visible in the mindsets of people. While the reform aimed to establish accountable and commercially oriented water services, through commercialization and adopting corporate governance principles, the commercial orientation did not reduce the suspicions of the community members often surrounding established water projects. The underlying tensions were expressed by vandalism.

All of the interviewed water projects had experienced vandalism to some extent, involving often the breaking of pipelines on the way or at the intake of the water projects. The following explanation was found to be a central one:

"Ch: Ok, we were having with this village called Kipusi. They were saying that why should we have the cow being milked from my home, and I'm not drinking that

milk... They said look here, the water comes (from) our place, but we're not getting that water, you're not taking care of us. So they said, let us have water first then you give your people." (Interview with chairman of a water project 14.2.2014)

This idea of sharing water to its surroundings was expressed by the community members by a metaphor of '*milking the cow*': it would be unfair if other people benefited from this milk, and the owner of the cow would not. In one sense, controlling the water, which was seen as a 'gift from God' both in traditional and modern sense, and then selling it further was interpreted by some as privatization in the sense that someone was making a profit out of an otherwise freely flowing element. In the other sense, as water projects had become common, and paying for maintenance fees commonly accepted, the capturing and distribution of water from a locality that would not benefit from this water was seen as self-fish and against the general ethos of reciprocity, still an important value among the Taita.

However, this project was also faced with mistrust and jealousy that reflected the politics of benefit sharing. The new tariffs and modes of operation like employing people with contracts instead of asking community contributions, did not seem to remove this mistrust, but rather increased it. The chairman told that some people would accuse him for '*eating their money*', a common expression used for talking about politicians who drove fancy cars but failed to deliver development, if he was seen with a new shirt. Others complained that the project was employing only few people and not many.

The chairman reflected the reasons for these expressions of jealousy to be signs of poverty in the area as he said there was no industry apart from the sisal estate to employ people. However, he also admitted that the people didn't trust that the project was managing the funds properly. Indeed, the chairman was a representative of his ward in the CDF council and MPs office of the constituency. This indicated in the least sense, that he was an influential person and as a broker was able to '*bring water to the people*'. At the same time, however, it raised questions in the community about corrupt committees and projects benefitting only the elite, the case with far too many water projects in the past. In this context, it was not surprising that community members would show their suspicions or justified their 'theft' or 'vandalism' in the context of benefit sharing, as there was no guarantee (trust) that the water politics of the past would not continue, benefitting those

who were influential enough to demand them, and not the whole ‘community’. Although jealousy could be framed in the language of growing inequality compared to an ‘egalitarian’ past, this serves no purpose as communities have never been completely harmonious in any ideal sense. Furthermore ‘communities’ are irretrievably heterogeneous. The internal divisions could also be based on religion, or clan, not only class. However, based on the strong economic connotations of ownership and benefit sharing it seems that the wealth differences among people are not making the situation better.

However, another interpretation of the problem could also be made especially regarding the uphill cases of vandalism. It could be argued that the most marginalized people were probably not the ones behind vandalism but likely the people who wanted to continue getting water for free. This interpretation is not far-fetched either, as cultural values can often be used as justifying discourses to maintain the status quo of the ones with choice. In fact the residents in the lower zones have been marginalized ever since the settlement started there by the colonial rule, and as was discussed earlier, they were the ones that had to pay most for the water. This discourse of sharing if taken at face value would thus further marginalize the people in the lower zones who would desperately need the water to be let flow in pipes or downstream. Therefore the matter of politicization of the discourses of water sharing, could also stem from people living uphill with already power to speak out.

Albeit these justified interpretations, sometimes though, vandalism was just an expression of people’s frustration that there was no water in the pipelines during the dry spell while they still had to pay for it just the same. The rationing therefore created issues coupled with the aims for ‘demand management’ and the *promise* of paying according to cost. The TAVEVO water company had also had pipes vandalized in a village which had their water cut-off because they had not informed the people.

6.3.5 Regional politics of water control – bringing water to people

In this light it is not a surprise that there was an ongoing discourse about the solution to the water problem in Mwatate area, in fact a discourse started already on the eve of independence. The locally based heads of departments, local administration, water officers as well as local farmers, said that the issue of water shortage would be fixed if only water was made available from elsewhere. While the smaller borehole and earth dam projects

were seen also a solution, the fundamental thing to do would be to get water from the large water bodies within the county benefiting other people, like the Mzima springs in Mombasa and Lake Challa in Taveta (though the Lake is trans-boundary with Tanzania).

This idea was not, however, new, as was discussed in the history section. This spatially defined political debate of Mzima springs favoring the larger urban centers, now Voi included, is still on-going. While the pipeline has been opened for connections on the way, the connection is too expensive, 50 000 KES (Interview with Wildlife Works Ltd. 13.6.2013) and therefore it cannot benefit the plains people. The contestation over water reflects this injustice of benefit sharing inherited from the Colonial rule.

However, curiously this debate changed its form during the decades of Moi government and the increase of political patronage. The following quotation by the elders in Mwatate demonstrates the extent of the promises and discussions they've heard by different actors during the past decades:

“E3: you know this problem with water, we have talked about it for many years, in depth and for many years {E1: 30 years and over}, especially the lot in our leaders has been that if we got a sponsor who could draw the water from Lake Challa, and bring it here to Mwakitau, Bura, and to these areas; if that water was tapped, because it is a lot, it would have resolved the water problem. And maybe on the Taitas on the other side, maybe the water from Mzima springs also, it is drawn and taken to be used in Mombasa, the Taitas don't benefit yet it comes from their area. So the problem mostly is that getting that sponsorship is a problem because it is something that is very costly; even this one we heard it was surveyed and we heard it would cost several billions, a lot of money. So you know without sponsorship, our government cannot implement them, you would be crying but they can't do it. (Interview with village elders of Mwatate area, 17.5.2013)“

However, the next quotation shows both frustration towards the endless promises by newly voted politicians and a kind of ambivalent understanding of this almost utopian project.

“E1: But I remember, (asking E3) you are talking about the one in Taveta? The one in Taveta, a survey was done for it when I had gone to that hotel at Lake Challa, just when it had been newly built. I found pipes that had been brought by the Japanese, and

I even saw them myself, I was told these pipes are to take water to Mwatate, I clapped. At the time it was Mr. Darius Mbela who was the Member of Parliament... Later there was some speech going round that the pipes had been stolen, water cannot be transferred anymore... And even if you try to follow up on that and ask where those pipes are, we don't know.

E2: But I hear that the other day someone was telling me that money has been identified, I don't know 30 billion shillings to bring water here {E1: Now they had already been bought...}. Isn't that a lot of money? {E3: Billions!} A lot of money, now I see it is like they are giving up. The other day during the politicking we were lied to "I will bring water" and we voted but it is difficult, it is difficult. (Interview with village elders of Mwatate area, 17.5.2013)"

Indeed, it could be argued that the once genuine political debates about local control of water and a kind of state building, had over the years of patronage politics become 'politicized' and in fact obscured the locally based inequalities in distribution between the uphill and downhill; and between the large actors owning large tracts of land and boreholes (including the sisal estate). However, whatever the case, history shows then, that the politics of water have shaped and continue to shape the development of Taita Hills. While the politics of patronage is not over, the new county governments based on the new constitution, hold potential for a platform of genuine politics and development. Indeed the new County Development Plan of 2013 – 2017 (TTCG 2013) promises large funding for local water development, even larger regional project. What remains to be seen therefore is whether this is able to bring substantial avenues for the marginalized communities to take part or benefit from these developments; something which the water reform of 2002 tried genuinely to do, but remained feeble and caught up in the local process of change.

7 DISCUSSION

The aim of this study was to understand the translation of the (neoliberal) water policy reform and the effects thereof in the context of the waterscape of Taita Hills, South-Eastern Kenya. To contextualize the reform in its context, and make sense of its out-roll, the concept of translation used by David Mosse (2005) to study development policy and practice was used. The theoretical framework to understand the reform itself stemmed from economic sociology and political economy to make sense of the relationships between the state, the market and the society that the reform sought to change. Central analytic tools

used to understand the reform were adopted following the characterizations of a neoliberal infrastructural reform by Collier (2011). This framework paid attention to the styles of reasoning and translated practices of the reform. Moreover, in order to reflect upon the significance of the reform and its meaning for society, the framework of water justice was used to understand these changes and reform outcomes from the perspective of distributional and participatory justice. A scalar approach, referring to consideration of multiple levels in time and space, was taken in order to contextualize the reform translation in the specific locality with its specific historical, political and geographical features. The concept of water control was used as a boundary concept in order to link water studies to the political, economic and sociological questions of water. In this regard the study paid attention to the interactions of the policies and practices dealing with both water resources and water services and thus viewed the two as part of a totality of a waterscape.

The reform of the water sector that started in 2002 was a result of a long period of negotiations between the Kenyan state and donors, going back to the structural adjustment programs (SAP), which aimed to reform the role of government. The Poverty Reduction Strategy (PRS), which was the basis of the water sector reform, aimed to establish an institutional framework that would enhance the access to basic services by the poor and their participation, however by public sector retrenchment. Based on the policy analysis, the study found that the main objective of the Kenyan water reform was the reorganization of the institutional framework of the water sector, and the roles of state, market and the society. However, these roles were not reorganized in any straightforward manner, but were found to be much more nuanced.

It was found that the Kenyan water policy reform followed a similar style of reasoning as the infrastructural reforms driven by the World Bank elsewhere, such as the infrastructural reforms in Russia analyzed by Collier (2011). In his analysis, as in the case of the Kenyan water reform, the aim of the reform was not about reforming values, as reformers also sought to meet substantive ends of supplying an essential service to all citizens, including the poor and even the state guarantee of this. Moreover, following Collier's nuanced analysis showed that, what the reforms proposed was not *the marketization and deregulation of infrastructure, but a patterning of microeconomic interventions with other regulatory forms in what remains a crucial area for a government's attempt to realize*

certain substantive ends (p. 230).” This style of reasoning as Collier found, originated in the neoliberal thought of James Buchanan and George Stigler. Their key ideas with regard to justice and role of government in society, was the questioning of public value provided by state. The public (and state), in their view, could be broken down to individual (or group) actors with their own choices and interests regarding this welfare (ibid.). In this sense the neoliberal concept of equity and fair society was where individuals were given the possibility and freedom to search and enter the market of desires and thus the role of government was to ensure *hypothetical* equity for people to do this, instead of *actually* fulfilling peoples’ needs and wants in any blanket sort of way. Indeed, Collier (2011) argued, that according to neoliberal view of distributional justice and public services, low and equal prices for all was not acceptable, and instead, following Buchanan’s concept of fiscal equity, the role of state was to “*equalize the burden that a certain socially necessary good imposes on households at different levels of income, residing in different kinds of housing and in different parts of the country.*”

However, as Collier (2011) argued, the neoliberals also saw the importance of regulating the market in the name of public interest, that is, they understood the limits of choice. Moreover, they saw that regulation and redistributive mechanisms could be programmed according to microeconomic terms (ibid.). In the government sense, and in terms of participation, this neoliberal style of reasoning and the introduction of demand also meant the decentralization of government, and the call for accountability to citizen demands. Indeed market failures could be corrected by association of individuals, like communities (McGranahan & Mulenga 2009). In this regard, equity in (re)distribution is inherently linked to participation and accountability. Without participation, the market-like allocation of supply and demand, the primary mode of distribution, will fail.

Indeed, in the Kenyan context, this patterning of microeconomic interventions with the regulatory framework was started by ‘unbundling’ the water sector into various organizations, and separating the water resource management from water service provisioning. This separation enabled the ‘programming’ of both the overall regulatory framework of water resources, which regulated the different uses of water, including the water services. In terms of regulating the allocation and use of water resources the public decisions were meant to be based on demand based pricing embedded in a permit system

based on property rights. This market-like allocation of user rights was meant to be based on information about the resource and its use purpose, which meant that monitoring systems were to be established by state authorities in addition to monitoring or 'self-regulation' being carried out by 'user groups', e.g. to regard equity in allocation and public interest. These mechanisms of regulation would enable efficiency in the sector in terms of reduced human resources as well as at least in theory, enable the correcting of market failures of water allocation in terms of use priority due to environmental (drought, degradation) or social (unequal distribution of water) 'externalities'.

In terms of water service provisioning, the microeconomic programming meant commercializing and corporatizing the operation of services by introducing enterprise and competition that would create incentives resulting in improved efficiency. Moreover, instead of treating recipients of the services as passive subjects of need they would be treated as sovereign consumers with calculative choice, in control of how much they were willing to spend on water, thus creating incentives for self-regulation and efficient use. This meant that focus was on demand instead of supply management. However, these microeconomic interventions were coupled with social protection that was embedded in the water price mechanism and specifically targeted subsidies for the poor, ensuring the life-line norm-defined minimum of 'basic need of water' at an affordable price. As the services were meant to focus solely on economic goals, the social protective measures were supposed to be ensured by the state. However, in the Kenyan institutional framework, in the case of both central and local government, the decision making of the subsidies and social protective measures was given to an independent regulator in order to avoid political interference.

Eventually, it was argued, the gained efficiency in the water sector as a whole would release resources for conservation of water resources as well as for development of services and extending them to the poor unconnected consumers. However, in addition to this, the underlying aim was also to reduce the share of public sector spending on water, and ultimately limit the investments in the sector only to targeted areas, as most services would operate on full-cost recovery basis also in terms of capital investments. In the new institutional framework the funds for development of water infrastructure, which now focused mostly on rehabilitation, were distributed through the Water Service Boards,

regional bodies coordinating the flows of funds. However, the Boards were also operating as a corporation, and thus sold the water to large contracted suppliers who further distributed it based on demand. Indeed, the investment to infrastructure was also carried out on demand basis. This meant that the communities operating water projects in the peripheral rural areas, were meant to compete for funds from the donor market by writing proposals. Indeed importantly, the Board mostly coordinated the funds based on demands and as the local government had been removed from the institutional framework, in practice there was no-one responsible for regional planning of water service development. In the Kenyan water reform, participation was thus apolitical in that the actual power for decision making did not remain with the people, e.g. through the local government, but with the centralized authorities, who did consult the 'community'. In this regard public debate over investment decisions and 'needy' areas was not possible, and hence in reality the little planning that remained after the market patterning of regulation was a top-down venture.

In the context of Taita Hills these neoliberal styles of reasoning embedded in the institutional framework of the water policy reform translated both in terms of discourse and practice. However, not surprisingly, as development policy research shows (Mosse 2005) this translation was of hybrid and partial character, and mostly came to co-exist with the existing forms of water control and discourses thereof, as discussed in results section. In terms of intended effects, e.g. improving the economic sustainability of the water services, the reform established a comprehensive framework for fair regulated tariffs. Indeed, in principle the community projects and the main water supplier who had adopted these tariffs had been able to adapt this fairly well to local conditions, enabling cheaper tariffs for poorer customers and increases in their revenues. However, at the same time, the realities brought by the variability of supply, and the need to ration water coupled with the prevailing poverty in the area, did not enable the demand management techniques of metering and consumer choice to be realized. Indeed in this regard, the central argument of the reform stating that the commercial operation would enable extending services to the poor could not be assessed, as there was still a long way for the providers to become viable. Indeed the key hindrance was the lack of capital to rehabilitate the networks, making the providers lose revenue and customers due to poor services. In this sense the marginalized people, who were both far away from water and had less income, residing in

the lower lands, continued to pay the most for the water in the area, despite the welcomed targeted subsidies (funded by the donor-based instrument of the institutional framework , the WSTF) of water kiosks serving relatively cheap water.

However, unintended effects were also visible. While the reform had intended to bring the groups operating by their own rules keeping water as a “club good” under the regulation of public authority, the fact that this regulation was weak and programmed by demand, left those groups mainly to carry out their own means of looking for funding and operation. In this sense the revenue they collected would not enable extension to poor. Indeed the programming of service support and funding by demand unintendedly meant also that those groups that had connections to central figures in the community, or to politicians, would use these opportunities to gain access to financial resources. In this regard the local practice of patronage continued indirectly through the political funds like the CDF, making water to become a club good. Moreover, the historical trajectory of patronage politics in water services had also left mistrust in peoples’ minds about even the ‘regulated’ projects, which were also vandalized. Although possible reasons for vandalism and vandalizers were many, a major reason was felt injustices of benefit sharing, stemming from the culture of reciprocity and indeed a respect for an underlying public welfare over that of small groups, especially elites.

The major shortcomings of the reform had to do however, with the failure of improving the redistribution of water and finances to the neediest areas, mainly those facing drought. This was hindered by historical trajectory of unequal access to public land, and the fact that the permits required individual land ownership. Thus the ones who controlled land and capital, were in Sen's (1981) terms, *entitled* to water as well, even if it was not for the priority use. Moreover, the redistribution programmed by demand and cost-efficiency left the needy people at the periphery disadvantaged while the larger centers of demand either in terms of buying power like rich consumers, or in terms of population, were being served in practice as the first priority. Importantly, these ‘market failures’ were not corrected by the neoliberal regulatory system, the associating community or information, because it too had been programmed by demand (competition for funds; information from regulator) and left without ‘investment’ (‘capacity building’). Therefore, the historical trajectories of structural inequalities in the distribution of water and its control were not turned around by

the reform, even if small improvements in the access to water to the poor were made in the town of Mwatate. Indeed, while the district development planning system had been infused with patronage politics before, to which the reform responded by largely bypassing the local government and district level bodies, the inadequate regional planning and possibility for political debate thereof seemed not to be the optimal solution either. The poor and marginalized still paid most for the water.

What does this case tell about the overall neoliberal style of reasoning, and its suitability for arranging infrastructural services? The neoliberal style of reasoning of the water reform, as was characterized here based on Collier's findings (2011) on new economics of regulation and fiscal federalism, implied a reorganization of the role of government in terms of service delivery, but not the introduction of market in its place. Indeed, as also characterized by Craig & Porter (2006) these World Bank models of service delivery were largely based on the neo-institutional framework in which regulatory institutions re-embed 'markets' let free during the SAP. However, while the analysis of Collier (2011) differed from this view with a more precise and nuanced recount of 'introducing the market' in the form of microeconomic patterning of regulation by competition and choice, focusing on the consumption and demand side of the economy, the case of Kenyan reform shows that this focus on changing individual behaviour and institutions guiding it, left the structural issues on the background.

In this sense, other studies that have come to similar conclusions about the Kenyan reform entered the analysis from a different view point. Indeed Nilsson & Kaijser (2009) argued that lack of incentives were the reasons for the poor being left out by the reform. Furthermore, although Mumma (2005) in his theoretical analysis of the reform, came to the same conclusion that the property rights hinder the access to water by poor, his interpretation was that this was because of unsecure tenure, not that the requirement for private property itself was an issue. Moreover, the state-centrism, in terms of centralized control, was also noted by several other researches (K'Akumu 2006; Migai 2007; Mumma 2005) but with the backdrop of hindering private sector investment, not diminishing means for maintaining public interest.

In this sense the market approach has been perhaps misunderstood. Indeed, the Kenyan reform resembled also the market-based model of the water services presented by Rouse (2009), which called for commercialization embedded in regulatory framework ensuring subsidies for the poor. The critique of Swyngedouw (2009b) called for the need to redefine the concept of full-cost recovery to include systemic forms of redistribution, meaning discussion over different forms of subsidization (eg. cross-subsidization or taxing) and that this should take place through a democratic and political discussion, as the question of who is responsible for investing or subsidizing what part of the service is inherently a political question. In the sense of redistribution, Swyngedouw's (2009b) worry is perhaps misplaced, as what the reform aimed to do was to redirect the subsidies in a targeted manner so that they would actually reach the poor instead of the wealthy, which the reformists argued, was seen to take place when everybody was "subsidized" by lower tariffs. Moreover, as the market-approach and neoliberals argued, the benefits were often determined by the political influence of these wealthier groups. In this regard, the redistributive effects aimed by the market approach, at least in principle, were perhaps more justified.

In practice however, as the case of the Kenyan water reform translation shows, this idea coupled with the inadequate focus on planning and the unbundling of responsibility for many different groups, resulted in somewhat chaotic coordination, which in practice challenged the redistribution of water and funds to the needy areas. This was further enhanced by the demand and consumer based logic and private property of the market-patterned distribution, while supply side would have been important too. Moreover, however, as Torregrosa & Jiménez (2009) also found in the Mexican case, the clientalistic modes of water control and gaining access to resources, i.e. political interference of redistribution, was not erased by the reforms.

Indeed, the important question is what then is the significance of water policy reforms for improving the access to water as in the case study area of Taita Hills? The translation of the reform in practical / technical terms showed that the style of reasoning yielded some positive but mostly ambiguous tendencies in terms of access to and control over water. Indeed, as noted earlier, perhaps as Mosse has argued, this case shows that, development policy, be it a micro-project or a larger government reforming project that the World Bank

set out to do, can never be really implemented as practice. That is because social action is always context dependent and requires translation. This point is also made by McGranahan & Mulenga (2009) who argue that any idealizations often embedded in development policies about plans, markets or communities in reaching the ends of public interest, economic efficiency or collective action, respectively, are always illusory. Still, measures can be taken to increase the opportunities for achieving these ends.

However, in terms of cultural translation, that is, change in accepted values or practices, Harrison (ibid.) argues that the neoliberal reasoning is problematic, with its fundamental view of society as comprised of interest groups or individuals that engage in social action with the economic logic. Indeed he argues, as do the old institutional economists like Polanyi and Weber, that while this may be true at times, social action is much wider and is motivated by many other values and rationalities than the market-logic. In this regard, and as Chakrabarty (in Pollard *et al.* 2011) argues, the danger of this economic style of reasoning embedded in the capitalist economies is that through translation the degree of *homoeconomicus* may increase over culture, that is, that instrumental and self-interested behaviour becomes morally acceptable. In Taita Hills, this translation of economic rationality, had started from the Colonial period and was visible in the discourses of the people. However, perhaps luckily, as in the case of policy translation, it co-existed with the other social practises like reciprocity and gift-giving. However, as Chakrabarty (in ibid.), and along lines of Hacking (2002), further argues, categories which are used in policy language, like efficiency, also bare in them the origins of a certain view of labor and of being. Indeed, he argues that while it may be a useful analytic category, its origins as a technique of power of the colonial rule (ibid. p. 33) should not be forgotten. In this sense, policy styles of reasoning do matter, and perhaps their content and meaning should be carefully analysed before they are used as guiding models to change practices at places with different cultures.

In terms of water policy then, this study agrees with the points made by Seppälä & Katko (2009) and Hukka & Katko (2009) who call for the need to consider locally viable options and the importance of maintaining the goals of water services in balance. However, while their approach to studying water-service models was not orthodoxically based on neo-institutional theory, the neo-institutional framework can easily lead to seeing the question

of water service sector through the lenses of economics, and thus change the degree of which other approaches could be equally good or even more beneficial. But perhaps more importantly, as Mosse (2005, p. 233) also argues, the problem with fixed models and seeing development as deductive and a model based thing, leaves no space for open ended learning. Moreover, Mosse (ibid.), argues that as policies are themselves embedded in unequal power relations, the bottom-up becomes top-down in reality and thus development “*projects remain forever projections*”. This was visible also in the Taita Hills, as bureaucrats on the ground were tied by the constraints of the created model to respond to urgent needs, while the community groups formed by the model confusedly waited what they were supposed to do.

However, perhaps what Seppälä & Katko (2009) and Hukka & Katko (2009) also argued, and Mosse (2005) in the context of development, while the models of water services may guide planning of water services, the organization and institutional frameworks of the services emerge from the local needs through local historical and political processes of change. Indeed, although the focus of this research was on micro-level translation of the water policy reform, as was noted in the national context of the water reform process, the reform had been a politically contested negotiation between the donors and the Kenyan state during a time when the whole Kenyan political system was going through change to multi-partyism after a long history of one-party state. Indeed, the local government had been under reform already and the idea of a new constitution had been emerging at the onset of the new Water Act (2002). Still in the midst of this turmoil, the Kenyan water sector reform had been able to avoid privatization of its water utilities, and perhaps luckily this was in part due to changing policy environment in general due to the social unrest it had created. Nevertheless, at the time of the study, the Water Act was already being aligned to the new constitution and devolution before it had even completely been out-rolled. Indeed, new much more promising structures based on local control for the development and operation of water services was to be expected, with hopefully more democratic control of the water services and their planning.

8 CONCLUSIONS

This study has attempted to understand a complicated process of a neoliberal reform translation and its effects with regard to water justice. To do this, the study took a critical,

but nuanced approach to articulate the aims of the reform and their underlying styles of reasoning and through ethnography sought to understand its translation in the historical and political context of the waterscape of Taita Hills.

The study found that the style of reasoning found in World Bank policy reforms regarding service delivery like water, is characterized by neoliberal thinking based on lines of theory found in new economics of regulation, as well as in new institutional economics. However, this study showed, by following a more nuanced approach called by scholars like Collier (2011) that these lines of thought were just other attempts to answer questions of substantive provisioning of vital services. Importantly, some of the ideas were based on more fair aims of redistribution, while others, like seeing politics mostly as a struggle of interests, being beneficial only in narrow sense, were problematic in terms of locally based decision making regarding the most water scarce areas. Moreover, while the reform did not mean to bypass local context, and indeed in some ways the institutional framework responded to the problems of the past frameworks, it did not adequately consider the agency of nature or of people, which challenged meeting the goals of the reform and maintained instead of removed, existing power relations enabling elite control of water.

In terms of development policy regarding water, what this study showed was that attempts to improve access to water of marginalized people, should not only be considered on the level of improving existing water infrastructures or increasing available sources to the poor; nor through community mobilization for self-help development and participation. The adoption of water justice perspective that focused on analyzing the access to and control over water and its distribution enabled a broader analysis of the context of water resource allocation and questioning of where, how and for what purposes water was made available, and importantly by whom and by what means. This analysis showed, that in the waterscape of Taita Hills water was still accessed by different means, directly from rivers, springs but also through means of technology by collecting rain, digging wells and drilling boreholes, and distributing water by pipes from one place to another. Importantly, however, people who had best access to water were the ones who lived near water, or those that had access to capital and/or land enabling the use of technological means to get water (connecting to pipes, building storage structures). In collective terms then, the people who were marginalized were the ones that lived far away from water sources and were poor.

The reform did not change this overall pattern of water access in any substantial way. In collective terms, it conditioned the control of water through private property and the commercial orientation, leaving other modes unrecognized. Still these other modes continued to exist, which had to do with gaining access to resources through political links and to water directly from sources. In this sense access to water was not universalized nor made a public good for everyone.

Indeed, the underlying economic or political structures of power in the society were not changed. Importantly then, changing the institutional framework of the water sector by policy is clearly not enough. However, as Mosse (2005) noted, perhaps this inevitability of partial translation could be seen more truthfully giving more space for open-ended learning, and perhaps by so doing increase the potential of policy to guide meaningful action for the improvement of water services and development at large. While the study did not attempt to give solutions to the problem of unequal access, it is hoped that through this thick contextualization the study has contributed to understanding the complexity of the process of water service delivery and development in a diverse and beautiful country like Kenya.

ACKNOWLEDGEMENTS

The research work enclosed in this thesis is a result of work and efforts enabled and carried out by multiple people, to whom I owe enormous thanks. First, I would like to thank the TAITAWATER project (funded by the Academy of Finland), and Prof. Petri Pellikka from the Dept. of Geosciences and Geography of University of Helsinki, who recruited me and provided the financial support to undertake this study. In this line I wish to thank the Taita Research Station staff (Rebecca, Granton, Darius, Eli and Julius) without whom the daily necessities of life would not have been met, including the moments of laughter! You are all amazing people! Secondly, I wish to thank Adj. Prof. Paola Minoia from Dept. of Geosciences and Geography of University of Helsinki, who supervised and coordinated the TAITAWATER SOCIAL part of the research project. Thank you for the inspiration and guidance in carrying out this study and for the encouragement to share the results with the academia and especially the local people; and for your patience! Third, I want to thank the whole research team Johanna Hohenthal, Emmah Owidi, Belinda Andersson, and Mwadime Mjomba with whom the ideas and interests of this research has been carried out (all the mistakes in this thesis are my own); and the inspiring moments shared together during the fieldwork! Fourth, I wish to thank my supervisors Prof. Jeremy Gould from the University of Jyväskylä, who has encouraged me to be confused and has guided me in this learning process; Dr. Prasad Kaparaju (now in Australia), who guided me for a part of this journey; and finally Prof. Tuula Tuhkanen, who jumped on board towards the end of this process, to give important guidance regarding the technical aspects of the research. This has truly been an interdisciplinary research endeavor! Fifth, and most importantly however, the completion of this work would not have been possible without all the love and support I have received from my family and friends (from near and far!) throughout this process. I owe sincere gratitude to my parents and brother, who have supported me and believed in me unconditionally throughout the process; thank you dad for reviews! Most of all, however, I owe thanks to Matti, my dear partner and husband, who has shared and seen most closely the uphill and downhill of this work. I am forever grateful for the patience, cheerful encouragement and the faith you have given me that I would finish this work. Last but not least, I would like to dedicate this work in memory of my two Grandmothers, whom I lost along the way. Humanity has much to learn about history, embedded in people and their experiences, as it is through people that true development takes place.

REFERENCES

- African Affairs Department, 1955. *Coast Province Annual Report 1955*. Colony and Protectorate of Kenya.
- ARTTD, 1975. *Annual Report Taita-Taveta District 1975*. Republic of Kenya.
- Bakker, K., 2005. Neoliberalizing Nature? Market Environmentalism in Water Supply in England and Wales. *Annals of the Association of American Geographers*, 95 (3), 542–565.
- Bakker, K., 2007. The ‘Commons’ Versus the ‘Commodity’: Alter-globalization, Anti-privatization and the Human Right to Water in the Global South. *Antipode*, 39 (3), 430–455.
- Bakker, K., 2010. The limits of ‘neoliberal natures’: Debating green neoliberalism. *Progress in Human Geography*, 34 (6), 715–735.
- Barrasqué, B., 2009. The Development of Water Services in Europe: From Diversity to Convergence? In: J.E. Castro and L. Heller, eds. *Water and Sanitation Services: Public Policy and Management*. New York: Earthscan.
- Bauer, C.J., 2012. *Against the current: privatization, water markets, and the state in Chile*. Springer Science & Business Media.
- Bhaskar, R., 1998. *The possibility of naturalism: A philosophical critique of the contemporary human sciences*. Psychology Press.
- Briceño-Garmendia, C. and Shkaratan, M., 2011. *Kenya's infrastructure: a continental perspective*. World Bank, Working Paper.
- Brooks, T., Lens, L., De Meyer, M., Waiyaki, E., and Wilder, C., 1998. Avian biogeography of the Taita Hills, Kenya. *Journal of East African Natural History*, 87 (1), 189–194.
- Castro, J.E., 2008. Neoliberal water and sanitation policies as a failed development strategy: lessons from developing countries. *Progress in Development Studies*, 8 (1), 66–83.
- Castro, J.E. and Heller, L., eds., 2009. *Water and sanitation services: public policy and management*. New York: Earthscan.
- Collier, S.J., 2011. *Post-Soviet Social: Neoliberalism, Social Modernity, Biopolitics*. Princeton University Press.
- Craig, D. and Porter, D., 2006. *Development beyond neoliberalism?: Governance, poverty reduction and political economy*. London: Routledge.
- Crook, R.C., 2003. Decentralisation and poverty reduction in Africa: the politics of local–central relations. *Public administration and development*, 23 (1), 77–88.
- Davies, C.A., 2008. *Reflexive Ethnography: A guide to researching selves and others* (2nd ed.). London: Routledge.
- Davis, J., Garvey, G., and Wood, M., 1993. *Developing and managing community water supplies*. Oxfam.
- Dey, I., 2003. *Qualitative data analysis: A user friendly guide for social scientists*. Routledge.
- Farquharson, F.A.K. and Wright, E.P., 1990. *Potential water resources for the Kilibasi area*. Oxon, UK: Institute of Hydrology.
- Ferguson, J., 1994. *The Anti-politics Machine: «Development,» depoliticization, and bureaucratic power in Lesotho*. Minneapolis, University of Minnesota Press.
- Fleuret, 1985. The Social Organization of Water Control in the Taita Hills, Kenya. *American Ethnologist*, 12 (1), 103 – 118.

- Fleuret, A., 1988. Some consequences of tenure and agrarian reform in Taita, Kenya. In: R.E. Downs and S.P. Reyna, eds. *Land and society in contemporary Africa*. Hanover, NH, USA: University Press of New England, 136–158.
- Fleuret, A., 1989. Indigenous Taita responses to drought. In: Huss-Ashmore, R. and Katz, S.H. eds. *African food systems in Crisis. Part one: Microperspectives*. Amsterdam: Gordon and Breach Science Publisher, 221–237.
- Flyvbjerg, B., 2001. *Making social science matter: Why social inquiry fails and how it can succeed again*. Cambridge university press.
- Gabay, C. and Death, C., 2014. *Critical Perspectives on African Politics: Liberal Interventions, State-building and Civil Society*. London: Routledge.
- Gibbon, P., 1995. *Markets, civil society and democracy in Kenya*. Nordic Africa Institute.
- Global Water Partnership (GWP), 2000. Integrated Water Resources Management. *Technical Advisory Committee (TAC) Background Paper no 4*.
- GoK, 2007. *National Water Service Strategy*. Government of Kenya.
- Goldman, M., 2007. How 'Water for All!' policy became hegemonic: The power of the World Bank and its transnational policy networks. *Geoforum*, 38 (5), 786–800.
- Hacking, I., 2002. *Historical ontology*. Springer.
- Hammersley, M. and Atkinson, P., 2007. *Ethnography: Principles in practice*. London: Routledge.
- Hansard, 1962. Kenya National Assembly Official Record (Hansard) May 8 - Jul 27, 1962.
- Hansard, 1970. Kenya National Assembly Official Record (Hansard) June 16 - Jul 15, 1970.
- Hansard, 1971. *Kenya National Assembly (Official Record (Hansard)) May 4th - June 23, 1971*.
- Harris, G.G., 1978. *Casting out anger: Religion among the Taita of Kenya*. Cambridge: Cambridge University Press.
- Harrison, G., 2010. *Neoliberal Africa: The impact of global social engineering*. London: Zed Books.
- Harriss, J., Hunter, J., and Lewis, C.M., 1995. *The New Institutional Economics and Third World Development*. Psychology Press.
- Hermunen, T., 2004. Land use policy in Kenya: Experiences from Taita Taveta district. Master Thesis. University of Helsinki.
- Himberg, N., 2011. Traditionally Protected Forests Role within Transforming Natural Resource Management Regimes in Taita Hills, Kenya. PhD Thesis. University of Helsinki.
- Himberg, N., Omoro, L., Pellikka, P., and Luukkanen, O., 2009. The benefits and constraints of participation in forest management. The case of Taita Hills, Kenya. *Fennia-International Journal of Geography*, 187 (1), 61–76.
- Hohenthal, J., Owidi, E., Minoia, P., and Pellikka, P., 2015. Local assessment of changes in water-related ecosystem services and their management: DPASER conceptual model and its application in Taita Hills, Kenya. *International Journal of Biodiversity Science, Ecosystem Services & Management*, (ahead-of-print), 1–14.
- Hukka, J. and Katko, T., 2009. Complementary Paradigms of Water and Sanitation Services: Lessons from the Finnish Experience. In: J.E. Castro and L. Heller, eds. *Water and Sanitation Services: Public Policy and Management*. New York: Earthscan.
- Juuti, P., Katko, T., Mäki, H., Nyanchaga, E.N., Rautanen, S.-L., and Vuorinen, H., 2007. *Governance in Water Sector: Comparing development in Kenya, Nepal, South Africa and Finland*. Tampere: Tampere University Press.

- K'Akumu, O.A., 2006. Privatization model for water enterprise in Kenya. *Water Policy*, 8 (6), 539–557.
- Katko, T.S., Juuti, P.S., and Rajala, R.P., 2009. Writing the history of water services. *Physics and Chemistry of the Earth, Parts A/B/C*, 34 (3), 156–163.
- Kivikkokangas-Sandgren, R., Tuhkanen, S., and Uotila, J., 1991. *Land Use and Strategies for Survival in the Taita Hills, Taita-Taveta District, Southeastern Kenya: Papers Prepared by the Participants in the Fieldwork of the Taita-Taveta Research Project, Carried Out in August-September 1990*. Finnish Association for Development Geography.
- Kivivuori, B., 2013. The local perception on changes in water availability and accessibility in the Taita Hills, Kenya. Master Thesis. University of Helsinki.
- Latour, B., 2000. When things strike back: a possible contribution of 'science studies' to the social sciences. *The British Journal of Sociology*, 51 (1), 107–123.
- McGranahan, G. and Mulenga, M., 2009. Community Organization and Alternative Paradigms for improving Water and Sanitation in Deprived Settlements. In: J.E. Castro and L. Heller, eds. *Water and Sanitation Services: Public Policy and Management*. New York: Earthscan.
- Mehta, M., Virjee, K., Evans, B., and Wathobio, K., 2007. Business Development Services for Community Managed Small Water Enterprises. *Water Sanitation Program: Nairobi Kenya*.
- Mghanga, M., 2010. *Usipoziba ufa utajenga ukuta (Land, elections, and conflicts in Kenya's Coast Province)*. Heinrich Böll Stiftung East & Horn of Africa.
- Migai, A., 2007. Governing water and sanitation in Kenya: Public Law, Private Sector Participation and the Elusive Quest for a Suitable Institutional Framework. Presented at the IELRC conference: Legal Aspects of Water Sector Reforms, Geneva.
- Mollinga, P.P., 2008. Water, politics and development: Framing a political sociology of water resources management. *Water Alternatives*, 1 (1), 7–23.
- Mosse, D., 2005. *Cultivating development: An ethnography of aid policy and practice*. MI: Pluto Press.
- MoWI, 2007. *Water Resource Management Rules, 2007*. Nairobi: Government of Kenya.
- MoWI, 2013. *Annual Water Sector Review 2011 – 2012*. Nairobi: Government of Kenya.
- Mumma, A., 2005. Kenya's new water law: an analysis of the implications for the rural poor. *International workshop on 'African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa'*, 26–28.
- Nazzaro, A.A., 1974. Changing use of the resource base among the Taita of Kenya. PhD Thesis. Department of Geography, Michigan State University.
- Neumann, R., 2005. *Making Political Ecology*. London: Oxford University Press.
- Nilsson, D., 2011. Pipes, Progress, and Poverty: Social and Technological Change in Urban Water Provision in Kenya and Uganda 1895-2010. PhD Thesis. Royal Institute of Technology, Sweden.
- Nilsson, D. and Kaijser, A., 2009. Discrimination by Default: The Post-Colonial Heritage of Urban Water Provision in East-Africa. In: J.E. Castro and L. Heller, eds. *Water and Sanitation Services: Public Policy and Management*. New York: Earthscan.
- Nilsson, D. and Nyanchaga, E.N., 2008. Pipes and politics: a century of change and continuity in Kenyan urban water supply. *The Journal of Modern African Studies*, 46 (01), 133–158.
- Njeru, J., 2013. 'Donor-driven' neoliberal reform processes and urban environmental change in Kenya The case of Karura Forest in Nairobi. *Progress in Development Studies*, 13 (1), 63–78.

- Njogu, J. and Dietz, T., 2006. *Land Use and Tenure Entitlement Rights for Community-based Wildlife and Forest Conservation in Taita Taveta, Kenya*. University of Nairobi, IDS Working Paper No. 542.
- North, D., 1977. Markets and other allocation systems in history: the challenge of Karl Polanyi. *Journal of European Economic History*, 6, 703–16.
- Odugbemi, S. and Jacobson, T.L., 2008. *Governance reform under real world conditions: citizens, stakeholders, and voice*. World bank publications.
- Orlove, B. and Caton, S.C., 2010. Water sustainability: Anthropological approaches and prospects. *Annual Review of Anthropology*, 39, 401–415.
- Owuor, S.O. and Foeken, W.J., 2009. *Water reforms and interventions in urban Kenya - Institutional set-up, emerging impact and challenges*. ASC, Working Paper No. 83.
- Pellikka, P.K., Lötjönen, M., Siljander, M., and Lens, L., 2009. Airborne remote sensing of spatiotemporal change (1955–2004) in indigenous and exotic forest cover in the Taita Hills, Kenya. *International Journal of Applied Earth Observation and Geoinformation*, 11 (4), 221–232.
- Polanyi, K., 1944. *The Great Transformation: The Political And Economic Origins Of Our Time*. Beacon Press Pa.
- Pollard, J., McEwan, C., and Hughes, A., 2011. *Postcolonial economies*. Zed Books.
- Portes, A., 2010. *Economic Sociology - a systematic inquiry*. Princeton: Princeton University Press.
- Prof of UoN, 2013. personal communication.
- Rodney, W., 1972. How Europe Underdeveloped Africa. *Beyond borders: Thinking critically about global issues*, 107–125.
- Rouse, M., 2009. The Market-Centred Paradigm. In: J.E. Castro and L. Heller, eds. *Water and Sanitation Services: Public Policy and Management*. New York: Earthscan.
- Sen, A., 1981. *Poverty and famines: an essay on entitlement and deprivation*. Oxford University Press.
- Seppälä, O. and Katko, T., 2009. Management and Organization of Water and Sanitation Services: European Experiences. In: J.E. Castro and L. Heller, eds. *Water and Sanitation Services: Public Policy and Management*. New York: Earthscan.
- Smith, J.H., 2008. *Bewitching development: witchcraft and the reinvention of development in neoliberal Kenya*. Chicago: University of Chicago Press.
- Soini, E., 2006. Livelihood, land use and environment interactions in the highlands of East Africa. PhD Thesis. University of Helsinki.
- Swyngedouw, E., 2009a. The Political Economy and Political Ecology of the Hydro-Social Cycle. *Journal of Contemporary Water Research & Education*, 142 (1), 56–60.
- Swyngedouw, E., 2009b. Troubled Waters: The Political Economy of Essential Public Services. In: J.E. Castro and L. Heller, eds. *Water and Sanitation Services: Public Policy and Management*. New York: Earthscan.
- TAVEVO, 2013. Strategic and Business Plan 2008 - 2013.
- TDDP, 2008. *Taita District Development Plan 2008-2012 (draft)*. Republic of Kenya.
- Torregrosa, M.L. and Jiménez, B.C., 2009. Challenges Facing the Universal Access of Water and Sanitation in Mexico. In: J.E. Castro and L. Heller, eds. *Water and Sanitation Services: Public Policy and Management*. New York: Earthscan.
- Trigilia, C., 2002. *Economic Sociology - State, Market, and Society in Modern Capitalism*. Cornwall: Blackwell Publishing.
- TTCG, 2013. *The Taita Taveta County Integrated Development Plan 2013-2017*. Taita Taveta County Government.
- TTDDP, 1976. *Taita-Taveta District Development Plan 1974 - 1978*. Republic of Kenya.
- TTDDP, 1981. *Taita Taveta District Development Plan 1979 - 1983*. Republic of Kenya.

- Tuomi, J. and Sarajärvi, A., 2009. *Laadullinen tutkimus ja sisällönanalyysi*. Helsinki: Tammi.
- UN, 2012. *The Millennium Development Goals Report 2012*. New York: United Nations.
- UNHR, UN-HABITAT, and WHO, 2010. *The Right to Water*. Geneva: Office of the United Nations High Commissioner for Human Rights, United Nations Office, Fact Sheet 35.
- Vinnari, E.M. and Näsi, S., 2008. Creative accrual accounting in the public sector: 'milking' water utilities to balance municipal budgets and accounts. *Financial Accountability & Management*, 24 (2), 97–116.
- WASREB, 2008. *Tariff Guidelines*. Republic of Kenya.
- Water Act, 2002. *Water Act 2002*. Republic of Kenya.
- Weber, M., 2009. *The theory of social and economic organization*. Simon and Schuster.
- Willis, J., 1995. 'Men on the Spot,' Labor, and the Colonial State in British East Africa: The Mombasa Water Supply, 1911-1917. *International Journal of African Historical Studies*, 25–48.
- Windischhofer, R., 2007. Municipal Entrepreneurialism and the commercialization of the Finnish water sector. PhD Thesis. Tampere University Press.
- Wodak, R. and Weiss, G., 2003. *Critical Discourse Analysis. Theory and Interdisciplinarity*. Palgrave Macmillan.
- World Bank, 1994. World Development Report 1994 : Infrastructure for Development.
- World Bank, 2002. *Kenya - An Assessment of Local Service Delivery and Local Governments in Kenya*. Washington, D.C.: World Bank, No. 24383.
- World Bank, 2004. *Implementation Completion Report (IDA-34060 IDA-34061 IDA-34062 IDA-34063) On a Credit in the amount of SDR 113,1 Million to the Republic of Kenya for an Economic and public sector reform credit*. World Bank, No. 30969.
- Zwarteveen, M.Z. and Boelens, R., 2014. Defining, researching and struggling for water justice: some conceptual building blocks for research and action. *Water International*, 39 (2), 143–158.

APPENDIX 1.

Household interviews, February 2014

Date: _____ Time: _____
 Location: _____ (x: _____, y: _____, z: _____)
 ID code: _____
 Interviewer(s): _____

Permission to record the interview: a) yes, b) no

Name of the respondent / *Jina* (optional): _____

Background questions: / *Maswali ju ya ufahamu/kufahamikiana:*

1. Gender: a) female, b) male, c) other
2. Year of birth: _____
3. Place of birth: _____
4. Nationality: _____
5. Tribe or ethnic background: _____
6. Education: a) no formal education, b) primary school, d) high school, e) vocational school, f) university, g) other, what? _____
7. Occupation/job title: _____
8. Marital status: a) single, b) married, c) divorced, d) widow/er
9. Religion: a) Christianity, b) Islam, c) Hinduism, d) Atheism, e) Other _____
10. Number of children a) at home: _____, b) at school, _____ c) at work _____
11. Do the children's grandparents live with you? _____
12. Are there any other people living in your household? _____
13. Animals and livestock owned _____
14. Currently, what are the main sources of income for your family?
 How much would you say you have money to spend per month?
 Does it vary a lot (f. ex. between dry and rain seasons)?
 Do you get money from family members who live in some other place? _____
 If yes, what do you use that money for (f. ex. living, saving for future investments)?
 How important is that money for you? Would you survive without it?
15. Where do you get your water for your domestic uses?
 How much water does your family use in a day? _____
 Is the water enough for your needs? YES _____ NO _____
 Who owns / manages the source? How much is charged?
 a. Private person _____ KSH / _____
 b. Community group _____ KSH / _____
 c. TAVEVO / County council _____ KSH / _____
 d. other _____
 Is it reliable? Can you be denied access?
 If community project, are there additional fees to pay?
 Are the sources clean? Is the water treated or do you treat at home?
 Have you or your children had illnesses due to the water? What kind of?
16. How long does it take for you to collect water? Does it vary seasonally?
17. How much do you spend on water in a day / month during....?

- a. Rain season (months (1-12) _____) : _____ KSH
/ _____
- b. Dry season (months (1-12) _____) : _____ KSH
/ _____

How does this affect your family's other livelihood needs?

Have you always had to pay for water? When did you start paying?

How much would you be able to or willing to pay for water? _____ KSH / _____

How would your life be different if water was free? Should it be free?

18. Are people in your village able to pay for water?
19. Do people in your village/neighborhood have equal access to water? If yes, how? If no, why?
20. What are your main means of survival during droughts?
- a. What do you think are the main factors that limit your access to water (is it money?) and food during droughts?

In Mwatate only: What do you think about the Sisal Estate? Do you think that it limits your means to cope with drought, e.g. access to water? (Restricting your access to the dam; heard/seen boreholes affecting other springs)?

APPENDIX 2.

Interview Guide – County Council Water Officer

Date _____
 Time _____
 Location _____
 Interviewers _____
 Code _____
 Permission to record _____

Background:

Name and Title (sex: F/M) _____
 Number of years working in Taita /office _____
 Office based in _____
 Education _____

- What is your current role in the provisioning of water? What services does your office provide? Do you charge?
- Where does the county council currently supply water? On the map... How many pipelines? What are the other major sources of water in the Mwatate Catchment? Could you show on the map the sources, pump houses, water purification plants and pipelines. Where do the pipes from Mwatate reach? Are there any pipelines coming to Mwatate catchment from outside the catchment borders?
- Which water catchment points maintain the water resources in the Mwatate area? Can you mark them on the map?
- In which areas on the map do land use activities impact most on water resources?
- View of state of water resources in the Mwatate Catchment? Taita Hills in general?
- View of main challenges/threats to the water resources in Mwatate?
- What is the source of this water?
- How do you make sure the water source remains sustainable?
- Who is responsible for monitoring water quality at source (surface and ground and at the water plant) in the area? Do you take water samples?
- How does the DWO monitor the functioning of the supply?
- Who maintains the source/ the infrastructure like purification plant etc.?
- Who collects the revenues from water? How much is the charge?
- How many taps are there under county council water supply? What is the current supply rate / day?
- How often are there water cuts? What is the reason for them?
- What is the current situation with TAVEVO? How are your tasks divided?
- Do you work with the CWSB area director? How?
- Are you in contact with WRMA?
- Which other institutions (eg. MoFishDev; MoA; KFS; Lands; NEMA?) do you work with? In what cases? Which local authorities (county council and chiefs)? How often? What about NGOs?

- Do people complain to you in case of a problem? If not: to whom?
- Are you aware of any water conflicts in the area?
- How are the different users in different locations considered in the provisioning of water?
- Do you think there is fairness in allocation of water resources in the area? What strategies are there in place to promote equity in water distribution?
- How are the rights of different water users considered? How are marginalized groups like women and children or different ethnic groups considered in the allocation of water?
- Who runs the kiosks? Where do they get permits from?
- What are the main uses of water in Mwatate area? Are there any large uses/potential resources for larger uses? Are they private? How are they regulated?
- Are there any regulations for the use of the tap water? For example for irrigation or livestock?
- What uses have the most negative impact on the water resources? Does your office have power to control the use or misuse of water resources? What could be done?
- What would in your opinion improve the management of water resources and provisioning of water in the area?
- Are there any water projects in the area? Where do they get the water from?
- What is the state of infrastructure?
- Are there any issues arising from water provisioning efforts that impact negatively on land in the area?
- Are there any challenges to water provisioning efforts that arise from land owners/ land actors?

APPENDIX 3.

Transcription

Code:	County Council Water Office Mwatate_250213
Interview name/category/ subgroup:	Interview with county council water officer/water supply – old system/male
Location:	CC water officer's office, Mwatate, Kenya
Date of the interview:	25.2.2013 in the afternoon
Interviewer ID:	M, Marinka Leppänen
Interviewee ID/alias:	CW, CC water officer
Other people present:	-
Transcriber:	Marinka Leppänen
Length of the interview:	00:42:10

Description of the research setting:

The interview took place in the county council water office next to Treetops Hotel (restaurant) in Mwatate. In the beginning there were some other officers present, but they left. There was a short disruption during the interview. The atmosphere of the interview was relaxed.

Transcription:

M: So what is exactly your title?

CW: I'm senior foreman for water.

M: You work for the county council?

CW: Yeah.

M: And your area of work is in..?

CW: is in Mwatate, and Wundanyi in some areas. Where-ever the council has any issue to do with water, I do work there. But for now, I'm considering on Mwatate, between Dembwa and Mwatate. But the council can take me anywhere where ever they have an issue concerning water.

M: So do you work in Kidaya/Ngerenyi as well?

CW: No, in case there is any project concerning community that involves directly the council, it's when I can chip in.

M: And how long have you worked for this council?

CW: I joined the council in 1997. So you can see it's about 25 years.

M: And are you from here from Taita originally?

CW: Yeah, I'm from Taita, but from Taveta.

M: And what's your educational background?

CW: I'm form 4 leaver, decent three, but I did some courses concerning water management. I did my water operational courses in Kenya Water Institute in Nairobi. I also did supervisor management a bit.

M: Ok, so what is your current role in the management of water right now?

CW: It's overseeing the operations of this Mwatate water supply, and any other council water, any issue concerning water in the county council, I'm in charge. I coordinate the duties of the junior staff. I do also make sure that the water supplies run the right way. Water maintenance, treatment...so I'm supervising the water operations.

M: And do you also provide some services to the community for some fees?

CW: We have connected them with water meters. So when they get water through their meters, we charge them. So they pay bills through their water meters.

M: How much is the rate?

CW: The rate is, it varies. But the minimum charge is 250 Ksh per month. That is 6 m³ and below.

M: And then from there it's like how much you use...

CW: It varies now, when you go beyond 10 m³, it is 450. 10m³ and below its 450. So from 10 – 20 m³ we charge every cubic meters on top of the demand, you find it's about 25 shillings per cubic meter. So after 20 it varies with consumption.

M: Ok, I know that there is some shift in the supply system, so what is your relation, are you shifting to TAVEVO?

CW: Yeah really, in fact TAVEVO has just delayed to take over from the county council. So by now we should be there. So we are waiting any time, they'll come and take us. We'll be joining there. The water act now has also changed. So we are ready to face any challenge.

M: And in Mwatate now, what are the main sources of water that is run by the council?

CW: The main source here, we have the river known as Dembwa river, but it has now become a seasonal river. Right now we have a very big shortage of water. Because the upstream has almost dried . We have two streams which we constructed our intake there. One of the streams which is of one of our sources it has dried. So you find now we are getting very little water, in fact it's not reaching here now. So I think now they must look for another reliable source. Because now you see the upstream, the catchment areas has been damaged by farmers. So you find that there is no enough water. You cannot expect the stream now to supply us with enough water. There is very little water.

M: And do you, with the catchments, you don't really work with the catchment management?

CW: No we don't , we have the WRMA to do that.

M: Do you work with the WRUAs, the water resource user associations?

CW: We don't work with them, they just give us reports. In case they need any information we just provide them.

M: Ok, so this water you take from Dembwa, you have a treatment plant?

CW: Exactly, just right there some 300 meters from the source, we have a treatment plant there?

M: So what is in brief the treatment process that goes on there?

CW: It's a full treatment water plant. We have aluminum sulphate and sodium carbonate, we have chlorine and we have testing templates. It's a full treatment water supply.

M: and would you say that the quality of the water is generally good?

CW: Yeah , generally good.

M: You have one main pipeline?

CW: We have... in fact this water supply, has been overtaken by events. Because the projection, it was constructed in 1972. So you can see now the projection period has gone over. So right now, TAVEVO has come up with another rehabilitation process. They have constructed a new pipeline, from a place called Kipusi there to Mwatate, so that the water can be supplied right from the treatment works to the storage tanks and then supply to the consumers. Unlike previously.. { A man came to complain about garbage collection, people not collecting garbage, though he has paid.}

So you can see, previously the main pipeline we had a system known as dead-end , distribution like system, whereby the mainline is where the people tap water from that mainline. So you find that finally it cannot reach to the far points. So we are now trying to reconstruct from that system to other system of supplying the water to the storage tanks and then we distribute from the storage tanks.

M: Yeah , because I've seen that there are few water points along that road, that sell water and then they get a lot of water, so the people who don't get water have to go there and buy maybe for more expensive (CW: that is it.). And they're depending on those people, and they just get all the money.

CW: Exactly, that's what we are trying to discourage right now by constructing a mainline after the tank. The pipeline is already in place, only that now during this dry spell, we are experiencing a lot of problem due to the fact of catchment area destruction. So we have really a problem. Even , two days ago water was not reaching there, where you saw people buying water , it wasn't reaching there. It was very little, it could not reach there. So you can imagine now, people were tracking to the intake, to draw water from the intake. So when they go to the intake now, you won't get even a drop which goes to the treatment works.

....