LEGITIMIZING INEQUALITY
A political ecology of water in the Waterberg, South Africa

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A political ecology of water in the Waterberg, South Africa

HET LEGITIMEREN VAN ONGELIJKHEID
Een politieke ecologie van water in de Waterberg, een gebied in Zuid-Afrika

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Contents

List of Maps, Tables, Pictures and Appendices

Acronyms

ANC	African National Congress
CMA	Catchment Management Agency
DPLG	Department of Provincial and Local Government
DWA	Department of Water Affairs
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
ELU	Existing Lawful Use
EWT	Endangered Wildlife Trust
FBW	Free Basic Water
GBP	British Pound
GRIP	Groundwater Resource Information Project
GWCA	Government Water Control Area
HDI	Historically Disadvantaged Individual
IWRM	Integrated Water Resource Management
MCWAP	Mokolo Crocodile (West) Water Augmentation Project
MLM	Modimolle Local Municipality
NAR	National Archives Repository
NGO	Non-Governmental Organization
NIE	New Institutional Economics
NPM	New Public Management
NWRS	National Water Resource Strategy
RDP	Reconstruction and Development Programme
TAU	Transvaal Agricultural Union
USD	United States Dollar
WAR	Water Allocation Reform
WARMS	Water Authorisation and Registration Management System

WB	World Bank
WBR	Waterberg Biosphere Reserve
WfW	Working for Water
WMA	Water Management Area
WNC	Waterberg Nature Conservancy
WRC	Water Research Commission
WRSA	Wildlife Ranching South Africa
WUA	Water User Association
WWS	Waterberg Welfare Society
ZAR	South African Rand / Zuid-Afrikaansche Republiek

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Abstract

This dissertation is about inequality in water access in former 'white' rural South Africa. It advances two major arguments. First, water inequality has largely been normalized and naturalized in the post-apartheid order. Second, instead of being only a legacy of colonialism and apartheid, water inequality is being continuously reproduced as a result of contemporary processes of neoliberal accumulation, both private and public. As a political ecology analysis, this thesis questions discourses of an imminent and 'natural' water scarcity crisis, by showing how scarcity is produced in a context of abundance of resources and causes racialized dispossession. Moreover, it rejects the narrative of a service delivery crisis, by demonstrating how water access is embedded in a system of power relations that transcend the working of local government and its supposed failures. Instead, the land-water nexus emerges as crucial, meaning that access to water ultimately depends upon access to land and is mediated through private property rights.

My arguments are based on a specific historico-geographical context, namely the Waterberg plateau in the northern province of Limpopo, where I have conducted one year of ethnographic fieldwork. The Waterberg used to be a 'white' farmland growing crops and livestock, whereas now it has mostly converted to wildlife-based production via private conservation activities, such as game farms and private nature reserves. Following this and other agrarian changes, farm workers and dwellers have been relocating forcibly or voluntarily from the farms to the small rural town of Vaalwater. Here, however, they lack continuous and secure access to water. This dissertation contends that this particular segment of the black rural poor has become surplus both to the needs of capital in the new conservationist mode of production and to the politics of place of white landowners. Thus, they have been abandoned by the state, which refuses to reallocate additional resources from productive uses to water service provision in town.

In developing my arguments, I start from the history of the Waterberg's waterscape, which shows a number of continuities among the colonial, apartheid, and post-apartheid periods. After that, I situate the local water problems within the broader context of the South African water reform. Although the

reform aims to redress past racial discrimination in access to water, redistribution is fundamentally constrained by several structural elements. For instance, white commercial farmers maintain exclusive control over 'their' water resources. As a result, they continue to employ millions of litres of water every day, whereas town residents cannot satisfy their most basic water needs.

A central concern of this dissertation is to recognize water inequality, by unravelling the connections between the black town and white farms. And yet, an even more compelling question is how water inequality is being reproduced in contemporary South Africa. I point out two main processes in this regard. First, the simultaneous commodification of both water resources and water services. This contributes to normalize uneven patterns of access to and use of water (along racial and class lines), in that everyone is free to and responsible for participating in the market for water. Second, neoliberal conservation and the tightening of private control over water implicit in that. Nature conservation has largely been absent from the South African water debate. However, not only are game farms and private nature reserves important water users, but also and especially they tend to naturalize water inequality by depicting the Waterberg as an empty wilderness and questioning the presence and water demands of the black poor.

Samenvatting

Dit proefschrift gaat over ongelijkheid in toegang tot water in voormalig 'blank' ruraal Zuid-Afrika. Het bevat twee belangrijke stellingen. In de eerste plaats is ongelijke toegang tot water na het apartheidstijdperk grotendeels genormaliseerd en wordt het als een natuurlijk gegeven voorgesteld. In de tweede plaats is ongelijke toegang tot water niet slechts een erfenis van kolonialisme en apartheid, maar wordt het in stand gehouden door een hedendaags proces van zowel particuliere als openbare neoliberale accumulatie. Vanuit het perspectief van de politieke ecologie wordt in dit proefschrift het discours van een dreigende en natuurlijke crisis door waterschaarste ter discussie gesteld door te laten zien hoe schaarste ontstaat bij een overvloed aan natuurlijke hulpbronnen en hoe het racistische onteigening veroorzaakt. Daarnaast wordt het idee van een crisis in de watervoorziening weersproken door te laten zien dat toegang tot water is ingebed in een systeem van machtsrelaties die het (dis)functioneren van de lokale overheid overstijgen. Het dwarsverband tussen grond en water blijkt de beslissende factor te zijn, wat wil zeggen dat toegang tot water uiteindelijk toegang tot grond vereist en gerealiseerd wordt door particuliere eigendomsrechten.

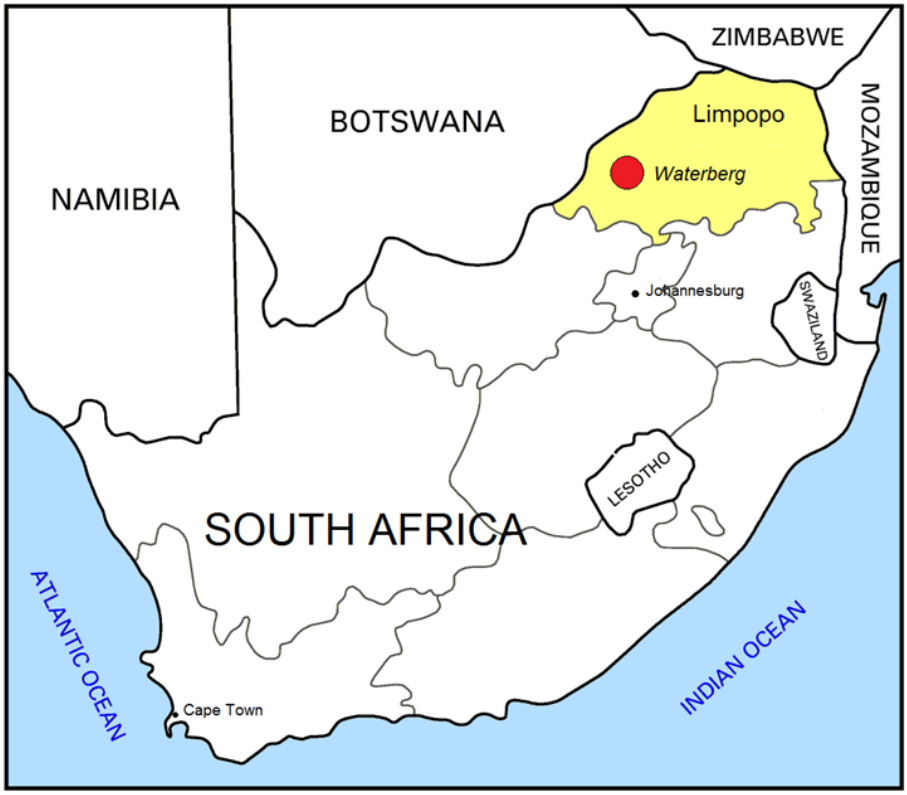
Deze stellingen zijn ontwikkeld binnen een specifieke historisch-geografische context: het Waterberg Plateau in de noordelijke provincie Limpopo, waar een jaar lang etnografisch veldonderzoek is gedaan. De Waterberg was vroeger een gebied met 'blanke' landbouwgrond voor akkerbouw en veeteelt, maar is nu een natuurgebied waar particuliere bedrijven onder andere wildparken en particuliere natuurreservaten exploiteren. Als gevolg van deze en andere agrarische veranderingen zijn landarbeiders en plattelandsbewoners gedwongen of vrijwillig verhuisd van boerderijen naar de kleine plattelandsgemeente Vaalwater. Hier zijn ze echter niet verzekerd van toegang tot water. In dit proefschrift wordt betoogd dat de nieuwe duurzame productiewijze en de *politics of place* van de blanke grondbezitters geen plaats meer bieden aan dit specifieke deel van de arme zwarte plattelandsbevolking. Ze worden daarmee aan hun lot overgelaten door de overheid, die weigert om een deel van de watervoorraden die voor

de productie gebruikt worden aan te wenden voor de watervoorziening in de stad.

Het betoog in dit proefschrift begint bij de geschiedenis van het waterlandschap van de Waterberg, die leert dat een aantal zaken uit de koloniale en apartheidstijd in de periode na de apartheid gelijk is gebleven. Vervolgens worden de lokale waterproblemen geplaatst binnen de bredere context van de waterhervorming in Zuid-Afrika. Hoewel de hervorming bedoeld is om eerdere rassendiscriminatie bij de toegang tot water ongedaan te maken, stuit de herverdeling op een aantal structurele belemmeringen. Zo behouden blanke commerciële boeren bijvoorbeeld de exclusieve zeggenschap over 'hun' watervoorraden. Als gevolg daarvan blijven zij miljoenen liters water per dag verbruiken, terwijl stadsbewoners niet eens kunnen voorzien in de meest elementaire behoeften aan water.

Een kernpunt van dit proefschrift is om ongelijke toegang tot water te erkennen door de verbanden tussen de zwarte stad en de witte boerderijen te ontrafelen. En toch is een nog prangender vraag hoe ongelijke toegang tot water in stand gehouden wordt in het huidige Zuid-Afrika. Hierbij spelen de volgende twee processen een belangrijke rol. Ten eerste de gelijktijdige omvorming van zowel watervoorraden als watervoorziening tot handelswaar. Dit werkt de normalisering van een ongelijk patroon van toegang tot en gebruik van water (op basis van ras en sociale klasse) in de hand, omdat iedereen vrijelijk kan deelnemen aan de markt voor water en daarvoor zelf verantwoordelijk is. Het tweede proces is neoliberaal natuurbehoud en de versterkte particuliere controle over water die dat met zich meebrengt. Natuurbehoud was lange tijd geen onderwerp van het waterdebat in Zuid-Afrika. Wildparken en particuliere natuurreservaten zijn echter niet alleen belangrijke waterverbruikers, maar ze zijn vooral ook geneigd om waterongelijkheid voor te stellen als een natuurlijk gegeven door de Waterberg af te schilderen als een lege wildernis en de aanwezigheid en behoefte aan water van de arme zwarte bevolking in twijfel te trekken.

Map 1 *The Waterberg*



Source: Elaboration of the author based on the 1: 700 000 map Limpopo (Chief Directorate: Surveys and Mapping, Cape Town, 2001)

***Map 2** Vaalwater and the Waterberg plateau*

Source: Elaboration of the author based on the 1: 500 000 map 2326 Polokwane (Chief Directorate: Surveys and Mapping, Cape Town, 2001) — Current scale of 1: 1 000 000

1 Introduction

> What a painful paradox it would be if, after decades of struggle and sacrifice, we succeeded in doing what apartheid could never do – legitimizing inequality. It would continue as before but would be regarded as natural, or, worse still, as the fault of the disadvantaged. (Sachs 1992: 103)

In line with former Constitutional Court Justice Sachs' concern, post-apartheid South Africa is currently witnessing the normalization of water inequality, rather than its problematization and effective action to address it. This is the first main argument that this dissertation aims to make. To be sure, this sounds rather contradictory considering that both water and inequality represent top priority issues for the African National Congress (ANC) government. For instance, water and sanitation figure among the so-called 'Nine-Point Plan' launched by President Jacob Zuma in 2015 to boost economic growth and create jobs. Moreover, reducing inequality is the second main objective of the National Development Plan 2030.[1] And yet, as it will be shown, the way these issues are dealt with in practice seems to have adverse effects on social equity, in that dispossession of the poor (a category largely overlapping with that of blacks) is not only on the increase, but also legitimized. In addition to recognizing water injustice as a defining feature of the post-apartheid order, this dissertation aims to theorize and empirically show why inequality in access to water is currently being reproduced. This leads to the second main argument, namely that water inequality is not only a legacy of colonialism and apartheid, but also a necessary consequence of processes of neoliberal accumulation, both private (such as in the case of neoliberal conservation) and public (that is to say, the development path chosen by the ANC).

Since 1994, water access has received much public attention in South Africa. However, this has been framed within discourses of scarcity, which have offered a strong justification for the persistence of water poverty for some. In particular, the Department of Water and Sanitation (DWS) has depicted water scarcity (based on average rainfall) as a 'natural' condition

affecting the whole country. Indeed, very recently, in late 2015, all of Southern Africa has been hit by a severe drought induced by the cyclical weather phenomenon known as El Niño. According to the United Nations Food and Agricultural Organization, the rainy season between November 2015 and March 2016 has been the driest over the past 35 years, with serious repercussions on livestock and crop production (especially maize). In South Africa, five out of nine provinces (namely, Free State, KwaZulu-Natal, Limpopo, Mpumalanga, and North West) have been declared drought disaster areas. To mark the gravity of the situation, in April 2016 the DWS outreach campaign shifted its focus from the hashtag #SaveWater to #PrayerforRain. During a parliamentary debate, the Minister of Water and Sanitation, Ms Nomvula Mokonyane, defended the department's conduct from the opposition's accusations of 'apathy' and firmly embedded the drought within the 'realities of climate change', adding that 'droughts know no politics, no colour' (SABC Digital News 2016). The Minister's remark seems to echo the position of her newly found ally and renowned South African water expert Anthony Turton. Turton (2015) believes in the theory of limits to economic growth based on population growth exceeding water supply and he argues that by ignoring the 'hydrological realities' of the country in favour of the 'politicization' of the water sector, the government has accelerated a 'water crisis of epic proportions'.[2]

Contrary to these apolitical discourses of water crisis, this dissertation focuses on the politics of the everyday that produces scarcity in a context of abundance, and that dispossesses some and not others. Moreover, it will show that race matters, in that it is almost exclusively black people who lack access to water.

The arguments advanced in this thesis are based on the study of a specific and rather unexplored 'hydrosocial territory', defined by Boelens and colleagues as a 'socially, naturally and politically constituted space that [is] (re)created through the interactions amongst human practices, water flows, hydraulic technologies, biophysical elements, socio-economic structures and cultural-political institutions' (Boelens et al. 2016: 1). This hydrosocial territory is the Waterberg plateau, a large tract of mountainous Bushveld[3] in the northern province of Limpopo, with a single small rural town in the middle named Vaalwater (see Map 2). Following its European colonization in the mid-nineteenth century, the plateau was transformed from a remote frontier into an agricultural district of the Transvaal state

and later province, although it remained quite a poor and backward piece of 'white' farmland throughout the colonial and apartheid periods. Since the 1980s, white landowners have started to 'reinvent' the Waterberg as a conservation area by converting crop and cattle farms into game farms and private nature reserves. The 'pristine' conditions of the Lephalala River system provided initial impetus to the conversion process. In this way, the focus of capital accumulation has shifted from commercial agriculture to wildlife-based production (Snijders 2012). At the same time, and in apparent tension with the objective of nature conservation, an accumulation strategy based on the exploitation of mineral resources is also currently being developed in the Waterberg, some 100 km north of Vaalwater. It is the construction of one of the biggest coal-fired power stations in the southern hemisphere, Medupi. In order to meet Medupi's estimated water needs, DWS has started a mega project (costing more than 2 billion of South African Rands, ZAR)[4] aimed at developing the water infrastructure within the major catchment on the plateau, the Mokolo.[5]

The plateau's residents can be broadly distinguished into white landowners and black (former) farm workers. In fact, notwithstanding the local conservationists' infatuation with the language of political transformation, the political economic changes of the last 30 years have not altered the place's fundamental political and economic structures. For instance, ownership of the land remains firmly in a few white hands, whereas the black majority constitutes a reserve of unskilled and increasingly unneeded labour. Generally, whites live on large private farms, whereas blacks concentrate in the small post-apartheid township of Leseding, next to Vaalwater, where their presence remains somewhat concealed. Not all landowners are residents of the Waterberg though. Some of them are business persons, either South African or foreign, who purchased a farm to invest in the land and visit their property occasionally, if ever. Most of those who reside permanently on private farms do so because their livelihoods depend on the land, such as tobacco and cattle farmers, game farmers, and hunting and ecotourism operators. At the same time, the Waterberg is becoming popular among national and international wealthy elites who, after taking an early retirement, seek to enact a colonial ideal of nature as 'wilderness' cleared of human presence, thus reproducing a global trend whereby the wealthy aim at recreating a 'pristine' nature (Adams 2003).

Seen from a water perspective, the Waterberg is not exempt from climatic extremes such as the recent drought. For instance, in March 2014, several areas of the plateau were badly flooded by heavy rains that caused roads to be washed out and dams to collapse. Nonetheless, in 'normal' years, the area receives more rainfall than the country's average and its surface and underground resources are able to support both a residual agricultural sector (water intensive) and a growing wildlife sector (whose water uses are called into question and discussed in this dissertation) on the plateau, plus an expanding mineral and energy sector below the plateau. Notwithstanding the availability of water resources in the region as a whole, since the early 2000s Vaalwater has experienced severe and sustained water shortages. Indeed, as the town has grown following the relocation of black people from white farms, no redistribution of water resources aimed at sustaining water service provision has taken place. Therefore, access to water has become a crucial site of power relations among landowners, local and national authorities, and town residents.

This dissertation contributes a political ecology of water by looking at those power relations through which water resources in the Waterberg are produced and distributed. It seeks to answer, amongst others, who controls water and for what purposes? Moreover, it aims at countering the interpretation of water poverty captured by images of empty buckets 'queuing' at communal taps in Leseding (which has now become a common representation of rural water supply across the whole country) as a 'natural' feature of the South African landscape (as argued by some wealthy landowners). There is nothing 'natural', or for that matter just, about black township residents having to make do (when water actually comes out of the tap) with about 30 litres per person per day,[6] whereas white farmers and their guests (but not their labourers) use up to 13 times as much, 400 litres per person per day. And yet, the naturalization of water inequality (the meaning of which will be explored in the course of the dissertation) is strongly reinforced by the water commodification entrenched during the post-apartheid order. So much so, indeed, that social equity is believed to be 'naturally' achieved by allowing everyone to participate in the water market. Or, at the very least, by promising that everyone will benefit from the economic growth deriving from an accumulation strategy based on water.

1.1 Research objectives

The water question in post-apartheid South Africa has fundamentally centred on the provision of water *services* to blacks and in particular to the black poor. At the dawn of democracy, in fact, the ANC understood water access as a 'material emblem of citizenship' (Bakker 2003), or a symbol of political inclusion (ANC 1994). The ways in which water services were extended to previously disenfranchised citizens has received considerable attention within critical scholarship in geography, politics, and development studies (Bond 2000a, 2010; Bond and Dugard 2008; Desai and Pithouse 2004; Dugard 2010; Hart 2014; Loftus 2006, 2007, 2009; McDonald and Pape 2002; McDonald and Ruiters 2005; McDonald and Smith 2004; Smith and Hanson 2003; Smith 2004). These authors, among others, have engaged with the neoliberalization of water service provision (through privatization and commercialization) mostly in urban spaces and analysed its social consequences on people living at the physical and symbolic margins of these spaces (such as in townships and informal settlements). It has been pointed out how structural conditions of poverty and inequality prevent the majority of citizens from securing access to water via market exchange. Furthermore, the issue of water access has been examined as a terrain of biopower where the post-apartheid state disciplines and regulates the poor (Loftus 2006, von Schnitzler 2008).

Despite the fact that access to water appears even more unequal than access to land (Cullis and van Koppen 2007), the question of how the country's water *resources* have been redistributed in the new order with the aim to redress historical inequalities has received much less attention in the literature. Notable exceptions are Movik (2012, 2014; Movik et al. 2016), Schreiner (Schreiner and Hassan 2011, Schreiner and van Koppen 2002), Tapela (2008), van Koppen (Liebrand et al. 2012; Mapedza et al. 2016; van Koppen and Schreiner 2014a, 2014b; van Koppen et al. 2014), and Woodhouse (2012b). These authors focus on access to and uses of water in rural South Africa, especially within the context of agriculture.

However, a research gap has emerged not only in that water resources have been largely overlooked vis-à-vis water services, but especially in that the relation between domestic and productive uses of water has been ill addressed. This dissertation fills this latter gap by looking at power relations across the domestic/productive divide. It is argued that in a rural

place such as the Waterberg, water scarcity in the context of water service provision is fundamentally related to water resources exploitation in the context of agricultural and wildlife production. This is not to say that the former is caused by the latter, though. The point of this dissertation is not to establish direct relations of causation, but rather to show how water shortages in Vaalwater are deeply embedded in a system of social relations of power and production that transcends the boundaries of the town. In other words, domestic and productive uses of water shape the plateau as a single, yet uneven space.

For this reason, the research strategy employed in this work consisted in 'following the water' (Arsel and Spoor 2010) through Vaalwater town and the private farms occupying most of the plateau's land and searching for connections, with a special focus on understanding inequality. This was often questioned by research participants for reasons that seem to touch upon one of the most enduring legacies of apartheid (and also its very foundation), namely the idea of separateness. White landowners, in particular, conceive the space of the town and that of the farm as worlds apart. As a result, they argue that the solution to water problems in Vaalwater must come from the 'black' municipality (very much in the same way as during apartheid the provision of essential public services to blacks was left to traditional authorities in the Bantustans)[7] and must not affect their own water supply. If town residents are not receiving water, the landowners' argument goes, it is because the municipality is inherently inefficient and indeed it should not have allowed a mass of destitute people to settle in a place without 'adequate' resources in the first place.

The main research question that drove this research can therefore be formulated as follows: How is inequality of access to and use of water produced and legitimized in the Waterberg plateau of South Africa?

1.2 Scope and contribution of the study

The framework of my analysis of water inequality in contemporary South Africa rests on a number of theoretical debates. This section introduces the major concepts that the arguments put forward in this dissertation build on and contribute to further develop. The starting point is the interdisciplinary field of political ecology, namely the study of how power and politics influence access to, use, and understanding of the environment.

Political ecology is characterized by a number of common assumptions that need to be made explicit from the beginning. First, the nature/society dualism that has become ordinary under capitalism is rejected and environmental change is fundamentally linked to human behaviour (Moore 2015, Smith 2010). Second, humans-environment relations are seen as inherently political in that they are mediated by (unequal) power relations. Third, ecological relations and environmental change produce costs and benefits that are unequally distributed among social groups, such as class, race, gender, and other socially constructed categories. Fourth, under the influence of post-structuralism, the notion of power incorporates both a material and discursive dimension. Fifth, a historical approach helps question ideas of nature as 'an unproblematic universal category, an arena of natural laws' (Paulson and Gezon 2005: 29). History matters in that it shows how specific patterns of access to and uses of resources derive from contextual systems of power and as such represent 'contingent outcomes', rather than 'natural' and inevitable conditions. Finally, the view according to which both causes and solutions to socio-environmental problems must be locally based is criticized and emphasis is given instead to explaining variables operating across different levels and scales.

Among the numerous research themes addressed from a political ecology perspective, the interest shown in water has led to the emergence of a distinct political ecologies of water sub-field (Bakker 2003; Budds 2004; Loftus 2007, 2009; Loftus and McDonald 2001; Smith and Ruiters 2006; Swyngedouw 2004, 2015). Water privatization, or the assignment of private property rights over previously publicly or communally owned water infrastructure, has represented a major concern within this sub-field (Bakker 2003, 2013; McDonald and Ruiters 2005; Page 2005). In turn, case studies of privatized water supply across the Global North and South have contributed to the emergence of a debate on the so-called 'neoliberalization of nature', namely the study of the specific relationships between neoliberal capitalism[8] and the environment (Bakker 2010; Braun and Castree 1998; Castree 2008a, 2008b, 2011; Castree and Braun 2001; Harvey 1996; Heynen et al. 2007; McCarthy and Prudham 2004). This debate has centred on capital appropriation of nature through the process of commodification, whereby 'qualitatively distinct things are rendered equivalent and saleable through the medium of money' for the purpose of accumulation (Castree 2003: 278). As noted by Castree (Ibid.) and Bakker (2010), the

materiality of natural resources is likely to affect the way in which commodification operates. For instance, Bakker (2003, 2007) has argued that water supply turns out to be an 'uncooperative commodity' because of its fluidity, which makes it difficult to be controlled under a private property regime, and its density, which makes it expensive to be transported and therefore conducive to monopoly rather than competition of suppliers. Moreover, it is problematic to value water in such a way that its price reflects its actual cost of production, including environmental (i.e. pollution) and social (i.e. public health) externalities. And yet, this dissertation questions, at least in part, Bakker's argument by showing that in the Waterberg the conversion of water resources (as opposed to water services) into a commodity is facilitated by their particular conditions of production. Firstly, private ownership of water has historically been embedded into land ownership. Secondly, the absence of state-owned waterworks makes private abstraction from several landowners located around Vaalwater necessary. The price at which water is exchanged between private producers and the state appears to be set by the former, rather than by demand and supply. However, in doing so, landowners do not need to cap their profit (or rent) by taking into consideration social externalities, since they do not sell directly to citizens and in any event are not accountable to them.

The relationships between water and power represent another important theme within political ecologies of water. According to Loftus (2009: 954),

> in recent years there has been a noticeable move between the study of how the distribution of water has been shaped by relations of power and an analysis of how water *itself* shapes those relations. […] Thus, not only does work on the political ecology of water have something to say about the production of the world water crisis, it also opens up new understandings of political ecologies of power.

How then is power conceptualized in this dissertation and how can a political ecology of water in the Waterberg contribute to our understanding of the working of power? I make three points in this regard. First, in line with traditional views on power as the ability to take decisions that influence what people can and cannot do (Lukes 2005), at the national level the ANC government (through DWS) holds the power to allocate water re-

sources among different users and, by exercising it, it promotes both public and private accumulation. Here, the discourse of scarcity is employed as a 'regime of truth' (Foucault 1991) to provide legitimacy for government action. Second, state power over water is shared at the local level with white commercial farmers, who retain a right of seizure based on their ownership of the land. Third, following Foucault's theorization of power as 'governmentality' (Ekers and Loftus 2008, Foucault 2007, 2008, Lemke 2001, Cisney and Morar 2016), a diffuse form of rule that operates internally to the individual and constitutes her as a subject, state power also manifests itself through 'technologies of the self', by transforming access to water into a matter of individual responsibility. In accordance with what Foucault refers to as neoliberal governmentality, responsibility becomes here equated with economic rationality, as the market turns into the organizing principle of water supply. At this point, it is important to add that the notion of governmentality is fundamentally related to those of 'biopower' (a power that takes control of the body and life) and 'biopolitics' (a technology of power based on regulation and targeting the whole population) and as such, to the argument that the norm prevails over the law as instrument of government (Foucault 1998). For instance, in the Waterberg (like in the rest of the country), it has become 'normal' that water access is regulated through market exchanges and that the poor limit their consumption to minimum amounts of the resource (i.e. up to 25 litres per person per day).

Access to a safe and reliable source of water would obviously fall within the scope of biopower as a power to 'foster life', and yet some residents of the Waterberg are structurally excluded from it.[9] By unravelling who they are and why this is happening, this dissertation intersects with and contributes to the debate on 'surplus populations' (du Toit and Neves 2014; Ferguson 2015; Li 2010, 2011). This term belongs to the Marxist tradition, although its actual meaning has changed from that of a 'disposable industrial reserve army' (Marx 1990: 784). For instance, Li (2010, 2011) employs it within the context of 'truncated agrarian transitions', to indicate those people who are dispossessed of the land and other means of production, but cannot find employment outside agriculture. In other words, their labour has become genuinely surplus to the needs of capital and for this reason, Li (2010: 67) argues, they are compelled 'to lead short and limited lives'.

In South Africa, 'surplus people' is certainly a loaded phrase. Traditionally, it has been used to capture the forced relocation of millions of black people from a supposedly 'white' country to Bantustans within the context of the apartheid policy of separate development (Platzky and Walker 1985). From an economic perspective, Bantustans functioned in the same way as Marx's labour reserves, to support a system of migrant labour, but also to accommodate unskilled workers (including disabled and children), who were not expected to enter the waged labour market following the mechanization of agriculture, mining, and industry. Recently, however, the term surplus people has been used with regard to the position of farm workers and dwellers in the post-apartheid order (Hall et al. 2013, Spierenburg and Brooks 2014). Not only in fact were the largest number of black people forcibly removed during apartheid from 'white' rural areas, but farm evictions have largely continued between the late years of apartheid and early years of democracy (Wegerif et al. 2005). Labour casualization and land-use change (such as the conversion from traditional farming activities to nature conservation) appear as the major reasons why farm labour has become redundant to the needs of agricultural capital.

du Toit and Neves (2014) question the idea that farm workers and other unemployed, underemployed, and working poor (together making up a 'marginal working class', Seekings and Nattrass 2005) have been abandoned by the state, arguing instead for their 'differential incorporation'. This means that while, on the one hand, this subset of the population is economically marginal, on the other hand it is politically central (at least, as long as the ANC keeps sustaining that it represents the interests of the poor). For this reason, du Toit and Neves (2014) interpret the social protection policy introduced by the government in the early 2000s as a biopolitics of poverty, based on knowledge production and 'make live' investments (i.e. cash transfers). Yet, the authors note that the new distributional regime is resting on the so-called 'citizen-worker nexus'. In other words, full employment is assumed to be feasible (notwithstanding a 25 per cent unemployment rate, (Stats SA 2016) and only those who cannot work (such as the elderly, disabled, and children) are entitled to social protection – the rest must find a job and become self-sufficient.

Notwithstanding the cautious optimism about the new politics of redistribution (Ferguson 2015), this dissertation demonstrates that access to water has been largely excluded from it. The surplus population of the

Waterberg is de facto being 'let die', as it tries to survive on residual and minimal water resources. This is not accidental though. The marginal working class of the plateau is being (re)dispossessed of access to water as the state allocates those resources that would greatly improve their living conditions to more productive uses (a fuller account of this as a form of biopolitical violence is found in Marcatelli and Büscher under submission).

Race plays an important role in the dispossession of access to water, in that it is almost exclusively blacks who experience it. This dissertation draws on the long-standing debate about the relationship between race and class in South Africa that developed from a political economy (Wolpe 1972, 1990) and social history (Marks and Trapido 1987) perspective. Notwithstanding important differences between these two lines of thought, the main idea is that segregation and apartheid served to reinforce the exploitation of black cheap labour, so that the apartheid state is better understood as a racial capitalist order (Sitas 2007). And yet, this thesis shows that in the Waterberg race articulates not only with the economic position of farm workers and their descendants as a black marginal working class that has become surplus to white capital, but also with their cultural position as a social group that is unwanted within a particular politics of place (Elmhirst 2001). This has to do with the project of belonging of white residents on the plateau and its being founded on certain ideas and practices of nature (Büscher 2016, Hughes 2010). Following Hughes' (2010) description of racism at the 'intersection of white identity and ecological concern' as 'Other disregarding', the relocation of blacks from private farms to the township (that is, emptying the bush of a specific human presence) allows whites to ignore their water needs as well as to deny that dispossession is being perpetuated.

As it should be clear by now, in order to fully grasp what a political ecology of water in rural South Africa entails, one cannot neglect land, as access to and use of these two resources are profoundly intertwined. In this sense, this dissertation provides new insights into the so-called 'land-water nexus'. This term has emerged within the literature on resource grabbing (Mehta et al. 2012, Tejada and Rist under submission, Woodhouse 2012a) with the aim to highlight the interconnections between land and water as they were made visible by the consequences of large land deals. In the Waterberg, the nexus is most evident in the overlap of property right regimes over water resources, to the effect that while the latter

have now become part of the national commons, white commercial farmers retain an exclusive claim to benefit from them in virtue of their private ownership of the land. Furthermore, as noted above, the lack of state-owned water infrastructure results in all water abstraction occurring on private grounds. The omnipresent fences delimiting private farms on the plateau serve as powerful reminder that landowners control not only the land, but also everything to be found above or under it. At first sight, it would appear that in the Waterberg property is the only relation that matters when it comes to water access, *contra* Ribot and Peluso's (2003) theory of access, according to which rights are one among many 'bundles of power' that shape someone's ability to benefit from natural resources. And yet, another important social relation (again, founded on land) is labour. Although decreasing and mostly temporary, job opportunities on the plateau are still to be found on farms. Here, workers who lack secure water access at home, in the township, can benefit indirectly from the resource (as a factor of production) by means of working the land and receiving a salary for that – eventually to be used to buy water services from the municipality.

Finally, the research themes of water and inequality also ground this dissertation within the broader and interdisciplinary tradition of development studies. In particular, it is useful to highlight three aspects of the research on which this dissertation is based, which follow the recent contribution by Arsel and Dasgupta (2015) on the state of this field of enquiry. First, the focus is on socio-environmental relations, which have emerged as one of the main questions addressed by development scholars, while political ecology has appeared as a fruitful method of inquiry. Second, a critical political economy approach is applied to the study of local dynamics of neoliberal accumulation and structural causes of poverty and inequality are put in relation to such dynamics. Third, this work engages with social justice and change to the extent that it argues for material improvements (in the form of reliable access to more than minimum amounts of water) in the lived experience of the poor. Surely my main arguments are based on a local place such as the Waterberg. However, by drawing connections with the national and international level, hopefully this dissertation avoids the risk of being qualified as one of those 'micro-level studies, often making use of what mistakenly came to be known as "ethnographic methods", [that] became the norm in the field' and are characterized by

'hard-hitting yet sterile, repetitive and aprioristic critiques of neoliberal capitalism that document the plight of the poor and marginalized in the developing world, [but prove] unwilling and unable to articulate a constructive agenda for development' (Ibid.: 646).

1.3 Research methodology

This research was mainly qualitative and grounded in an ethnographic approach to the collection and interpretation (hence, production) of data. The latter were generated over the course of three periods of fieldwork starting in 2013 and ending in 2015. A combination of social research methods (namely, participant observation, structured and semi-structured interviews, document analysis) was employed to answer the research question. Furthermore, reflexivity was practiced as a strategy both to make this work accountable and to shed light on the research context.

1.3.1 Ethnographic approach

I am not an anthropologist by training nor was it my ambition to write an ethnography of water in the Waterberg. Instead, the focus of this dissertation remains on the political ecology of water intended as the study of local power relations around water allocation and how they relate to broader political and economic structures (i.e. capitalism and neoliberalism), rather than on the production of meanings around water. Nevertheless, three main assumptions define the ethnographic approach employed in this research. First, the interpretation of primary data did not wait until after the fieldwork, but started in the field and as a result, it directed the following phases of data collection. In this way, the process of data generation was allowed to test the relevance of the initial research question(s) and ultimately to make changes in the original research design.

Second, this research did not aim at grasping an objective and universal 'truth' about the problem under investigation, but rather at 'diagnosing' (Olivier de Sardan 2005) a complex situation by looking for differences, variations, and nuances (especially in people's perceptions and often 'giving voice' to those marginalized) and providing a detailed account of them, thus valuing complexity over simplistic and linear explanations of social processes. For this reason, I became alert to respondents

answering questions with something along the lines of 'you must understand that the *true* reason why' and openly critical of conventional explanations centring on certain elements, while completely overlooking others. Following Haraway's (1988) notion of 'situated knowledges', all the research participants' (including mine) understanding was considered as necessarily partial, located, and embodied. In consequence, the decision to reside in the Waterberg for one year was made in order to become familiar with the research context and try to unravel how this place (intended as a system of social relations) influenced what people thought about the research topic.

Finally, reflexivity was practiced throughout the entire research process. The purpose of this exercise was twofold. On the one hand, it helped clarify the extent to which the research findings were influenced by my identity as a white, female, European, graduate student. On the other hand, by reflecting upon personal and working challenges in the field, I produced new knowledge about the research context and participants, which in turn illuminated some aspects of the research question.

1.3.2 Fieldwork

Between 2013 and 2015, I conducted a total of 16 months of fieldwork in South Africa, divided into three periods. In February 2013, a one-month preliminary fieldwork trip was carried out with the aim of visiting three sites that had tentatively been selected as potential case studies for this research.[10] During the course of this trip, one week was spent between Modimolle (a town 60 km to the south of Vaalwater) and Vaalwater. Here, I conducted exploratory interviews with the local and district municipalities and attended a Waterberg Nature Conservancy (WNC) meeting, thus making these local institutions my first points of entry into the field.

In August 2013, I went back to the Waterberg and stayed for 12 months. During this period, I lived in a one-room thatched-roof cottage within a small property (about 15 ha) 30 km outside Vaalwater. The land was owned by a white, mixed (English- and Afrikaans-speaking) couple, who lived in the main house hundred meters from the cottage. Although this choice of accommodation was mainly determined by the limited number of responses to my advertisement (published in the WNC newsletter) and subsequently by affordability concerns, it clearly affected the research

process. Before making explicit how, the selection of multiple field sites (Marcus 1995, 1998) needs to be explained.

Although the whole Waterberg plateau (an area of about 14,300 km^2 delimited by the escarpment) can be considered as my general research field, the selection of specific places to visit for the purpose of data collection was narrowed down to a loosely defined 'Vaalwater area' (about 6,500 km^2), comprising the town itself and those farms that were depending on it for a number of services (from selling their produce to hiring their labour, from buying their groceries to dumping their waste).[11] This choice was made for reasons of convenience and yet it implied that to travel between sites (in a second-hand Suzuki Jimny 4x4 that from the very beginning turned out to be an essential research tool) still took quite a lot of time, especially since there are only three tarred roads (among countless dirt roads) in the Waterberg. By exploring and mapping this space, I soon realized that besides the wire fences delimiting private properties, there were other 'invisible' boundaries separating different 'communities' living in the area. The border dividing the black township of Leseding from the rest of Vaalwater 'proper' (intended as the former white town) was perhaps the most apparent, but by no means the only one. This mapping of places was therefore applied to the construction of the research population, which resulted composed of the following categories: Vaalwater residents (in turn subdivided into suburb and township residents); irrigation farmers (that is, crop and cattle farmers clustered along the Mokolo River and partly the Melkrivier); game farmers/owners of private nature reserves (scattered across the plateau). This choice proved to make sense in that water access and use were clearly dependent upon residential and land use patterns.

Since my research interest went beyond one particular group of people living on the plateau to rather unravel the interactions among them (the very idea of which was fiercely opposed by some participants), my choice of a home turned out to be strategic to the extent that it did not identify me with any of these groups and allowed me to keep some distance from the field sites.[12] At the same time, however, I missed the opportunity to immerse myself in any of these 'communities' and to know them in depth. Nevertheless, there was one particular aspect related to the social context of the Waterberg that I continuously experienced and gained knowledge of, namely the 'white farm' being a securitized space. Materially, this meant

learning how to adapt to a place made of wire fences, burglar bars, security gates, alarms, and firearms. Most notably, however, it implied learning how to inhabit the night. Usually, sunset signified the moment to cease outdoor activities and lock women and children inside the house. Instead, men were allowed to go out on patrols, usually self-organized among neighbours within a specific area of the plateau. Being outside was perceived as potentially dangerous, but so was being at home. As much as this feeling of insecurity became concrete at times, I firmly believe that the very idea that the context of the farm could be harmful to my person (in other words, that me rather than the property could be attacked) largely derived from the social construction of a generalized 'black threat' reminiscent of apartheid narratives.

From a water perspective, living on a farm prevented me from fully empathizing with town and township residents. In fact, I never experienced a single water shortage during my one-year stay. Instead, water abstraction from a borehole looked quite a simple process. Moreover, it became clear how access to a reliable source of water could be transformed into an 'entrepreneurial opportunity' and contribute to a family's livelihoods. For instance, my landlady grew vegetables through hydroponics and sold them in Lephalale. In her own perception, she was not a farmer (to be sure, most of the manual labour was performed by her domestic workers and she had not applied for a water licence), but rather a businesswoman, who was proud to be able to contribute to the family's income.

A few additional field sites were selected beyond the Vaalwater area and the Waterberg plateau. First, I travelled regularly to Modimolle, where the main offices of the local municipality are located. Second, I made one trip to Polokwane (capital of Limpopo Province), where DWS has its provincial office. Finally, I made several trips to Pretoria, for the purpose of visiting the DWS head office and the National Archives Repository.

In September 2015, I went back to South Africa for a three-month follow-up fieldwork trip. Since that coincided with the writing phase of my PhD, I appreciated the opportunity to have access to a reliable internet connection and a library. For this reason, I chose to stay in Johannesburg, where an academic affiliation with the Wits Institute for Social and Eco-

nomic Research (WISER) of the University of the Witwatersrand was arranged. During this period, two trips of one week each were made to the Waterberg.

1.3.3 Research methods

Data for this research were generated through a combination of methods, such as participant observation, structured and semi-structured interviews, and document analysis. Participant observation in the Vaalwater area was especially aimed at expanding the knowledge of the research context. For this reason, I engaged in a number of social interactions (from having lunch with acquaintances to attending the WNC general meetings, from going to church on Sundays to spending the weekend on a game farm) that, although not directly related to the research topic, would help place practices and ideas regarding water within a broader social framework. In addition, I attended official meetings that would specifically focus on water-related issues both at the local level (organized by Modimolle Local Municipality, MLM) and at the national level (organized by DWS).

Information on water access and uses on the plateau was mainly produced by means of interviews. As already noted, the bulk of the respondents consisted of local residents, divided into the following groups: Vaalwater residents (in turn subdivided into suburb and township residents); irrigation farmers; game farmers/owners of private nature reserves. This was aimed at crossing the divide between domestic and productive uses of water as well as that between public water services and private water resources. English was successfully employed as main medium of communication. However, interviews in Vaalwater were conducted with the help of a research assistant and interpreter (Mr Joshua Mabetwa), who would translate from/into English in case a respondent would feel more comfortable speaking Sepedi. In the research design, a double round of interviews was planned. That is to say, firstly I wanted to map the production, distribution, and use of water resources on the plateau by means of structured interviews with about one hundred participants. Secondly, I wanted to examine in depth cross-cutting issues as they emerged from the interpretation of the first data set by means of semi-structured interviews with about half of the same participants. Unfortunately, due to problems of access, this plan was complied with only in Vaalwater. As for farmers/landowners, I only had the opportunity to have one (mixed) interview

with those who had agreed to participate in the research. Nevertheless, a couple of irrigation farmers proved particularly willing to collaborate and for this reason, I visited them two or three times.

Structured interviews were conducted with the support of a questionnaire. The purpose of this research tool was informative, rather than representative. Mainly, it helped map where the water came from, how residents had access to it, and what they used it for. A first draft was discussed with three of the domestic workers on the farm where I lived (whose residence was in the township of Leseding) and with a couple of contacts from WNC (who lived on farms). As it turned out that some of the questions would make little sense in a rural context such as the Waterberg, the questionnaire was revised extensively before starting the interviews. In Vaalwater (including Leseding), respondents were randomly selected. In order to cover an area as large as possible, Joshua and I visited each of the residential subdivisions commonly known in town (for instance, three 'suburbs' in what used to be the white town and six 'extensions' in the black township). Once there, we would agree upon a random criterion that would determine at which house we would stop in order to approach its occupants.[13] Usually, after introducing ourselves and the reason for our visit, we were invited inside, where the questionnaire was filled out in about 20 to 30 minutes.[14]

Semi-structured interviews were conducted with the support of a list of topics that was meant to guide the conversation. Nonetheless, these were left aside when needed in order to follow the respondents' own reasoning and encourage them to tell what they thought was important about the research problem. As a result, different perspectives and contradictions as shaped by the lived experience of the respondents were not minimized, but rather valued and incorporated in the data. In Vaalwater, respondents were selected by means of convenience sampling. Joshua and I discussed together whom we wanted to interview again on the basis of whether someone had shown fond of talking to us or had said something that we found interesting following up with. As a result, we selected 35 participants (5 in the suburbs and 30 in the extensions). Whereas respondents living on crop/cattle farms and game farms/private nature reserves were selected by means of snowball sampling. Ultimately, 20 irrigation farmers and 18 game farmers were chosen (either landowners or property managers). Semi-structured interviews were arranged in advance via phone

or email on a date, time, and place that would be convenient for the respondent. In Vaalwater, Joshua and I would normally go to the respondent's house, while to interview people living on farms I would often travel to their property alone or, more rarely, arrange a meeting at a café in town. Thus, the interview setting would range from an office, to a lounge or kitchen, to a shack. Although I always aimed at talking to one person for at least one hour, I regret that sometimes that was not feasible, as some respondents were too busy, reluctant, or just bored with the questions. As a result, semi-structured interviews lasted for anything between 30 minutes and 2 and a half hours. In principle, I did not make use of a recorder in order to be less intrusive. However, upon obtaining the respondent's consent, the interviews conducted in Leseding were recorded, since they implied some translation and the original words were kept for future reference. Notes jotted down during the actual conversations were then worked out in full interview reports.

Besides local residents, a number of key respondents outside the plateau were also interviewed (following a protocol similar to that described above for semi-structured interviews). First and foremost, I frequently engaged with MLM, which regulates and provides water services to residents in Vaalwater. Second, I met with organizations representing the interests of irrigation and game farmers, such as the Transvaal Agricultural Union and Wildlife Ranching South Africa. Third, I talked to officials from DWS, as the department is ultimately responsible for managing the water resources of the country and for developing water policies. Finally, I made contact with private service providers, which were contracted by DWS to produce data and make policy recommendations in relation to the Waterberg's context. An overview of the interviews conducted during the main and follow-up phases of the fieldwork can be found in Appendix 1.

Data generated through participant observation, structured, and semi-structured interviews were then complemented by documents collected in the field. These would include: data on local water resources; municipal documents (forms, budgets, plans, and sketches of water provision); private contracts signed between landowners and the municipality; letters sent from DWS to irrigation farmers; study of local water uses produced by private consultants; local population statistics; DWS documents regarding plans for water provision at Medupi. Furthermore, archival research at the National Archives Repository in Pretoria was conducted in order to

collect material related to the local history of the Waterberg. The information gathered in the archives was triangulated by means of a few life history interviews (regrettably not very successful) with respondents from Leseding and one crop/cattle farm.

1.3.4 Reflexivity

During the fieldwork, various strategies were employed in order to have access to possible participants from different social groups. For instance, one way of approaching the residents of Leseding was to work as volunteer at the Waterberg Welfare Society (WWS), namely the only NGO based in Vaalwater with programmes on HIV/AIDS prevention and treatment, orphans and vulnerable children support, and gender-based education. Although WWS did not run any project focused on water-related issues, by spending time with staff and participants involved in the gender-based programme 'Ladies with Mission', I made contact with people living in the township and became aware of a number of social issues characterizing the place (from gender-based violence, to alcohol abuse, to HIV/AIDS infection). Also, it was through WWS that I met with my research assistant Joshua. As WWS and Joshua became my gatekeepers in Leseding, accessing the 'community' in the sense of walking around the township and talking to its residents started to be quite easy.

In order to approach possible research participants among the game farmers, I became a regular participant in the activities of WNC. In practice, this implied attending a meeting in town every two months. Since I both introduced my research at the beginning of the fieldwork and presented some preliminary findings before leaving the field in July 2014, they dubbed me 'the water lady' and yet they seemed to find it difficult to understand how and why I would adopt a social perspective to the study of water. Besides meeting members (that is, landowners) at the meeting, I asked the chair whether it would be possible to access their contact list for the purpose of the research. He was sceptical at first (if I was interested in people who did not have water, how would that be useful for me to talk to those who had it?), but eventually agreed to give a copy to me. Finding participants turned out to be not an easy task, though. I made initial contact through email, but had to send several gentle reminders and switch to phone calls before people would reply. Often, this was to tell me that they were too busy to meet and to postpone an interview indefinitely, so that it

usually took months to arrange a visit to a game farm or private nature reserve.

As for irrigation farmers, finding a gatekeeper became a major concern and after four months in the field I had not been able to conduct a single interview with any of them. Physically entering a farm without being invited and receiving detailed driving instruction looked quite challenging, since one may easily trespass or get lost in the bush. Thus, I preferred to wait. After numerous failed attempts to receive assistance from the regional and district offices of the Transvaal Agricultural Union, help finally came in the form of a Pilates-mate,[15] namely a commercial farmer, who just passed me a handwritten list of names and phone numbers. Contrary to game farmers, arranging a meeting with irrigation farmers proved much quicker, as the moment I got hold of them on the phone, they would tell me to see them on the farm that same day or a couple of days after.

Race played a major role in the research process. For instance, after three months in the field I felt that my work in the township was far more advanced that in the other field sites because I had been able to conduct a higher number of interviews. However, later on I reconsidered such opinion and came to realize how my being a white European, who only spoke a few words of Sepedi, was affecting the type of access I was negotiating with the respondents. Surely they were all ready to open their house to me, provide a seat, and answer my questions, but I started to question to what extent I was being able to interest them in the research and touch upon issues that lay beyond the surface. Sometimes, people perceived me as an emissary of the municipality and would not talk freely to me. Other times, they wanted to know how I was going to help them solve their water problems before sharing their knowledge with me. Overall, these shortcomings were reflected in the duration of the interviews with township residents, as they were usually shorter than in other places. Instead, when I met with white landowners of the Waterberg, I could perceive not only their comfort in finding out that the researcher who had made contact with them was a white young woman from Europe, but especially their taking for granted that we could understand each other because we shared a number of assumptions about how things worked in the country (indeed, although I did not share such assumptions, especially when they were overtly racist in character, it was true that I could at least grasp them).[16] As a result, I felt that they talked openly and engaged with me at a deeper level, because

they trusted I would not 'misinterpret' them. This was clearly facilitated by the fact that Joshua did not participate in the interviews with white farmers. Besides affordability concerns (simply put, I did not have enough financial resources to employ a research assistant full time), I was aware that being accompanied by a young black man could possibly influence the kind of answers I would receive and for this reason I decided to go alone.

Another aspect of my identity that became relevant in the research process was my being a graduate student in critical social sciences. It was very interesting to observe how any critical analysis of the political economy of water in the Waterberg was perceived and labelled in categories that were fundamentally political (if not ideological). Indeed, the fact that I talked of 'inequality' and questioned property relations around water immediately made me a 'communist' in the eyes of some respondents. For them, my work was driven by political (as opposed to scientific) reasons and thus, irreparably compromised. At times, it was the very idea of interpreting data that appeared problematic. For instance, at the end of an interview, one participant happened to see an acquaintance of his and thought of introducing us, but warned this other person that 'I had my own ideas about how things worked' (game farm owner, personal interview, 9 May 2014).

1.4 Structure of the thesis

This thesis is composed of seven chapters.

Chapter 2 introduces the Waterberg and its residents by looking at the production of the local waterscape over the colonial, apartheid, and post-apartheid periods. In this way, it offers the first socio-environmental history of a rather forgotten place in the literature. The chapter shows that the current distribution of water resources in the plateau (including scarcity as a spatialized phenomenon in the town of Vaalwater) is the product of a contingent historical process rather than something 'natural'. Furthermore, attention is drawn to specific patterns of continuity whereby the state has historically favoured the water needs of mining and energy production over those of commercial farmers, while completely overlooking those of the local black population.

Chapter 3 takes a step back from the Waterberg to look at the political economy of the post-apartheid water reform and to introduce a number

of concepts and themes that will be addressed in relation to the plateau. The chapter makes two main points. First, white commercial farmers appear to benefit the most from the reform. Second, the redistribution component of the reform privileges accumulation over social equity.

Chapter 4 goes back to the Waterberg to show how the water reform is being implemented on the local level and to analyse current patterns of water access and use from the perspective of inequality. The chapter is particularly concerned with describing water poverty in Vaalwater (and especially in the township of Leseding), of which very little is known. And yet, in explaining why scarcity is produced in Vaalwater, it unpacks a narrative centred on the essential inability of the local municipality to deliver water services and focuses instead on the connections between the town and the private farms surrounding it.

After having recognized water inequality in Chapter 4, Chapter 5 and 6 consider two specific mechanisms through which this is being continuously reproduced in the Waterberg. Chapter 5 focuses on the private vs. public question in relation to water. The chapter shows how inequality is an inherent feature of the Waterberg's waterscape because private ownership of water resources and public provision of water services are complementary aspects of the same process of water commodification. Therefore, it argues that water inequality cannot be seen only as a legacy of colonialism and apartheid, but must be put in relation to contemporary processes of neoliberal accumulation.

Chapter 6 looks at the process of land-use conversion into game farms and private nature reserves as a concrete way in which private control over land and water resources is tightened and shielded from the redistribution process. Although commonly perceived as saving water in opposition to irrigation farmers, game farmers are in fact important water users, whose practices are currently unregulated by the state. Furthermore, by producing the Waterberg as an empty wilderness, these local actors naturalize inequality and question the very presence of black rural poor on the plateau. Thus, the chapter shows that water inequality is also linked to neoliberal conservation.

Finally, Chapter 7 offers a conclusion by returning to the main research question, reflecting on the possible exceptionality of the Waterberg as a

case study, reiterating the thesis' central argument, and pointing to a few directions for future research.

Notes

[1] However, a closer look at this document reveals that the ANC intends to reduce the Gini coefficient from 0.69 to 0.6 over a period of 17 years (NPC 2013). Besides appearing like a minimum target, this also means, quite paradoxically, that the government plans to bring inequality levels back to where they were in 1995, immediately after the end of apartheid (Cullis and van Koppen 2007: 2).

[2] What Turton (2015) means with the 'politicization' of the water sector, is the application of an 'ideology of transformation', intended in turn as the deracialization of the public sector. In his opinion, this has facilitated the current water crisis in that the government has lost its previous capacity to plan and manage water resources and moreover it has been responsible for deteriorating water quality (mostly through untreated sewage, *The Money Show* 2016).

[3] The term Bushveld refers to a region whose vegetation is characterized by low-growing thorn trees and bush.

[4] The Rand has depreciated considerably over the course of this research. When I arrived in the field on 12 August 2013, the USD/ZAR exchange rate was 9.8. When I left the field on 7 August 2014, that was 10.7. Finally, when I returned to South Africa for a follow-up trip on 12 September 2015, the exchange rate was 13.6. Historical rate data were retrieved from the website <http://www.xe.com/> accessed 20 June 2016.

[5] To be sure, Medupi power station promises to have profound implications for the political economy of water in the Waterberg and, more generally, in South Africa. And yet, at the time of my main period of fieldwork, the plant was still in an early stage of construction and its actual consequences on the allocation and uses of water in the region could not be observed. For this empirical reason, it does not play a central role in my narration.

[6] That is to say, just above the benchmark of 20 litres per person per day set by the World Health Organization to assure that basic drinking, hygiene, and food hygiene needs are met.

[7] As clearly explained by Cousins and Walker (2015: 270), "'Bantustans" was a term that was used to refer to the African reserves [already established in the 1910s] in the 1950s, and subsequently replaced by the official term "homeland", as these areas were earmarked for future self-governing status and then nominal independence. The term was retained by critics of the apartheid government in

the 1970s and 1980s and continues to be used in contemporary debate to signal political distance from this project'.

[8] Acknowledging that defining neoliberalism is *per se* an issue of debate, this thesis follows Heynen et al. (2007) in interpreting it as both a politico-economic project to restore conditions of capital accumulation and strengthen the power of certain economic elites (what is commonly referred to as ideational perspective, see Gill 2000, Turner 2008) *and* a coherent and distinctive discourse aimed at asserting the superiority of the market as a system of governance and supporting the implementation of a particular set of economic policies (material perspective, see Harvey 2005, Robison 2006).

[9] On systematic forms of exclusion from biopolitics, see Agamben 2005a, Bauman 2004, Mbembe and Meintjes 2003.

[10] Besides the Waterberg, the rural districts of Upington in the Northern Cape and Worcester in the Western Cape were initially considered. All three sites were in fact deemed suitable for the purpose of studying the interactions between domestic and productive water uses.

[11] Originally, the research design included the rural villages located to the north-east of the Waterberg plateau, known collectively as the Bakenberg area. However, these were left out after a series of preliminary visits (and structured interviews) conducted between November 2013 and January 2014. This decision was supported by three main reasons. First, the villages fall under the administration of the Bakenberg Traditional Authority and I felt that that would add another level of complexity to the research, thus making it quite difficult to manage. Second, most of the villages lie below the escarpment and do not share the same water sources to be found on the plateau. Third, from a broader political economy perspective, the villages have few linkages with the plateau, in that their adult residents prefer to move to Lephalale, Pretoria, and Johannesburg when they leave home in search for an occupation.

[12] Although I was living on a white farm, my landowners were still 'outsiders', in that they had been living in the Waterberg for only five years and their livelihoods was not based on the land. Therefore, they did not socialize much with other white farmers, either traditional or game.

[13] Our selection criteria would differ from one place to another in order to take into consideration aspects such as the size of every residential area and its population density. For instance, in the suburbs, we selected every fifth house on the right-hand side starting from the street closest to Vaalwater main road (that is, the provincial route R33). Whereas, in extension 2, we selected every fourth house on the right-hand side starting from the point closest to town and at the same time walking from one area of the extension to another.

[14] Yet, a couple of structured interviews in the suburbs took place at the house gate, as the respondent did not feel comfortable about letting us in. For this reason, they only lasted about ten minutes.

[15] For the whole duration of my stay in the Waterberg, I participated in a Pilates course held in Vaalwater twice a week. Besides some much needed physical exercise, this turned out to also provide access to a group of residents from the town and its immediate surroundings.

[16] To keep quiet in face of racist comments was sometimes difficult, especially when casual statements would make me question the meaning of the whole transition process from apartheid to democracy, but I made a conscious decision not to react in order to 'save' my relationship with the respondents.

2 A historical perspective on the production of the Waterberg's waterscape

The aim of this chapter is to introduce the Waterberg from the vantage point of its 'waterscape'. This notion was introduced by Swyngedouw in 1999 and it has become a key term in the vocabulary of political ecologies of water ever since (Kaika 2005; Linton and Budds 2014; Loftus 2006, 2007, 2009; Swyngedouw 1999, 2004, 2015). Following from the theory of the production of nature (Smith 2010), the idea of waterscape, or water landscape, refers to those socio-natural relations through which water resources are controlled, developed, and distributed. Rather than representing something fixed and 'natural', the waterscape is understood as a historico-geographical process of production of both society and the environment – hence, the relevance of beginning this work with the history of the Waterberg. In a recent re-elaboration of the concept of waterscape as 'hydro-social landscape', Swyngedouw (2015: 21) offers the following definition: 'an assemblage of interwoven processes that are simultaneously human, nonhuman, material, discursive, mechanical, and organic, but ultimately driven by political forces and economic processes that aspire to turning nature into capital, a process that necessarily implies changing social relations to nature'. According to Swyngedouw, the waterscape is inherently political for two main reasons, namely because power relations play out primarily in the allocation of natural resources and because every political project implies the transformation of the physical environment (Harvey 1996). Loftus (2009) adds to that by noting that political ecologies of water investigate not only how the distribution of water is shaped by relations of power (Arsel and Spoor 2010), but also how water itself shapes such relations, especially through the Foucauldian notions of biopower and biopolitics (Bakker 2012, Ekers and Loftus 2008, von Schnitzler 2008).

A major turning point in the history of the Waterberg's waterscape is that, following white colonization, the latter came to rest on social relations of access to and ownership of the land. The scholarship on South African environmental history shows in fact that the appropriation of water resources was not only fundamental for the development of settler colonial societies, but also instrumental in the land dispossession and displacement of black local people (Beinart 2003, Guelke and Shell 1992, Jacobs 2003, Tempelhoff 2008). This is a first example of the land-water nexus that was introduced in Chapter 1. For this reason, although the focus will remain on water, a common thread throughout the chapter will inevitably be the production of the landscape, similarly centred on social relations of appropriation, transformation, and inclusion/exclusion.

Another important feature of the Waterberg's waterscape is its encompassing water services (that is to say, the provision of treated water to households) in the town of Vaalwater and water resources (raw water employed for multiple uses) on private farms. The reason for this is that, since the town's foundation, water supply in Vaalwater has been sourced from neighbouring farms and in consequence it has been conditional upon local authorities negotiating with private landowners.

The main argument of the chapter is that by looking at the production of the Waterberg's waterscape from a historical perspective, a pattern of continuity (amid some apparent changes) emerges among the colonial, apartheid, and post-apartheid periods with regard to access to, development, and distribution of water. This contributes to the overall argument of my dissertation by showing that at the base of the water shortages currently experienced by Vaalwater and Leseding's residents lie structural conditions of inequality, which evolved under colonialism and apartheid. Furthermore, this brief socio-environmental history of the Waterberg helps reinsert and emphasise the presence of black people on the plateau (something that today is often perceived as 'unusual'). This is meant to counter common claims that the Waterberg has historically been scarcely populated and therefore ideal as a place to recreate wilderness spaces, which appear to erase all traces of black presence from the region's past. Instead, this chapter shows that at the time of the European colonization of the Waterberg, African presence on the plateau although possibly small in numbers (quantifying is an issue per se, given the lack of written sources) was larger than that of white settlers and for this reason became

progressively monitored to make it functional to the needs of the latter, up to the point where blacks were forcibly removed from the area in the 1970s.

Research on the precolonial history of the Waterberg was started by scholars based at the Archaeology Department of the University of South Africa in the late 1980s (Aukema 1989). This research focused on the Lephalala River drainage system, where several 'Later Stone Age' sites (small rock shelters, most of which contain rock art images) were uncovered.[1] van der Ryst (1998) provides a chronology of this period by dating it from the twelfth until the early twentieth century. That is to say, San hunter-gatherers appear to have settled semi-permanently in the Waterberg plateau about a thousand years ago and have utilized this area intensively for the past six hundred years. This is the same time in which Bantu-speaking mixed farmers (categorized as 'Iron Age' people) also moved to the region, so that complex dynamics of interactions took place between these two groups (for instance, it would seem that San were ultimately displaced or incorporated in a subordinate position by African polities). For the purpose of this chapter, it is important to note that archaeological evidence shows that Bantu-speaking agro-pastoralists were still permanently settled in the plateau as late as the first half of the nineteenth century (Boeyens et al. 2009).[2] Written accounts of missionaries and travellers from the nineteenth and early twentieth centuries support the claim (further explored in the next section) that Europeans entered in contact with the Waterberg's previous occupants and, in the specific case of San, they indentured some of them and of their mixed descendants (van der Ryst 1998: 13-7).

Without denying the relevance of its precolonial history, this chapter presents a historical account of the Waterberg starting from the European colonization of the plateau, as that is considered a major turning point in the production of the local waterscape. A broad periodization is adopted to distinguish three moments within this process. The first section reviews the colonial appropriation of land and water resources from the arrival of the first white settlers in the 1850s until the end of the Anglo-Boer War (1902). The second section explores the linkages between the exploitation of water resources (or rather the lack thereof) and the dynamics of socio-economic development in the Waterberg during much of the twentieth

century. Finally, the last section introduces the production of water scarcity in the town of Vaalwater amid abundance of water resources in the plateau.

2.1 Colonial appropriation of natural resources (1850-1902)

The colonial toponymy of the Waterberg is full of water references. For instance, the name itself literally translates from Afrikaans as 'mountain of water', probably due to the fact that following abundant rainfall during the rainy season (October-March) water drains off the escarpment forming waterfalls (van der Ryst 1998: 18). Besides that, numerous farm names end in *fontein* ('fountain'), *stroom* ('stream'), or *rivier* ('river'). This seems to reflect a typical pattern of colonial settlement, whereby colonists occupy land in close proximity to a source of water (in this case, perennial springs and streams) not only to support themselves, but also to secure exclusive control over water resources and in this way drive previous inhabitants away (Guelke and Shell 1992). In the Waterberg, this process only started in the second half of the nineteenth century and took quite a long time to be accomplished.

The white colonization of the Waterberg must be read within the broader context of the Great Trek, namely the migration initiated by about six thousand Afrikaners (mostly semi-nomadic pastoralists known as *trekboers*), who in the 1830s left the eastern districts of the Cape Colony to express their discontent with British rule and to look for new territories where to settle under self-government (Thompson 2001: 87-96).[3] Afrikaner migrants (who in a process of 'self-fashioning' (Greenblatt 2005) at the end of the nineteenth century became known as *voortrekkers*, meaning 'pioneers') reached the Waterberg region in the 1850s.[4] Until 1866, this area formed part of the Zoutpansberg District of the Afrikaner Republic of Transvaal (Zuid-Afrikaansche Republiek, ZAR), which had been established in 1852. The Zoutpansberg constituted the northernmost Afrikaner colony beyond the Vaal River, with Potchefstroom to the south and Lydenburg to the east. Wagner (1980) has shown how this was fundamentally a hunting frontier and the town of Schoemansdal a centre of ivory trade from its foundation in 1848 to its demise in 1867. The latter was ultimately caused by a war with the Venda, but took place in a broader context of increasing African resistance to the expansion of white hunting

(based on the use of guns) into territories controlled by African polities. Commenting on the fall of the frontier, Wagner (Ibid.: 316) argues that it was 'a casualty of the pioneering days when a white population of less than 30.000 spread itself so thinly north and east from the Vaal River as to overreach itself'. Following the abandonment of Schoemansdal, Afrikaners (also known as Boers, which literally translates as 'farmers') retreated to the Waterberg, where the town of Nylstroom (today's Modimolle) had been founded in 1866 and the Waterberg District had been officially proclaimed by the ZAR *Volksraad* ('people's council') in the same year. Yet, settlers clustered in the southern part of the region, whereas they regarded the plateau or 'place behind the mountain' – as it was usually referred to – as too remote for being occupied permanently. From a white perspective, the Waterberg mountains represented a dangerous wilderness inhabited by game, 'natives', and criminals. This is well captured in the opening passage of *The Road to Waterberg*, an essay written by Afrikaner author Eugène Marais, who spent eight years on a farm to the south-east of the escarpment at the beginning of the twentieth century:

> An old acquaintance, Dolf Erasmus, met me in Nylstroom with a cart and four horses and for the first time in my life I entered Waterberg, the mistery region of my boyhood. From that wonderland, the hunters' wagons used to come to Pretoria to unload their ivory and skins at the trading stores: Giraffe-skin whips; sjamboks of rhinoceros and hippopotamus hides; […] and numbers of others we boys of the civilized south could only guess at. […] Waterberg has thus always been associated with all the wonders of unpeopled veld, and to us who were born and grew up on the outskirts of the wilderness it represented the ideal theatre of manly adventure, of great endeavours and the possibility of princely wealth. Ivory was then what gold and diamonds became afterwards. (Marais 1972: 9-10)

In 1873, the first census of the white population of Transvaal revealed that the northern districts of Zoutpansberg and Waterberg together reached only just 1,376 people, that is to say 5 per cent of the total (Wagner 1980: 319).[5] In order to promote white settlement behind the mountain and bring order to a region described as an 'administrative nightmare', in that civil and judicial administration could hardly be executed (Hofmeyr 1987: 12), President Paul Kruger issued the Occupation Act No. 8 of 1886, by means of which the government acquired land free of charge in the Waterberg and allocated it to 'burghers' (meaning ZAR citizens). However,

ecological constraints both in the low grounds below the escarpment (tsetse flies) and in the higher grounds of the plateau (soils either too rocky or too sandy) discouraged settlers from farming in the area and pushed many of them to sell their allocated plots to speculators or land companies, whose interest lied in mineral prospecting following the discovery of gold in the Witwatersrand in 1886. Archival records show that by as late as 1902, 1,500 white families (all defined as 'Dutch') were living within a radius of 56 km from Nylstroom. Beyond that limit, the country was declared uninhabited by white people, as most of the land was held by land companies, with the exception of a few farms owned by 'Englishmen' and 'Dutch'.[6] A map convention of the time used to name such territories 'DBU', that is 'Dense Bushy Unsurveyed' (Hofmeyr 1987: 14).

An essential requisite for the development of white agriculture in the plateau was the harnessing of its water resources. In this regard, Beinart (2003) has nuanced our understanding of the role of the colonial state in providing financial support for irrigation infrastructure prior to the foundation of the Union of South Africa in 1910. In his study of livestock farming in the Karoo between 1880 and 1930, in fact, the author shows that until 1910 waterworks such as dams and boreholes were privately funded by farmers themselves rather than by Cape Colony subsidies. The same circumstances applied to Transvaal in general, but were aggravated in the particular context of the Waterberg by the fact that white farmers living in the region lacked the capital needed to make such investments. By 1902, not a single borehole had been drilled in the area (Krikler 1993: 79) and the Waterberg was regarded as 'one of the poorest and most backward districts of the Transvaal'.[7] Afrikaner settlers (still constituting the majority of the local white population at the time) mainly lived off subsistence farming (cattle, wheat, and mealies), tobacco cultivation, poaching, and brewing (Hofmeyr 1987: 19).

As noted by Wagner (1980), a frontier is necessarily a place of interaction and although the colonial mind tended to neglect the de facto occupation of the land to favour its de jure ownership, it would be incorrect to translate the late and modest presence of white settlers in the Waterberg into a generalized claim that the region (and the plateau in particular) had always been empty. In her analysis of English storytelling in the Waterberg,[8] Hofmeyr (1987: 15) states that such stories tend to 'suppress black life, removing people imaginatively beyond the borders of the farm, there

to merge with the landscape and its wild life'. Nevertheless, black people did occupy the Waterberg at the time of its European colonization and they took active part in its local politics, which revolved around three main issues, namely: control of land and labour; patronage relationships between Afrikaner and African leaders;[9] and internal power conflicts within African chiefdoms.

Unlike the central Highveld (that is to say, the territory to the south of the Vaal River occupied by the Afrikaner Republic of the Orange Free State, Oranje-Vrijstaat), the Bushveld[10] of the northern and eastern Transvaal had not been cleared of African presence as a consequence of the so-called *Mfecane*, namely a period of internal warfare initiated by the expansion of the Zulu kingdom in south-eastern Southern Africa in the 1820s (Wagner 1980: 321). Instead, the mountains of this area provided refuge to local inhabitants before the internal migrations of African people caused by the *Mfecane*, so that when Afrikaners arrived, 'they entered a disturbed but crowded African world' (Ibid.). If only 1,500 white families were recorded living in the Waterberg in 1902, a report written by Native Commissioner G. Grobler[11] in 1901 concerning 'native races' in the district provides a population figure of 100,000, which is commented upon by saying that the Waterberg is 'not so densely populated' in relation to its size – about 40,000 km² (Cana 1911: 189) – and that 'natives form the major portion of the population'.[12] These data seem to fit the description offered by the first complete census of the population of Transvaal (compiled in 1904), which indicated that black people were concentrated in the northern and north-eastern districts of the republic (namely, Zoutpansberg, Lydenburg, and Waterberg) (Ibid.).[13]

When white settlers established themselves in the Waterberg, the closest and most prominent African polity they had to interact with was that of the Ndebele of Langa. According to Jackson (1981), this group migrated from Zululand in the mid-seventeenth century and settled in the plains to the east of the Waterberg escarpment, along the Mogalakwena River, in order to access water for their crops (Boeyens et al. 2009). Yet, oral tradition suggests that the Langa also ruled the plateau (van der Ryst 1998: 25). In the 1820s, they were incorporated into the kingdom of Chief Mzilikazi, who used to raid other African communities as well as *voortrekkers* parties and was defeated in 1837 by a Boer commando led by Andries

Hendrik Potgieter (later to become Commandant-General of the Zoutpansberg District from 1848 to 1852). From Potgieter's perspective, the victory over Mzilikazi meant that he could rightfully command the African population previously under the chief's rule. In practice, however, he did not have the power to control the black communities scattered across the district territory and a number of attacks and counter-attacks between Ndebele chiefdoms and Boer commandos took place during the following decades. Not only did these fights result in the killing of people (with African victims greatly outnumbering white ones), but also in the expropriation of livestock (Jackson 1981: 14-8). This is the context in which a *Superintendent van Kafferstammen* (literally, 'Superintendent of Kaffir Tribes') was originally established in the Zoutpansberg in 1859 as one of three major centres of power in the colony (Wagner 1980: 321).[14]

The Superintendent's function was twofold: to collect tribute from African chiefs and headmen, and to control armies of African collaborators. Beside the Superintendent, the district Commandant was in charge of a civil militia organized through local *veldkornets* ('field cornets') and the *Landdrost* ('magistrate') was in charge of civil and judicial administration (Ibid.). Following their incorporation into the Transvaal territory as 'tribal locations', African chiefdoms passed from being independent communities of rural households based on subsistence farming and kinship relations to being de facto semi-independent entities, which were subject to taxation, demand for labour, and predatory activities of ZAR local administrators (Krikler 1993: 8). Subjugation to white rule coupled with internal conflicts for the leadership of the Ndebele chiefdoms were causes for further unrest until the early 1900s. However, to pacify the Langa country never seemed to be a priority for the Transvaal government. In the 1860s, the Boers had to face increasing African resistance further north, culminating in the abandonment of Schoemansdal in 1867 and the war against the Pedi chief Sekhukhune in the late 1870s (Wagner 1980). Probably as a result of this neglect, when the front between English and Boers was opened in the 1880s, the British regarded the Langa as potentially strategic allies. For this reason, during the course of the Anglo-Boer War (1899-1902),[15] English officials started to intervene in the Langa's affairs to the extent that that was beneficial to their own military and political objectives. For instance, the British Intelligent Service granted protection to black

tenants harassed by Chief Hans Masibi and had the chief detained in Pretoria because he was suspected of colluding with the Boers and obstructing 'native' scouts.[16]

A second, and perhaps more important, reason why Africans in the Transvaal participated in the Anglo-Boer War relates to agrarian social relations. At the turn of the twentieth century, in fact, the bulk of black peasants in northern Transvaal lived as tenants on private farms, a situation facilitated by absentee landlordism on company land (Krikler 1993: 114). For instance, it is estimated that in the Waterberg alone there were 24,000 black peasants living on farms, whose owners were absent for most of the year (Ibid.). Land companies were keen to extract cash rent from their tenants and for this reason opposed (successfully) the Squatters Law Act No. 21 of 1895, which was meant to limit the presence of 'natives' on white farms to a maximum of five households. On those farms where producing landlords were present, black peasants were allowed to stay as labour tenants, meaning that they were requested to provide free labour to the landlord for a certain number of days per year (usually 90).

According to Hofmeyr (1987: 25), black peasants and tenants were the most permanent and productive agricultural producers of the Waterberg and probably continued to be so until the 1920s. Krikler (1993) has read blacks' participation into the war as a nascent form of agrarian class struggle, whereby by sustaining the British, farm workers were in fact revolting against exploitation by landlords and were expecting to produce change in agrarian relations. Thus, besides providing information to the British Intelligence, during the war black peasants in the Waterberg expropriated Boer livestock (sometimes following British instructions, other times at their own initiative) and occupied Boer farms. Whereas after the war, they resisted the return of Boer families by claiming to have the right to live on such land without paying rent or providing labour (Warwick 1980: 193, 207). The experience of this sort of problems with African tenants by Waterberg farmers constitutes the subject of a correspondence between the Native Affairs Department and the Lieutenant-Governor of Transvaal dated 1902. Here, the Secretary for Native Affairs matter-of-factly observes that 'the present condition of things has arisen from prevalent idea in the native mind that the Boer has been displaced on the land in favour of the native. This idea is being rapidly removed from their minds'.[17]

2.2 Lacking water-based development (1902-1994)

The Anglo-Boer War was a watershed in the history of Transvaal in that the reconstruction years immediately following it saw a process of modernization being started in the previous republic (now a territory within the British Empire) under the administration of Lord Milner, British High Commissioner for South Africa and Governor of the Cape and Transvaal between 1897 and 1905. This modernization process aimed at fully integrating Transvaal into the British project of state capitalism based on mineral resources extraction. That is to say, Transvaal had to develop a highly productive large-scale agricultural sector in order to feed the white mining labour force and keep its reproduction costs low (Marks and Trapido 1979). For this reason, modernization rested fundamentally on irrigation. As it has been noted above, the Afrikaner administration had neglected the development of water infrastructure to the point that, as noted by Krikler (1993: 79), 'what the resident magistrates and other were drawing attention to was not the destruction of irrigation technology by the war, but the absence of such technology'. The newly established Transvaal Irrigation Department started to collect data on water quantities in rivers, discovered that the territory's watercourses were dependent upon a common 'geological catchment area', and realized that storm water represented a crucial resource that needed to be stored and utilized (Ibid.). Besides conducting scientific studies of water resources, from 1905 the Irrigation Department offered material assistance to (white) farmers by allowing them to apply (in exchange for a fee) for having a borehole drilled on their land with one of 'the Department's eighteen "modern and powerful" drills' (Ibid.: 80).

However, the strategic importance of irrigation went beyond its contribution to increasing agricultural productivity. Instead, it must be contextualized within the attempt of the British administration to create a new rural order based on two complementary aspects (Marks and Trapido 1979: 75). The rural areas of Transvaal needed to be filled with whites (preferably British) and at the same time emptied of blacks, meaning that African peasants (especially tenants) had to be dispossessed of their means of production and transformed into a proletariat that would meet the labour needs of the mining sector (Krikler 1993: 38). For this reason, the Squatters Law of 1895 became strictly implemented (which also served the

purpose of redistributing labour among landowners) and alongside irrigation, settlement schemes were introduced. These schemes were targeted at two different social groups. On the one hand, they aimed at promoting British immigration in the Transvaal, which turned out to be 'the least effective of all the attempts at social engineering' (Marks and Trapido 1979: 75). Nevertheless, Marks and Trapido (Ibid.: 75-6) note that more than a thousand English rural households moved to the Transvaal and Orange River Colony (that is, the former Afrikaner Republic) and beside bringing with them an average of 500 GBP in savings, 'their presence also encouraged a general and perhaps incalculable assistance to the countryside which might not otherwise have been proffered'. On the other hand, Burgher Land Settlements schemes were meant to provide relief to poor Afrikaner farmers, whose conditions lay at the core of the so-called 'poor white question'.[18] As noted by Morrell (1992: 3),

> the existence of white poverty and a "disreputable" class in the ZAR was manifest as early as the 1850s in the Boer settlement of Zoutpansberg. By the 1870s the instances of poverty had become more widespread and by the 1880s there was a significantly large group of landless burghers. The dimensions of the problem continued to increase through the next five decades.

According to Marks and Trapido (1979: 76), these schemes failed too because farmers did not have access to the capital and labour required for a profitable enterprise.[19]

In the Waterberg plateau, both schemes were put in place following the arrival of the land surveyor after 1902, an event that within the history of land ownership marks the conversion of wilderness into property (Linklater 2013: 2). In line with the overall experience of Transvaal, these schemes turned into a failure, which is partially explained by the difficult farming conditions of the uplands. Nonetheless, the relevance of land settlement schemes in relation to the local history of the place is that they paved the way for the British colonization of the plateau and the emergence of a new myth of 'Waterberg pioneers' to be found in English memory literature from the turn of the twentieth century as well as in popular historical accounts from today (Hofmeyr 1987, Hunter 2010, Rodger 2010, Taylor et al. 2003, Walker and Bothma 2005). Although a Mr Arthur Peacock (cousin of Cecil Rhodes) had moved to the Waterberg from England in 1886 to become manager of a cattle ranch owned by the Transvaal Land and Exploration Company (Hunter 2010), more British settlers only

arrived in the early 1900s, as a result of the settlement scheme, which had followed the Anglo-Boer War, and a second one after the First World War (Hofmeyr 1987: 17). For instance, it was under one such Settlers Ordinance that the farm Vaalwater No. 5 (on which the town of Vaalwater was later to be founded) was leased to a Mr Kirkman and Mr Armstrong in 1907.[20] The farm bordered the Mokolo River, namely the major source of water on the plateau, but Mr Kirkman complained (after only eight months of occupancy) that the Transvaal Department of Agriculture had miscalculated the amount of irrigable land and was late in providing him with a pump.[21] Again, the ecological conditions of the plateau, from its seasonal rains (which made water storage a necessity) to its soils poor in nutrients, meant that very few British settlers were able to remain, either because they had capital to invest in agricultural infrastructure or because they diversified their livelihoods (through trade, for example).

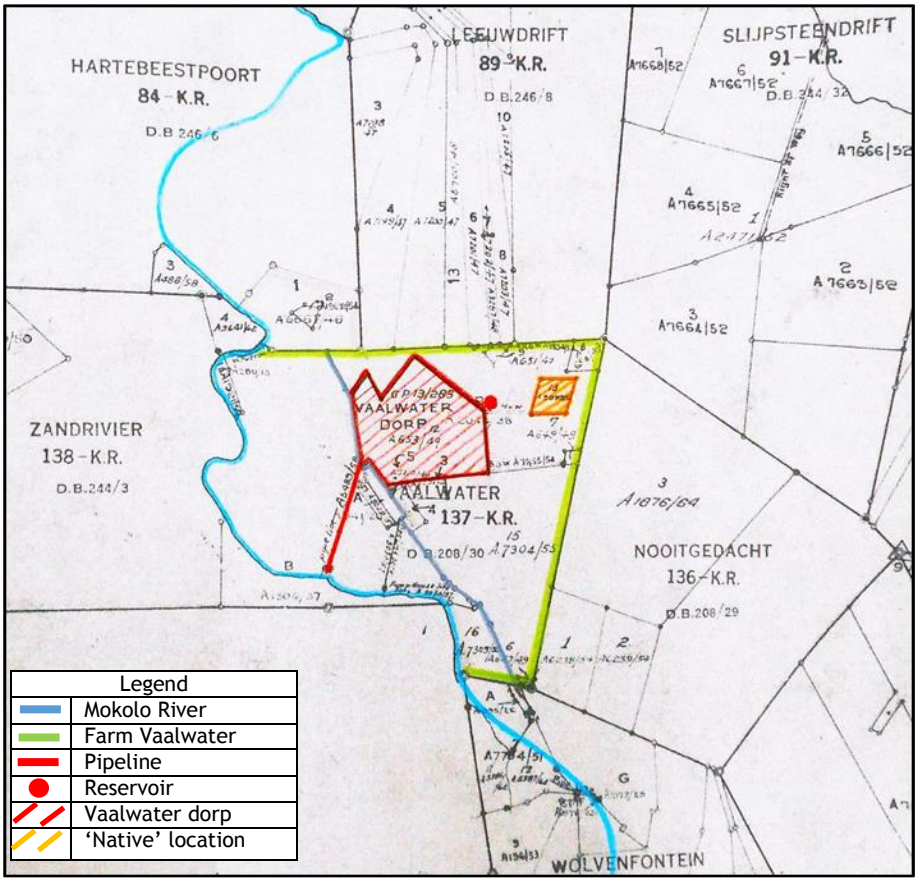
Those who stayed became a new landed gentry that romanticized farming as 'an inherited condition of gentility, […] a secular religion that could heal social wounds and restore social balance', so that 'many of them [English-speaking settlers] did little farming preferring instead by all satirical accounts to play tennis most of the time' (Hofmeyr 1987: 17, 26). And yet, there were also some 'progressive' farmers,[22] who organized themselves into the North Waterberg Farmers Association (later to be incorporated by the Transvaal Agricultural Union) and started to lobby the Union of South Africa Government for state investment in agricultural infrastructure (crop/cattle farmer, personal interview, 28 January 2014). Besides the introduction of irrigation in the reconstruction years, in fact, state intervention in agriculture in the Transvaal of the early twentieth century 'was perhaps more important in providing the basis for accumulation – through railway networks, rural policing, research and veterinary services for example – than in making subventions or controlling markets' (Beinart and Delius 1986: 31). Therefore, the state built roads in the Waterberg and even extended the railway line from Nylstroom to the farm Vaalwater in 1928, so that fresh produce could be transported and marketed in southern towns. However, notwithstanding the farmers association's demands for water infrastructure that would help secure their resource provision (such as a dam in the Mokolo River), the government did not finance any waterwork on the plateau. These were the same years (namely, the 1920s) when the Union state began to appreciate large-scale irrigation projects

and to build big dams across the country (Beinart 2003). The main reason advanced by the Transvaal Department of Irrigation for not funding the construction of a dam in the Waterberg plateau was the lack of suitable sites coupled with evaporation rates too high (crop/cattle farmer, personal interview, 28 January 2014). Yet, it seems plausible to think that the state did not want to make a substantial investment in what remained a peripheral area of the country, whose contribution to agricultural production was limited. As a result, Waterberg farmers clustered around the major bodies of surface water in the area, primarily the Mokolo River and to a lesser extent the Lephalala River, and built small private irrigation works on individual farms, such as storage dams, weirs, and pumping stations. Ultimately, what made agriculture economically viable in the region was state intervention in the form of subsidies, cooperative schemes, and marketing boards prompted by the Great Depression of the 1930s (Ballim 2015). Productive activities centred on cattle ranching (Bonsmara breed) and maize, groundnuts, and tobacco farming.[23]

Notwithstanding the apparent lack of economic development in the plateau (besides its small agricultural sector, no industrial or mining activities had been started), in the late 1940s a local businessman, Mr Holtzhausen, launched a land speculation by submitting a township[24] application to the Transvaal Board for the Development of Peri-Urban Areas. Basically, he wanted to found a town in the middle of the Waterberg plateau. For this reason, Vaalwater Development Company Pty. Ltd. bought a portion of the farm Vaalwater No. 5 (namely portion 12, about 170 ha located in the middle-north of the property) from Mr Kirkman's heirs. Along the years, in fact, this farm had become a service point for the local white community due to the presence of a mill on the Mokolo River (crop/cattle farmer, personal interview, 28 January 2014). Vaalwater *dorp* (literally, 'village') was thus officially proclaimed in December 1953.[25] Nevertheless, the original township plan, consisting of as many as 378 plots for building purposes, turned out to be too ambitious and the plot sale was only completed in the 1990s, when buying a house in the bush became a new lifestyle trend.[26] At first, the responsibility to provide the town with a reliable water supply rested on Vaalwater Development Company and although the farm portion on which the *dorp* was founded did not border the Mokolo River, the company was able to retain some of the farm's riparian water rights. Therefore, water for the town was pumped

out of a pool in the Mokolo and then transported through a pipeline into a reservoir located in the north of the town (see Map 2.1).[27] According to a 1952 assessment of the 'water question' in Vaalwater (that is, the feasibility of this water scheme), there was no limit to the quantity of water to be abstracted for 'primary uses' (that is, the actual requirements of the township).[28] Past records of the river's flow showed in fact that this was much higher than the water needs of an estimated population of 10,000 people.[29]

***Map 2.1** Vaalwater dorp (ca 1954)*



Source: Elaboration of the author based on original map found in NAR, TPB 3038 3/1/147

In the mid-1960s, a large portion of the farm Vaalwater was purchased by an English settler from Southern Rhodesia, who had moved to South Africa following the colony's independence in 1964 (crop/cattle farmer, personal interview, 20 October 2015). Although the new owner put the land under extensive irrigation (by using the river's water), the town's water supply was not immediately compromised.Things changed only in the late 1970s, when the Transvaal Board for the Development of Peri-Urban Areas offered to take over the management of water services in Vaalwater and discussions about the suitability of groundwater for human consumption were started.[30] Ultimately, in 1988, a Mr Colin Baber, owner of Vaalwater Butchery Pty. Ltd. and of a portion of the farm Vaalwater, granted the Local Government Affairs Council (which by this time had become responsible for the supply of potable water to the town's residents and of which he was a member; cattle farmer, personal interview, 17 June 2014) servitude over a small area of his property where the council could sink a borehole and abstract water free of charge for 12 years.[31] This means that, from the 1990s, water supply in Vaalwater became dependent upon the cooperation between local authorities and landowners. That is to say, the Local Government Affairs Council needed to find farmers, who were willing to relinquish part of their own water,[32] so that town residents could receive water services.

The period in which Vaalwater's water supply started to be sourced from groundwater coincided with the most significant change in the waterscape of the plateau, namely the construction of a dam in the Mokolo River. In the 1970s, in fact, the apartheid government decided to dam this river with the aim of meeting not the water demands of the local farming community (and possibly of Vaalwater town), but rather those of the mining and energy sectors. Although coal deposits were discovered in the plains to the north of the plateau in the 1920s and the so-called Waterberg Coalfields were being prospected since the 1940s, it was only in the 1980s that extraction started. Following its inauguration in 1980, the water collected in the Hans Strijdom Dam (so named after the former South African Prime Minister from Transvaal) was delivered to the Exxaro Grootegeluk coal mine (established in 1980 by Iscor), Eskom Matimba Power Station (whose construction started in 1981), and the mining town of Ellisras (today's Lephalale, founded in 1960). Since the plateau farmers were located upstream of the dam, no irrigation scheme was developed

for them and they were de facto excluded from the Mokolo River Irrigation Board, which instead gathered together those farmers downstream of the dam, who could benefit from a water scheme. Moreover, in order to make sure that the dam's storage capacity was not compromised by upstream water uses, two Government Water Control Areas (GWCAs), namely the Mokolo River GWCA and the Hans Strijdom Dam Catchment GWCA, were declared in 1969 and 1985 respectively (DWAF 2007b: 14).[33] As a result, the water uses of both plateau farmers and Vaalwater residents needed to be limited, rather than expanded.[34] In 1970, the exploitation of groundwater was also subjected to government control with the proclamation of the Mokolo River Subterranean Water Control Area.[35]

In order to fully understand how the water question in Vaalwater evolved after the demise of apartheid, it is necessary to take a step backwards and trace black presence in the plateau since the town's foundation. The early twentieth century plan to empty the Transvaal countryside of African farmers succeeded to the extent that the apartheid government was able (especially after the establishment of Bantustans in the 1950s) to ensure that blacks would reside on white farms only as wage labourers. In 1948, that is after the township application for Vaalwater was submitted, the Native Commissioner for the Northern Areas informed the Department of Public Works that no site should be reserved for the purpose of a 'native location' (namely, an area on the outskirts of a town where blacks were obliged to live). A handwritten note on the margin of this correspondence explains that since the township was 'in the heart of the European farming area', there was no interest in that.[36] However, in 1949 plans for the establishment of a location to the north-east of the township were discussed in detail and the Department of Native Affairs asked Vaalwater Development Company to donate 30 morgen (25 ha) consisting of 380 plots for such scope.[37] This request was soon reduced to between 15 and 20 morgen (13 and 17 ha), since in a residential area such as Vaalwater fewer sites were deemed necessary for 'non-Europeans' than for 'Europeans' and the Townships Board had commented that 'the Township owner should not be required to donate more ground than is necessary for the accommodation of those natives whose presence in a Location is necessary for the well-being of the European inhabitants'.[38] In the meantime, the Department of Health had inspected the proposed location site and found it unsuitable, so that an alternative place was suggested further to

the south. A Board's report dated 1951 notes that 'It is situate [sic] just over 600 yards from the western and nearest boundary of the township but is completely out of sight as the area is bush country' (see Map 2.1).[39] Water for the location was to be supplied from the township reservoir or from a borehole.

Nevertheless, the proposed location was never established as a direct consequence of the lack of socio-economic development in the Waterberg plateau in general and in Vaalwater in particular, meaning that as long as the white population in the town remained small, no location could be authorised whose black residents would greatly outnumber the white ones. Indeed, the absence of an official location cannot be understood to imply that there were no blacks living in and around the town. According to the Nylstroom Magistrate, in fact, in 1954 the population of Vaalwater was composed of 70 *Blankes* ('whites') and 500 *Naturelle* (literally, 'natives').[40] Instead, blacks became to be regarded as 'squatters', a serious issue of concern for the local population and authorities. For instance, in 1954 a group of farmers within the Vaalwater area wrote to the Administration of Transvaal applying for the foundation of a *Gesondheidskomitee* (literally, a 'health committee'), whose objective was to help the *dorp* develop in a 'healthy' way by avoiding that too many 'native squatters' occupied its surroundings.[41] Farmers seemed to be worried about the possibility that their own workers and servants could find refuge in such settlements.[42] A *Stadsgebiedekommissaris* ('Commissioner for the Urban Areas') inspected Vaalwater in 1957 and found that whereas only 5 white families were living within the town's boundaries,[43] 12 black families had been allowed by Mr Holtzhausen to reside on his own plot and other 15 'natives' occupied a compound next to the cooperative store just outside Vaalwater.[44] In 1964, those same figures had grown as follows: 40 whites were living in town, 300 'natives' in a 'temporary location' (that is, Mr Holtzhausen's land), and about 150 'natives' in the compound.[45] Although at the time another 175 whites were living at the margins of the town, they clearly remained a minority.[46]

However, black presence was completely erased from Vaalwater when the town was defined 'homogeneously white' and declared a group area 'for whites only' by the Department of Planning in 1964.[47] The very conditions undermining the development of Vaalwater, namely its being surrounded by relatively unproductive farmers and its lack of industries and

mineral wealth, made the presence of a black workforce superfluous to the needs of its white population. Progressively, the Department of Bantu Administration and Development abandoned the idea of establishing a 'native' location in town and although they proclaimed an emergency camp for 65 homeless black families in 1976, their resolution was to relocate families to the closest Bantustan (namely Lebowa), while allowing single men working in or around Vaalwater (about 248) to live in a hostel.[48] This is the context in which black families were removed from the town and resettled in the rural village of Steilloop, within the territory of Lebowa, which according to the logic of apartheid represented the homeland for North Sotho people.[49] Rogerson and Letsoalo (1982: 183) read the forced removals from Vaalwater to Steilloop as part of a process of 'demolishing urban townships and squatter locations in "White" South Africa and relocating their populations into new townships established within the Homelands, where the inhabitants of these "towns" become daily commuters, travelling to employment in the White areas'. According to these authors, about 20,000 blacks were relocated from Vaalwater, Ellisras, Nylstroom, and Naboomspruit to Steilloop at the same time.

2.3 Producing water scarcity (1994-2016)

Following the demise of apartheid, the water question in Vaalwater has evolved into how to provide water services in a context of unprecedented urban expansion. And yet, seen from the perspective of the Waterberg plateau as a whole, what becomes relevant to ask is how water scarcity is produced in a context of abundant water resources and who is affected the most by it. Since these are questions that inform my entire research and will find answers in the next chapters, this section limits itself to introducing the main changes occurred in the local waterscape over the past 20 years.

After the disestablishment of Local Government Affairs Councils in 1999 and the completion of the municipal demarcation process in 2000, Vaalwater was put under the administration of Modimolle Local Municipality (MLM).[50] The new ANC-controlled municipality (which the Water Services Act of 1997 declared a 'water services provider', see Chapter 3) inherited a water scheme, whose major feature was, as noted above, the need for negotiating access to groundwater resources with landowners.

Progressively, Modimolle was able to make agreements with several farmers and to source water from a total of eight boreholes scattered on private land around town.[51] Pump stations at each borehole, pipelines, and two new reservoirs were the only public infrastructure built in relation to water service provision over the past 16 years. However, this water supply gradually became insufficient to meet the demand of a fast-growing population that went from less than 1,000 in the 1980s to about 30,000 in 2015 (Divisional Manager Water Services MLM, personal interview, 20 October 2015). As a result, Vaalwater residents have been experiencing severe water shortages, which are explored further in Chapter 4. It is important to note that the growth of the town population is mostly related to the relocation of farm workers from private farms and rural villagers from the former Bantustan of Lebowa, so that it is mainly black poor people[52] who suffer from lack of access to a reliable water supply.

Since the fact that in a formerly 'white' town such as Vaalwater the majority of the population is now black is usually met with surprise by the white residents of the Waterberg, it is crucial to provide some historical political economy context to the actual town demographics. Indeed, considering the limited job opportunities in the plateau, its white residents tend to oversimplify black presence in Vaalwater by arguing that it is full of illegal immigrants from Zimbabwe and Mozambique 'who were never meant to be there' (game farmer, personal interview, 10 December 2013). Nevertheless, the reasons explaining why a large number of black people are now living in this small town in the middle of the Waterberg are far more complex than that and must be put in relation to three broader socio-economic processes taking in place in South Africa, namely: land reform; conversion to game farming; and agriculture restructuring. First, following the issue of the Extension of Security of Tenure Act in 1997 (within the framework of the land tenure reform), farm workers and dwellers were recognized as legal 'occupiers' who had the right to reside on and use someone else's land (provided that the landowners gave their consent), could not be evicted without a court order, and could apply for a state grant for the purpose of purchasing the land (Hall 2003). However, instead of securing workers and dwellers' tenure rights, the legislation seemed to have the perverse effect of making landowners conscious and suspicious of these people's presence, as they started to worry about the possibility

that they may lose their own land because of that. Thus, while some established farmer simply evicted black occupants without any paper, other new owners had their workers agree to move to town and commute (Hall et al. 2013, Wegerif et al. 2005).

Second, the conversion of crop and cattle farms into game farms and private nature reserves (which in the Waterberg intensified in the 1980s, see Chapter 6) resulted in farm job losses (pushing workers and their dependants out of the land) and forbade people from living on properties where dangerous game had been introduced or where the sight of poor living conditions would risk to spoil tourists' encounter with 'nature' (Spierenburg and Brooks 2014).

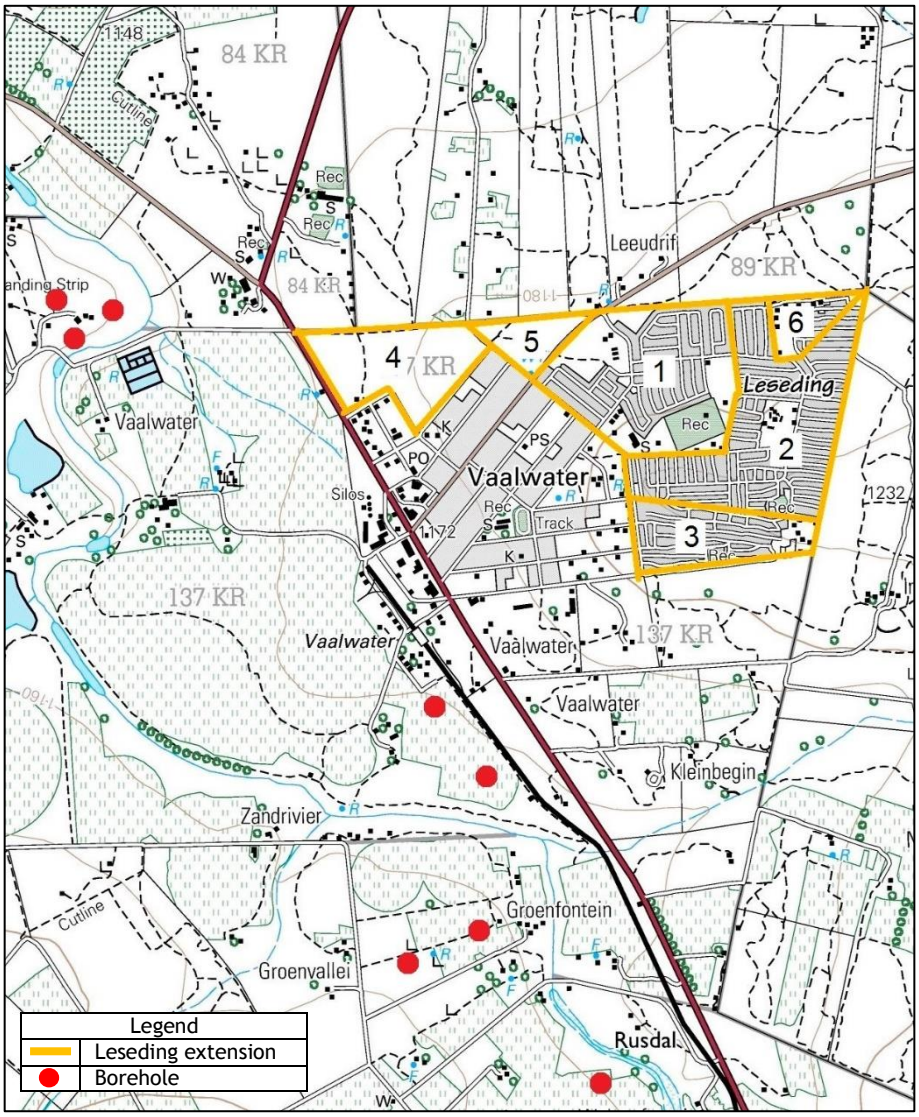
Third, there is surely migrant labour that has settled in Vaalwater since the early 2000s. Nevertheless, this cannot be justified, as most white farmers do, by the myth of the 'lazy native' ('a reluctance to work, lack of skill, and failure to understand the requirements of labour discipline', Li 2010: 74). Instead, the presence of migrant workers from Southern Africa must be put in relation to the deregulation of South African agriculture (that is, the progressive removal of marketing boards and other state subsidies) coupled with the institution of a minimum wage for farm workers in 2003 (revised in 2013), which rendered them attractive to farmers as a pool of cheap, flexible, and docile labour (Bolt 2015, Hall et al. 2013).[53]

The processes described above become clearly exemplified in the life histories of a number of township residents. The story of Mrs L., for instance, is particularly telling because of the interconnections of different elements (township resident, personal interview, 2 July 2014).[54] Mrs L. was born in 1962 on a crop farm that employed both her parents. She attended the first year of primary school at the local farm school, but had to drop out when that was closed. She kept living on the farm, got married, had children, and worked the land both for the owner and for her family until the property was sold in the early 2000s. The new owner evicted them with no warning or cash payment. 'He is now employing people from abroad who make no demands', she said. She remembers receiving some paper, but she did not think they were important and does not know whether she still has them. Mrs L. had no choice but to move to Vaalwater, where she occupied an empty plot in an informal settlement. Between children and grandchildren, her expanded shack now accommodates 14 people. She and her husband have found permanent employment on another

farm. This belongs to a family from Johannesburg who does not grow crops or cattle, but spends weekends there, in the bush. Her husband has to take care of the property, whereas Mrs L. has to cook and clean whenever the owners and their guests are there. The first time I met her (in November 2013), she said they were both earning 2,500 ZAR per month. However, when I visited her a second time (in July 2014), she complained that their employers had reduced their salaries to 1,500 (her husband's) and 400 (hers) ZAR respectively. The child support grant (300 ZAR per child per month) provides them with a much needed additional income.

Mrs L.'s narrative is by no means unique. Rather, several aspects of it are common to the majority of the black population of Vaalwater, namely: leaving a farm either voluntary or under coercion; looking for a new place to live; and basing their livelihoods on a combination of low wages and social grants. When these people started to relocate to town, they occupied the same land originally intended for a 'native location'. The first shacks of the post-apartheid period appeared in the early 1990s that is to say, immediately after the repeal of several segregation laws. Whereas the first RDP (i.e. state-subsidized) houses were delivered in 1997, thus marking the official beginning of the township[55] of Leseding on the grounds of what became known as extension 1. Nonetheless, residents complained about the quality of housing received and waited for the delivery of a new housing scheme in 1998 (that is, extension 2). After both extensions were occupied, a housing shortage occurred, so that people started to illegally occupy the rocky and uneven grounds to the south of extension 2 in 2000. This was the beginning of extension 3, a shack settlement next to the local dumping site. In order to provide better housing to the residents of extension 3, a piece of land to the north of Vaalwater town was set aside for the development of extension 4 in 2007. However, as more people applied for an RDP house in Leseding, extension 3 was never emptied and instead it was formally recognized as a residential area in 2013. The arrival of more people brought to the establishment of two other shack settlements, namely extension 5 and 6. While the former is recalled for appearing overnight in 2009, residents in the latter claim to have been residing there since 2001. Map 2.2 shows the subdivision of Vaalwater into separate areas and the location of the boreholes, from which water services are sourced.

***Map 2.2** Vaalwater town (ca 2015)*



Source: Elaboration of the author based on the 1: 50 000 map 2428AC Vaalwater (Chief Directorate National Geo-Spatial Information, Cape Town, 2005) – Current scale of 1: 42 500

Water shortages occur only within the boundaries of Vaalwater, whereas on private farms across the plateau water is usually abundant. For this reason, it is possible to argue that scarcity has been socially produced, in that a major relocation of people has not been accompanied by an adequate reallocation of resources. Indeed, the historical distribution of water in the Waterberg, although rooted in colonial appropriation and racial segregation, has been maintained and protected in the post-apartheid order.[56] In other words, water scarcity represents a new round of dispossession, as blacks are pushed off the land and in this way, they are deprived of access to water.

The allocation of more water resources to the municipality for the purpose of increasing water supply in town has been opposed by the central level of the state on the basis that those resources still available have already been allocated to more 'strategic' uses (see Chapter 3). This is clearly illustrated by the second most significant change in the Waterberg's waterscape over the last 20 years, namely the renovation of the Mokolo Dam (former Hans Strijdom). Funnily enough, once nature conservation (in the form of game farming and ecotourism) had established itself as a major productive activity on the plateau, some 100 km to the north of Vaalwater the Waterberg Coalfields were rediscovered as the last coal reserves of South Africa and their exploitation deemed essential to solve a severe electricity crisis, which had affected the whole country since the mid-2000s (McDonald 2011). In 2010, Eskom received a 3 billion USD loan from the World Bank (WB) to fund the construction of a new coal power station at Medupi, to the west of Lephalale. Once completed,[57] Medupi will be the world's third largest coal power plant and its water demand will be three times higher than that of similar stations (estimated at about 15.35 million cubic metres, Mm^3, per year; Eskom Environmental Manager, personal interview, 18 October 2013). This is due to the introduction of Flue Gas Desulphurisation technology, a condition imposed by WB to reach certain standards of environmental sustainability (Baker 2012). As a result, the then Department of Water Affairs (now Department of Water and Sanitation) allocated the Mokolo River to securing Medupi's water needs (together with those of expanding Grootegeluk coal mine and Lephalale town) and launched the Mokolo Crocodile (West) Water Augmentation Project (MCWAP). This project is composed of two phases. Phase 1

(started in 2011 and completed in 2015) aimed at increasing water extraction from the Mokolo Dam by building a new pumping station and 60 km of pipeline from the dam to Lephalale. Whereas phase 2 (started in 2015) aims at enlarging the Mokolo River's flow by abstracting and transporting water from the Crocodile River near Thabazimbi town to Lephalale.

2.4 Conclusion

This chapter has shown a pattern of continuity (amid some apparent changes) regarding the appropriation, transformation, and distribution of water resources along the colonial, apartheid, and post-apartheid periods. This pattern rests on three main elements. First, since the European colonization of the Waterberg, its local waterscape has been produced to accommodate the needs of a small class of white farmers (which has evolved from subsistence to commercial production). And yet, the development of irrigation (on which, at the beginning of the twentieth century, South African modernization was fundamentally based) has been constrained by the availability of private capital. Second, in light of the modest agricultural potential of the plateau, its major water source, namely the Mokolo River, has been allocated to much more profitable sectors, such as mining and energy production. As these productive activities are located in the Limpopo Plains to the north of the plateau, the latter serves the purpose of a catchment area and for this reason local water uses (both productive and domestic) must be limited, rather than expanded. Finally, the most basic water needs (that is, domestic) of the black population of the Waterberg have been consistently overlooked either by transferring the responsibility for their water supply to the Bantustan administration or by allowing them to suffer from serious water shortages.

The fact that the most pressing feature of the Waterberg's waterscape today, namely the occurrence of water scarcity in Vaalwater, is proper to the post-apartheid period is obvious. Simply put, the town planning and consequent development did not envisage the possibility that a large number of black people could reside in Vaalwater and be entitled to receive water services. However, it is precisely this history of colonial appropriation and racial segregation that shows how scarcity has been produced through social relations of power and must be understood in terms of inequality – after all, white landowners have not been suffering from any

shortage of water hitherto. In relation to this, the next chapter takes a political economy perspective on the South African water reform to determine some of the reasons hampering water redistribution in the Waterberg.

Notes

[1] See Thompson (2001: 5) and Phillipson (2005: 4-6) for a critique of applying the categories of 'Stone' and 'Iron Age' to the history of Southern Africa.

[2] Boeyens et al. (2009) uncovered and studied artefacts related to infant pot burials by African mixed farmers at a site called Melora Saddle, currently located within Lapalala Wilderness private nature reserve.

[3] Afrikaners were especially disappointed with the British government's interference in their relationships with the labour force composed of native Khoikhoi (pastoralists) and imported slaves. In 1828, Khoikhoi were declared equal with whites before the law and by 1838, slaves had been freed and their condition translated into that of 'apprentices' (Thompson 2001: 58-60).

[4] Yet, Walker and Bothma (2005) note that the first white farm to be registered in the Waterberg dates back to 1848.

[5] However, the author suggests that this figure must have been higher before 1867.

[6] National Archives Repository (hereafter NAR), Report on the Waterberg District by the Director General of Military Intelligence Major French (1903), GOV 631 PS 2/04.

[7] Ibid.

[8] The specific aim of this University of the Witwatersrand History Workshop paper is to look into the production of the Waterberg as a narrative by English-speaking settlers, who started to reside in the area in the late 1880s. However, its importance for the present study goes beyond that, in that this is the first text to provide some coordinates about the social history of the Waterberg in the early 1900s.

[9] This was indeed the most common way in which Afrikaners secured African labour on their farms (Beinart and Delius 1986: 25).

[10] The term Highveld indicates a region located at high altitude whose vegetation is characterized by open, uncultivated grassland (veld). For a definition of Bushveld, see Note 2 in Chapter 1.

[11] Not to be confused with the commandant of the Waterberg Commando, F. Grobler.

[12] NAR, Report upon the District of Waterberg Anent the Various Native Races and their Divers Circumstances by Mr Grobler (1901), SNA 67 NA 2338/02.

[13] Although Cana (1911) does not report any population figure for the Waterberg District, it provides the number of 'native' inhabitants of the Zoutpansberg as per the 1904 census (i.e. 314,797). Now, this figure appears very close to the population data for the same district mentioned by Grobler in 1901 (i.e. 300,000). From the Native Commissioner's report it can be inferred that the latter figure refers to the whole population of the Zoutpansberg (that is, white and black). However, note that Grobler does mention a census without providing any further details on it.

[14] As an institution, the Superintendent of Kaffir Tribes was therefore completely independent from the office of the *Superintendent van Naturellen* ('Superintendent of Native Affairs'), namely a local emanation of the central Department of Native Affairs for Transvaal, which was in turn created following the British annexation of the republic in 1877.

[15] Although the war was fought in the Waterberg District, the plateau itself offered refuge to the Waterberg Commando, which was unwilling to fight (Hofmeyr 1987: 3), and to Boer women trying to avoid confinement in the concentration camp in Nylstroom (van Heyningen 2013: 106).

[16] NAR, Correspondence internal to the Intelligence Northern Districts and between the latter and the Superintendent Native Affairs (1901), SNA 95 NA 201/03.

[17] NAR, Correspondence between the Secretary for Native Affairs and the Acting Private Secretary to the Lieutenant-Governor of the Transvaal (1903), SNA 67 NA 2336/02.

[18] Freund (1992) points out that 'poor whites' are a social construct including a certain degree of economic differentiation. In the context of eastern Transvaal, Morrell (1992) distinguishes among: *bywoners* (meaning landless tenants); landowners forced to sell their farm and become smallholders; and people who had lost any access to the land and had become fully proletarianized.

[19] Indeed, the poor white question was eventually solved by the state not by means of resettling whites on the land, but by providing them with skills and education (Freund 1992).

[20] NAR, Letter from the Secretary for Lands to the Director of Agriculture (1907), TAD 715 G 3204.

[21] Ibid.

[22] According to Ballim (2015: 1244), at the beginning of the twentieth century, the same term was mainly referred to 'settlers from overseas with enough capital to produce crops for market sale' within the neighbouring Bushveld district of Potgietersrus (today's Mokopane).

[23] Tobacco farming was (and still is today) favoured by the sandy soils of the plateau and from the 1930s the Waterberg Magisterial District belonged to the Magaliesberg Cooperative (based in Rustenburg), namely the biggest tobacco producer of the Union. Government Publications Collection (William Cullen Library, University of the Witwatersrand), Tobacco Board Annual Reports 1959–1996, PER HD 9147 T6.

[24] In this context, the word 'township' means 'an area of land to be subdivided and sold by developers as freehold residential or industrial plots' (Simpson and Weiner 1989).

[25] NAR, Proclamation by the Deputy-Administrator of the Province of Transvaal No. 335, 1953, TRB 2/1/268 61/4/989.

[26] Conversely, most of the houses in Vaalwater are on sale today, since a black township is perceived to be 'encroaching' on the bush.

[27] NAR, Letter from the Acting Provincial Secretary to the Director of Irrigation (1952), TRB 124/0/65 2/1/651.

[28] NAR, Letter from unknown sender to Mr Holtzhausen (1952), TRB 124/0/65 2/1/651.

[29] Ibid.

[30] NAR, Letter from the Head of the Department of Local Areas to the Director of Vaalwater Development Company (1976), TRB 124/0/65 1 2/1/651.

[31] I am in possession of a copy of the original notarial deed dated 1990.

[32] Groundwater was legally defined private property until 1998 (see Chapter 3).

[33] According to the Water Act of 1956, a GWCA defined an area that was going to be affected by a government waterwork and where no infrastructure could be altered or erected without the Minister's authorization (see more on this in Chapter 3). The Mokolo River GWCA covered the river bank between the future dam site and Nylstroom, whereas the Hans Strijdom Dam Catchment GWCA comprised a larger buffer zone.

[34] For instance, farmers were notified of what qualified as 'lawful' water uses, namely the possibility to employ a maximum of 9,150 m^3/ha/y for irrigation purposes (for a maximum of 15 ha of land) and the prohibition to alter or build waterworks for storage purposes (DWAF 2007b: 15).

[35] This comprised all land on both banks of the river within a distance of 200 m, from a farm to the south-east of the dam up to the confluence of the Mokolo with the Limpopo River. NAR, Proclamations by the State President of the Republic of South Africa No. 250, 1970: Mokolo (Mogol) River Subterranean Water Control Area, District of Waterberg, Transvaal – Establishment, TRB 124/0/65 1 2/1/651.

[36] NAR, Letter from the District Representative of the Department of Public Works to the Native Commissioner for the Northern Areas (1948), HKN HN 9/15/3.

[37] NAR, Letter from the Secretary for Native Affairs to the Secretary of the Townships Board (1949), HKN HN 9/15/3.

[38] The Board also opposed the idea that the township owner should donate more land for the housing of servants as that would reflect in higher land prices for the 'servantless class', that is to say low- and middle-income white households. NAR, Letter from the Chairman of the Townships Board to the Secretary for Native Affairs (1949), NTS 779/313.

[39] NAR, Report on the Township of Vaalwater, Waterberg: Reservation of Location Site by Secretary of the Townships Board (1951), NTS 779/313.

[40] These numbers also include the farm Hartebeestpoort. NAR, Letter from the Nylstroom Magistrate to the Provincial Secretary of the Division of Local Government (1954), TPB 3038 3/1/147.

[41] NAR, Petition to the Administrator of Transvaal (1954), TPB 3038 3/1/147.

[42] NAR, Memo by the Commissioner for the Urban Areas Mr Greyvenstein (1957), HKN HN 9/15/3.

[43] By this time, only 50 plots had been sold and of these only a couple had been developed (Ibid.).

[44] Mr Holtzhausen's private land became de facto a temporary location, whose presence was justified on the basis that its occupiers were all employed in the town and there at least they could have access to water (Ibid.).

[45] NAR, Letter from the Regional Undersecretary to the Secretary of Planning (1964), BEP 542 G7/735.

[46] Ibid. The development of the township proper was further hampered by the fact that activities seemed more likely to flourish outside its boundaries. For instance, two 'progressive and far-seeing' farmers (a Mr Farrant and Mr Bekker), who neighboured Vaalwater, had decided to start some commercial activities (a hotel, a garage, and two shops) on their own farmland rather than in the township. NAR, Memo by the Commissioner for the Urban Areas Mr Greyvenstein (1957), HKN HN 9/15/3.

[47] NAR, Letter from the Regional Undersecretary to the Secretary of Planning (1964), BEP 542 G7/735.

[48] NAR, Memorandum by the Director of Labour and Housing (1978), BAO 3/2034 6/5/2/V3.

[49] NAR, Letter from the Secretary to the Chief Director of the Bantu Administration Board Northern Transvaal (1978), TRB 2/1/488 79/0/65.

[50] Whereas the plateau is almost equally divided between Modimolle and Lephalale Local Municipality.

[51] See Chapter 4 for a discussion of these transactions.

[52] Income statistics for the Waterberg are found in Chapter 4. Here, it is useful to introduce some data relative to the national level. The major statistical tools employed to measure poverty in South Africa are the Income and Expenditure Survey (IES) and the Living Conditions Survey (LCS). According to the most recent IES (compiled for the period 2010-11), the average annual income of black African households was 69,632 ZAR, that is to say about half the average annual income of the whole population (i.e. 119,542) and less than one fifth of the average annual income of white households (i.e. 387,011) (Stats SA 2012: 11). This trend is confirmed by data on household consumption expenditure, which show that the average annual income expenditure of black African households (i.e. 55,920 ZAR) was about half the average annual consumption expenditure of the whole population (i.e. 95,183) and less than one fifth of the average annual consumption expenditure of white households (i.e. 314,524) (Ibid.: 9).

[53] The arrivals of Zimbabweans also increased following the country's political and economic crisis in the early and mid-2000s.

[54] The actual name of the respondent is omitted for anonymity reasons.

[55] During apartheid, the term 'township' came to identify a residential area designated for black occupation.

[56] See Chapter 3 for a discussion of this issue from a legal perspective.

[57] Medupi's construction (which started in 2007) has been delayed several times (in March 2015, the first of six units was finally connected to the national grid) and it is now expected to reach completion by 2019. In the meantime, Hitachi (the company that won the bid to build the plant's boiler) has been charged with corruption (involving the African National Congress) by the United States-based Securities and Exchange Commission and agreed to settle by paying a 19 million USD fine (Hunter 2015). On Medupi, see also Rafey and Sovacool (2011).

3 A political economy of the South African water reform

The aim of this chapter is to critically discuss the water reform initiated by the ANC in the mid-1990s by looking at the changes it brought in the governance of water resources and services and their implications from a political economy perspective. A political economy of water is defined here as an approach that focuses on the ways in which water is integrated into processes of capital accumulation and on who wins (and conversely who loses) from such processes (Barkin 2010, Loftus 2009). South Africa is currently going through a major water reform, but few of its citizens seem aware of it. This is probably explained by the fact that it has been overshadowed by the land reform process and that no formal connections between the two have been established by relevant departments until very recently. Nonetheless, key questions remain, many of which have only partially been addressed by a literature that, with the exception of Woodhouse (2012b), appears to have little interest in political economy analysis (Bourblanc 2015; Bourblanc and Blanchon 2014; Liebrand et al. 2012; Mapedza et al. 2016; Mehta et al. 2014; Movik 2012, 2014; Movik et al. 2016; Schreiner and Hassan 2011; Schreiner and van Koppen 2002; Tapela 2008; van Koppen and Schreiner 2014a, 2014b; van Koppen et al. 2014):[1] what is the goal of the water reform? who are its primary beneficiaries? what are the conditions for water redistribution?

To situate the South African water reform within a broader political economy framework helps reveal its ultimate aim. Both the National Water Act and the Water Services Act in fact, that is to say the two cornerstones of the reform, adopt aspects of the neoliberal paradigm in water resources management that emerged internationally in the early 1990s (Bakker 2007, Budds 2004, Goldman 2007, McDonald and Ruiters 2005, Swyngedouw 2005). The term neoliberal is employed here in the same sense as applied by Arsel and Büscher (2012) in relation to environmental policy and conservation, namely to encourage the incorporation of nature into capitalism (and vice versa) as a strategy for the accumulation of capital. This means that environmental problems are dealt with by creating

capitalist markets for environmental commodities.[2] The new water paradigm followed from framing global water scarcity as an imminent environmental crisis that needed a new system of water governance.[3] By overlooking issues of distribution and justice, scarcity has been constructed as a universal and 'natural' phenomenon able to justify political interventions to the benefit of the powerful (Mehta 2010). This paradigm gained international legitimacy at the International Conference on Water and the Environment held in Dublin in 1992. The major outcome of the conference was the proclamation of four guiding principles, from which the notion of Integrated Water Resources Management (IWRM) was later derived (Mehta et al. 2014). These are: an ecological principle, which calls for an holistic approach to the management of water resources combining social and economic development with the protection of natural ecosystems; an institutional principle, which calls for a participatory approach to the management of water resources within a context of decentralization; another institutional principle, which calls for more attention to gender issues; and an economic principle, which calls for the recognition of water as an economic good whose economic value has to be better determined for the purposes of efficiency, equity, and conservation (ICWE 1992). Of these, the economic principle had the most profound effects, as it proposed to address scarcity not by increasing supply (as it had been common in the past), but by reducing (that is, 'managing') demand through pricing water volumetrically or selling water licences (Lankford 2010: 198). Furthermore, this principle introduced a 'derivative' right to water (services), as it states that 'it is vital to recognize first the basic right of all human beings to have access to clean water and sanitation *at an affordable price*' (ICWE 1992, principle 4, italics are mine). The term derivative is employed here in the sense used by Harvey (2006: 56) to describe those individual rights, which are secondary to a 'liberal bundle of rights necessary for capital accumulation', such as the right to private property. Therefore, to establish a right to affordable access to water means first and foremost to ratify water commodification as the only possible way to deliver water to people. Yet, there is nothing inherent in a market for water and the 'commodity description' of this resource would rather be 'fictitious' in the language of Polanyi (2001: 75-6), since 'the postulate that anything that is bought and sold must have been produced for sale is emphatically untrue in regard to [it]'.

The chapter makes two points. First, it shows that white commercial farmers are the main beneficiaries of the water reform within a context where agriculture consumes about 60 per cent of the country's water resources and the whole agro-food sector is characterized by concentration rather than a broadening and deracialization of land ownership (Bernstein 2013, Greenberg 2015). This reiterates and expands upon Movik's (2012: 138) argument that the reform transformed their entitlements to water use into 'fortified rights'. Second, the chapter argues that the redistribution component of the reform privileges accumulation over social equity. Besides agriculture, water is channelled into the so-called 'minerals-energy complex', namely a historical site of accumulation centred on the availability of coal and labour for the production of cheap electricity to be used by a minerals-based and export-oriented industry (Fine and Rustomjee 1996). Together, these two points contribute to the overall argument of my dissertation by proving that both causes and solutions of water problems in the Waterberg cannot be confined to the local level. Instead, water poverty and inequality in the Waterberg represent a local manifestation of the effects of the regime change in water management that took place on the national level and that in turn was influenced by international developments (that is, the transformation of global capitalism).

The chapter is organized in three main sections. The first section reviews the colonial and apartheid water legislation. The second section explores how white commercial farmers (or white landowners, for that matter) became the main beneficiaries of the reform by introducing and discussing the notion of 'existing lawful uses'.[4] Finally, the third section considers the specific conditions for redistribution of water resources that allowed private and state accumulation to prevail over social equity.

3.1 Before 1998: Private vs. public water

It is important to start this chapter by reviewing the major tenets of the previous water legislation in order to appreciate the regime change introduced in the post-apartheid period and to understand white landowners' stance on water today as historically shaped. The first element to consider is that the colonial and later apartheid water legislation merged together the Roman-Dutch and British legal traditions and was founded on the distinction between private and public water. Private water was defined as

groundwater to be found below someone's land and surface water that would naturally rise, fall, or drain into someone's property. This was deemed private property of landowners, who could dispose of it as they wished. Public water, on the other hand, was interpreted as water flowing, found in, or derived from a public stream, meaning a natural stream (either perennial or seasonal) flowing in a known and defined channel and capable of being commonly used for irrigation purposes by two or more riparian (that is, situated on the stream's banks) properties (RSA 1956, s. 1). The doctrine of riparianism granted riparian landowners the right to use public water, but did not confer on them an exclusive property right over the resource. Movik and de Jong (2011: 70) describe this water use right as a usufruct right to a property held in common by all individuals owning land adjacent to the same public stream. For this reason, abstraction of public water was regulated by the state through the principle of reasonable water use, meaning that no user could limit another's enjoyment of the flow as they all shared equal use rights to it. In practice, water allocation for agricultural and urban purposes was determined by water courts, which were also responsible for calculating the normal flow of any public stream under their jurisdiction (whose water could be diverted, but not stored) as distinct from its surplus flow (whose water could be dammed). In this way, water use rights were firmly embedded into land property rights (thus cementing the land-water nexus) and, following the proclamation of the Natives Land Act of 1913,[5] access to water became instrumental in racial segregation.

Chapter 2 has shown how at the beginning of the twentieth century the Union of South Africa embarked on a 'hydraulic mission' (Swyngedouw 1999), whereby state intervention in water provision was considered essential to achieve modernization. The establishment of the public water utility Rand Water Board in 1903, following the discovery of gold in the Witwatersrand and the growth of its local population, is illustrative of the state taking direct action in the supply of water services (Turton and Meissner 2002: 40). Whereas, with regard to raw water, the Irrigation and Conservation of Water Act of 1912 was concerned with the promotion of large-scale irrigation systems resting on big dams (Beinart 2003: 186, see also Kaika 2006 on dams as symbols of modernization). Irrigation in fact was deemed not only necessary to increase the productivity of white settler

agriculture, but also strategic in attracting white settlers to the rural areas of the country.

The Water Act of 1956 favoured instead industrial water uses by partially curbing the use rights of riparian landowners through the declaration of Government Water Control Areas (GWCAs – to include subterranean water). These were defined as land affected or likely to be affected by a government waterwork, or land (including non-riparian land) where the use of public water was going to be controlled by the government in the public interest (RSA 1956, s. 59). Within a GWCA, the right to use public water was transferred from the riparian landowners to the Minister of Water Affairs and Forestry, who could grant the former provisional rights, permissions, or a specific allocation in order to abstract, impound, or store water. As has been seen in Chapter 2, this was the legal means employed by the government first in 1969 and then in 1985 to set aside water in the Waterberg for the development of Eskom Matimba Power Station and Exxaro Grootegeluk coal mine.

Notwithstanding its intervention in both domains, the Union and later apartheid state achieved a very different degree of control over water services as opposed to water resources. Here, it is agreed with Movik's (2010) interpretation that while water services became increasingly provided and thus controlled by the state (intended as either a local authority or the Minister), the management of raw water was largely left to riparian landowners, who were encouraged to organize themselves in irrigation districts (when three or more landowners wanted a combined system of waterworks for irrigation purposes) and to elect their own irrigation board (whose powers included that of measuring and dividing the flow of public water among landowners). Therefore, the power over local water resources acquired over the years by white commercial farmers, the fact that water use rights were clearly stated in land deeds, and, more fundamentally, the difficulty in providing an unambiguous answer to the question: who owns the water?, all contributed to construct white landowners' perception that water rightly belonged to them as private property.

3.2 Entrenching white privilege: The invention of existing lawful uses

The main novelty introduced by the National Water Act of 1998, which is the law governing the management of the country's water resources, is the shift from a riparian use rights to an administrative use rights system of water allocation (Movik 2012: 6). This means that water use rights (in relation to any water, as the distinction between private and public ceases to exist) do not rest upon private property rights to land anymore, but are based upon an administrative authorization, that is a (temporary) licence. To mark such change, the very term 'water rights' disappears from the Act to be replaced with 'entitlements to water use'.[6] A fundamental precondition for introducing the new regime of water allocation was to vest the authority over water resources in the government. For this reason, the Water Law Review Panel established in 1995 to draft the new Act brought the so-called 'public trust doctrine' from the United States environmental law (Blackmar 2006, Sax 1970) into the South African water law. While the preamble of the National Water Act states that 'water is a natural resource that belongs to all people', section 3 affirms the following (RSA 1998):

> 3. (1) As the public trustee of the nation's water resources the National Government, acting through the Minister, must ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all persons and in accordance with its constitutional mandate.
>
> (2) Without limiting subsection (1), the Minister is ultimately responsible to ensure that water is allocated equitably and used beneficially in the public interest, while promoting environmental values.
>
> (3) The National Government, acting through the Minister, has the power to regulate the use, flow and control of all water in the Republic.

The notion of 'public trustee' has opened a debate on the legal status of water itself: is water in South Africa a public or common good? And how to qualify the new legislator's action vis-à-vis former private property and usufruct rights: is it a case of deprivation (that is, regulation) or rather expropriation? Chapter 5 analyses in detail the categories of private, public, and common in relation to water resources (and services) drawing on the

specific context of the Waterberg. For now it suffices to say that while some authors understand public trusteeship as state ownership (hence, nationalization), whereby the state is a proxy of the nation representing the people (Pienaar and Van der Schyff 2007), others such as Stein (2005: 2178) recognize 'water-use rights as public in nature', but argue that they are not vested in the state, which is 'a mere custodian or trustee of legal title to water as public property'. What is clear is that, provided that it respects the founding principles of the Act, namely sustainability and equity, the government has the power to decide who has access to the resource and who is excluded from it.

One of the most crucial decisions that the ANC government took in this regard and that explains how white commercial farmers were to benefit the most from the water reform, was that of leaving material conditions of access to the resource unchanged by inventing the notion of 'existing lawful uses' (ELUs). ELUs must be read as a translation of the Constitutional safeguard of private property rights (RSA 1996, s. 25) within the context of water resources. In line with analyses of the South African transition focused on the continuities between apartheid and post-apartheid capitalism (Alexander 2003, Bond 2000b, Marais 2011), it is possible to argue that the ANC deemed private control over water necessary to sustain white (agrarian) capital and its contribution to the country's economic growth – the foundation of the negotiated settlement. That maintaining access to water for accumulation purposes provides a key to understanding the reform is demonstrated by the fact that the definition of ELUs does not include customary water rights of black small-scale farmers in the former Bantustans (Movik 2012, van Koppen and Schreiner 2014b).

ELUs are introduced in the Act as one of the four categories of permissible water uses, together with Schedule 1 (domestic uses at the household level that are exempted from government's authorization), general authorizations (ad hoc authorizations that bypass the licencing process), and licences. Literally, they are defined as any water use taking place in the two years before the issue of the Act and compliant with any legislation in force at that time. In practice, they allowed white commercial farmers, who as a social group controlled the majority of the country's water resources, to proceed with their water-related activities without the obligation to apply for a licence. The Act partially justifies ELUs as a transitional measure, as these are supposed to be converted into licences through the

mechanism of compulsory licencing. However, not only the conversion has been a very slow process hitherto, but also the ways in which ELUs are turned into licences show how unequal access to water resources is simply transferred, rather than questioned, to the new system of water allocation. For instance, in case an individual with a recognized ELU is refused a licence or receives a licence for a lower amount of water, thus resulting in a financial loss, they can claim compensation. Similarly, when in 2013 the then Department of Water Affairs (DWA)[7] suggested to implement the principle 'use it or lose it' with the aim to transfer those water amounts that were not being used 'productively' by commercial farmers into a common pool to be managed by the department, this was accompanied by the guarantee that ELUs would be duly compensated for that, as DWA did not intend to be accused of 'water grabbing' (Water Services Senior Policy Specialist DWS, personal interview, 3 June 2014).[8] Yet, the term water grabbing usually refers to the appropriation of resources by the powerful that implies dispossessing the poor (Mehta et al. 2012). Whereas it is difficult to see any injustice in the state taking water away from actors whose access to the resource was in the first place based on a system of racial discrimination (although the question then becomes: what is it going to do with that?).

Through ELUs, white privilege in access to water has been entrenched in the very process of licensing, which in turn is the basis for redistribution. In order to understand this, it is necessary to consider how the notion of scarcity informed the National Water Act and what (competing) meanings were attributed to it by the department. The Act opens by stating that 'water is a scarce and unevenly distributed national resource' (RSA 1998, preamble). Here, a conceptualization of scarcity as an absolute phenomenon is combined with a political framing of it focusing on issues of distribution (Scoones et al. 2014). And yet, when DWS argues (as it commonly does) that South Africa is a water-scarce country because it receives too little rainfall, it is absolute scarcity intended as a physical limit that prevails (Tapela 2012).[9] Although scarcity is not explicitly mentioned anywhere else in the text, it provides a foundation for the whole Act. This is evident in the preoccupation with the need to quantify how much water is available in any catchment area at any given time, by creating a national monitoring system collecting information on water volumes, quality, and use (RSA 1998, ch. 14) – a major component of a biopolitics of water. For this

purpose, since 1998 the department has been launching a number of databases aimed at gathering records in the following fields: surface water (HYDSTRA); groundwater (NGA, GRIP, HYDSTRA); rainfall (SAWS); fitness for use (NMWQMP, NEMP, NTMP, GIS, Rivers database, BDS, GDS); compliance and performance (RPMS, ECMS, NCIMS); water uses (WARMS); licences (WULATS); and irrigation (SAPWAT) (DWA 2013a: 91, Movik and de Jong 2011: 75-6).

In preparation to the second National Water Resource Strategy (NWRS)[10] published in 2013, these databases were employed to compile a series of 'reconciliation strategies' commissioned by DWA with the aim to find out what the water demand of the country was vis-à-vis its water supply and to suggest solutions to possible imbalances. This reflects a shift in the conceptualization of scarcity from absolute to relative that is, relative to use and to other resources that could substitute water (Scoones et al. 2014). A first type of reconciliation strategies covered large systems supplying major economic nodes (for instance, the Limpopo North Reconciliation Strategy, which was actually initiated only in 2015). Whereas the so-called 'All Towns Reconciliation Strategies' covered all the remaining settlements in the country (for instance, Vaalwater, whose strategy was completed in 2010). On the basis of these studies, DWA argued that South Africa will need to use a mix of water resources in the future, namely: water demand management; groundwater management; re-use of water; control of alien invasive vegetation; water reallocation; inter-catchment transfer; and surface water development (DWA 2013b: 18). Indeed, what matters the most when framing scarcity in relative terms is to mitigate its effects through price signals and technological innovation.

Data collection on water uses is dependent upon users registering themselves and their water-related activities in the Water Authorisation and Registration Management System (WARMS) database. Registration is compulsory for the following uses (referring to both surface and groundwater): irrigation, watering livestock, industrial, mining, power generation, recreation, urban and water supply services. Failure to register is punishable by a fine and even imprisonment, but enforcement mechanisms are largely lacking. Upon filling in and submitting a form to the regional DWS office, users are provided with a registration certificate, which some mistake for an entitlement to use water. Non-registration has occurred, but so has over-registration. The former concerns particularly groundwater

consumption, as landowners have largely been reluctant to register their boreholes. As a result, very little is known about this resource and private and unregulated use prevail across the country. Whereas the latter derives from white commercial farmers thinking that by over-registering their uses, they were protecting themselves from the government taking away 'their' water for reallocation purposes (DWAF 2007b, Movik 2012). This explains why in relation to ELUs, registration has been followed by a process of validation and verification of water uses. Chapter 4 will say more about this with regard to the Mokolo River catchment in the Waterberg plateau. In general, Woodhouse (2012b) notes that a fundamental problem with this endeavour to quantify is that no one knows exactly how much water is being used by commercial farmers. That is to say, farmers themselves and the irrigation boards they belong to usually have some knowledge of that, but there are no water meters on farms and farmers do not necessarily keep records of how much water they use.

This becomes relevant in the present discussion because the process of licensing is conditional upon the determination of how much water is available in a certain catchment, followed by the calculation of how much of that water is actually *allocable*. The latter is obtained by subtracting from the former those water amounts earmarked to meet four specific requirements. The first requirement is the so-called 'Reserve', which has two components representing environmental and social objectives. The ecological reserve refers to the amount required for the protection of the aquatic ecosystems of a specific resource, something which has mostly proven too complex to quantify. Whereas the basic human needs reserve refers to the amount required to guarantee that people depending upon a certain water resource have enough water for drinking, cooking, and personal hygiene, something which has been fixed at 25 litres per person per day. The second requirement are international obligations related to water, such as the Inco-Maputo Agreement that binds South Africa, Mozambique, and Zwaziland to cooperatively manage the transboundary river basins of Incomati and Maputo (Schreiner and Hassan 2011: 255). ELUs, despite the above-mentioned issues relating to their quantification, represent the third requirement. Whereas the amount needed to redress racial and gender discrimination in access to water, notably the most difficult to calculate (at least until the publication of clear targets in 2008), comes fourth. Now, since the first and fourth requirements are rarely translated

into actual numbers and international water agreements do not concern all catchments in the country, allocable water usually means water that is not allocated to ELUs.

The foregoing reflects an understanding of water scarcity as 'overallocation'. This is problematic because it does not simply overlook the unequal distribution of resources in the country, as it is common to find in international indicators of scarcity using national averages,[11] but it fundamentally legitimizes such inequality. In other words, the political dimension of scarcity, intended as the way in which it is affected by historical unequal patterns of resource access and control (Scoones et al. 2014), clearly stands out, and yet it is subsumed into a supposedly neutral, technical notion. The fact that the department was interpreting scarcity as overallocation became clear with the publication of its Water Allocation Reform (WAR) strategy in 2006. WAR prioritizes compulsory licensing, intended as the mechanism through which all water use authorisations in a catchment are reconsidered, in water-stressed areas that are defined as 'areas where the existing use and additional demands for water exceeds the water available' (DWAF 2006: 8). A serious tension emerges here, in that although WAR's first objective is to promote equity in water access, existing use is not questioned from an equity perspective. Instead, water inequality becomes naturalized, meaning that it is seen as normal and unchangeable (Smith 2010: 29).

As it became evident that white farmers were still holding the majority of water use authorizations, were submitting the biggest number of applications for water licences, and were trading their entitlements without any regulatory framework in place, the department acknowledged the need to make equity central to its allocation policy. For this reason, a new Water Allocation Reform Strategy (WARS) was published in 2008, whose objective was to redress racial and gender imbalances in the allocation of (raw) water. Nonetheless, the national targets set to achieve this confirm that DWAF had no intention to address the structural causes of inequality, as they stated that 60 per cent of allocable (as opposed to available) water must be allocated to black people by 2024 and half of it must go to women (DWAF 2008: 4).

Although the National Water Act furthers the centralization of control over the country's water resources, it also provides for the decentralization

of their governance through the establishment of various managing institutions at the catchment level, such as Catchment Management Agencies (CMAs) and Water User Associations (WUAs). This offered white commercial farmers another opportunity to retain control over local water resources. WUAs, for instance, are a case in point. These were meant to transform the former irrigation boards, whose membership was composed exclusively of white irrigation farmers, into more inclusive bodies. However, they are still largely dominated by white interests and even though the Act defines them as 'co-operative associations of individual water users who wish to undertake water-related activities for their mutual benefit' (RSA 1998, ch. 8), they hold a strong advisory power in the licencing process, which in turn is going to be administered by CMAs (of which WUAs will be part).[12]

3.3 The redistribution process: Accumulation vs. social equity

During apartheid, racial segregation and discrimination highly influenced access to water not only by linking the use of raw water to private land ownership (from which blacks were largely excluded), but also by limiting state investment in water infrastructure serving the black population. This was particularly evident in the Bantustans, where water reticulation was lacking.[13] In Lebowa, for example, where black residents of the Waterberg were relocated in the 1970s, 'all the dams are relatively small and have a limited ability to supply water to communities. As a matter of fact, many communities rely on smaller rivers, streams, fountains and boreholes for their daily water supplies' (Koornhof 1982: 197). As a result, by 1994 about 12 million people were without access to water facilities and about 21 million were without access to sanitation facilities (DWAF 2003: 1). The national health concerns related to this situation prompted the newly reformed DWAF, led by human rights lawyer Kader Asmal, to prioritize water services backlogs by extending the water network so that black households could have access to a safe and reliable source of water either inside their homes (understood in a broader sense to include yards) or at a reasonable distance from them (i.e. a maximum of 250 m).

This is the context in which, as noted by Woodhouse (2012b: 848), water services emerged as a distinct water sector and a priority in the political debate, whereas productive uses of water (especially in agriculture) were left to the margins.[14] The separation between water services and water resources was reinforced by the publication of a distinct Act dealing with the provision of drinking water for domestic uses, namely the Water Services Act of 1997, prior to the issue of the National Water Act. And yet, both the provision of water services and that of water resources were incorporated into processes of capital accumulation to the detriment of social equity.

The Water Services Act and related policies transformed drinking water supply from a public service into a commodity (albeit imperfect, Bakker 2003) in three connected ways. First, the juridical foundation of the Act is section 27 of the Constitution, which states that 'Everyone has the right to have access to […] sufficient food and water' (RSA 1996). However, the Constitutional mandate to progressively realize everyone's right to *sufficient* water was translated into a commitment to deliver *basic* (that is, minimum) supply to everyone, as the Act's first objective is 'to provide for the rights of access to basic water supply and basic sanitation' (RSA 1997, s. 2).[15] As a result, the individual right to access drinking water became secondary to that of participating in the market for the same commodity. Given the public health concerns related to access to clean water, section 4.3.c provides a safeguard against absolute deprivation: 'Procedures for the limitation or discontinuation of water services must […] not result in a person being denied access to basic water services for non-payment, where that person proves, to the satisfaction of the relevant water services authority, the he or she is unable to pay for basic services' (RSA 1997).

Second, the concern over the affordability of basic services (as opposed to water services in general, like in the past)[16] derives from their commercialization via 'cost recovery'. This is introduced as basis for water services pricing in section 10.3 of the Act, which lists those factors that every local water service authority needs to take into consideration when setting their own tariff policy, namely:

1) any national standards […];
2) social equity;

3) the financial sustainability of the water services in the geographic area in question;

4) the recovery of costs reasonably associated with providing the water services;

5) the redemption period of any loans for the provision of water services;

6) the need for a return on capital invested for the provision of water services; and

7) the need to provide for drought and excess water availability.

McDonald (2002: 18) explains the theory of cost recovery by saying that it implies 'charging end-users the (full) short-run marginal cost of production plus a portion of long-term operating and maintenance costs' with a view to make water services financially sustainable and able to generate a profit. Furthermore, in order for cost recovery to be effective, the following conditions must be in place: the service provider must be able to measure accurately how much service is consumed at the level of the individual households (hence, water metering); there must be a clear pricing system and the service provider must be able to collect payments; there must be punitive measures for those consumers who do not pay their bill (for instance, cut off, legal action, attachment of assets, eviction, but also water management devices like trickle valves and pre-paid meters) (Ibid.: 19-20). The most apparent consequence of implementing cost recovery in the provision of water services was a steep increase in water tariffs for township and rural areas residents and the extensive recourse to punitive measures towards insolvent citizens (according to McDonald (2002: 22), by 2001 10 million South Africans had had their water cut off and 2 million had been evicted from their homes due to non-payment of service bills). While McDonald (Ibid.: 27) links the tariff increase to the need to recover capital costs for new infrastructure development and service level upgrading, Loftus (2006) points to the parallel commercialization of bulk water supply that is to say, government-owned water boards selling drinking water to municipalities had also started to raise their own tariffs as a way to secure investment returns.

The rise in water prices prompted DWAF to introduce further regulations aimed at fostering social equity. Thus, the Norms and Standards in Respect of Tariffs for Water Services[17] issued in 2001 included the setting

up of a 'volume based charge that provides for a rising block tariff structure' and the possibility to distinguish among different categories and levels of water services, so that households relying on a communal waterwork or receiving a controlled amount of water would pay 'the lowest amount, including a zero amount' (DWAF 2001b, s. 6.2, 5). McDonald (2002: 18) notes that progressive block tariffs are not inconsistent with cost recovery, in that they 'charge higher than marginal cost prices at upper levels of consumption in order to make up for lower-than-marginal cost prices at lower levels', thus allowing for cross-subsidization. The publication of the norms relative to drinking water tariffs coincided with that of compulsory national standards relating to the provision of water services. Here, DWAF finally provided a concrete definition of basic water supply, namely (DWAF 2001c, s. 3):

> a) the provision of appropriate education in respect of effective water use; and
>
> b) a minimum quantity of potable water of 25 litres per person per day or 6 kilolitres per household per month –
>
> i. at a minimum flow rate of not less than 10 litres per minute;
>
> ii. within 200 metres of a household; and
>
> iii. with an effectiveness such that no consumer is without a supply for more than seven full days in any year.

Only one month before, in May 2001, DWAF had adopted a Free Basic Water (FBW) strategy, which paradoxically represents the third way in which water services were commodified (Loftus 2005). This policy, whereby every household receives a basic water supply (i.e. 6 kl per month) free of charge (DWAF 2001a),[18] must be contextualized within the Free Basic Services launched by Thabo Mbeki's government in the same year as part of a new social protection programme aimed at alleviating the increase in poverty registered since 1994 (Marais 2011: 204). As a result, basic (in the sense of essential) services such as water, sanitation, electricity, and refuse removal started to be delivered for free (in minimum amounts) as part of the South African social wage (which also includes social grants, tax relief, and free basic health and education). The implementation of FBW has raised a number of practical concerns, from the

realization that 6 kl may last much less than one month in bigger households,[19] to the fact that some residents may get an even lower amount or nothing at all due to the lack of resources on the part of water authorities (Tissington et al. 2008).[20] However, there are two major issues about the logic of this policy that need to be pointed out. First, as acknowledged by DWAF itself, FBW can only be delivered to those households, which already have (individual) access to the water supply infrastructure. As such, it is clearly unsuitable for the purpose of ensuring that every citizen has access to basic water supply. Second, the very idea that poor households should only receive basic water services, and be happy with that, is inconsistent with the 'need for equitable access to water services' stated in the Water Services Act (RSA 1997, s. 9.3.b). On the contrary, FBW offers a strong legitimation for the persistence of inequalities at the micro-level and in this way, it does not challenge the spatial differentiation produced under apartheid, but rather helps reinforce it. Loftus (2005, 2006) uses the term 'free water commodity' to capture the paradox of a policy that while expanding access to water, served to limit consumption of the poor, who could only afford basic amounts. State control over the poor and their water consumption increased after FBW was linked up with the Municipal Indigent Policy introduced by the Department of Provincial and Local Government (DPLG) in 2005.[21] For instance, 'targeting the poor' has become a fundamental component of FBW, which aims not only at separating the 'deserving poor' from those 'undeserving' (Hart 2014), but also at making sure that the former do not receive anything above the 'basic threshold'. This could help explain why the upgrading of water services in poor communities is lacking, whereas communal standpipes are still largely in place. The department notes in fact that 'it is seldom that consumers would use more than 6 kl with such a service and therefore this service level is well suited to a service level targeting approach' (DWAF 2007a: 10). The point however is how many people are dependent upon the same water infrastructure and to what extent consuming less than the basic amount allows them to achieve, in the words of the Water Services Act, a 'reasonable quality of life' (RSA 1996, s. 9.3.a).

To change individual behaviour (especially by disciplining the poor through water infrastructure) is one of the current priorities of DWS, which refers to it as 'water demand management'. Within the discourse of scarcity, the department is particularly concerned over the issue of water

loss, which has two components. On the one hand, physical losses are estimated at about 1,000 Mm^3 per year and put in relation with poor management of infrastructure on the part of municipalities as well as irrigation schemes (DWA 2013b: 54).[22] On the other hand, financial losses (also referred to as 'non-revenue water') are estimated at about 7 billion ZAR per year and explained in the following terms: 'A culture of non-payment for services has been developing over the past decades and this is continuing to a large extent. Where services are billed, a municipal flat rate is often charged because consumer metering is often non-existent' (DWA 2013b: 53-4).

Compared to water services, water resources have historically been incorporated into processes of accumulation. This has to do with water being used as a factor in commodity production not only on commercial farms, but also in the mining and power generation sectors (part of the minerals-energy complex). The point, then, is to understand how the post-apartheid water reform continued and possibly accelerated such incorporation. Three considerations can be made in this regard. First, that the ANC was keen to favour the use of water for accumulation purposes became apparent within the context of WAR, which has been introduced in the previous section. In the 2006 WAR strategy, in fact, productivity subordinated equity as the main objective of the redistribution of allocable water. This means that the equitable distribution of the country's water resources ceased to be a goal per se, while the government aimed at an equitable distribution of the benefits ensuing from productive water uses, whereby productivity is equated with economic growth and job creation. The discourse of water scarcity helped legitimize this decision, as water could not be 'wasted' in unproductive activities. In her analysis of water allocation discourses characterizing the WAR debate, Movik (2012) points to the stereotypical construction and opposition of ELUs and Historically Disadvantaged Individuals (HDIs). HDIs (mainly smallholders in former Bantustans) were depicted as struggling to be productive and therefore posing a threat both to the economy and the environment, whereas ELUs were represented as 'contributing to our social and economic stability, growth and development' (DWAF 2006: 2). For this reason, the WAR strategy stated that in order to promote the 'beneficial use of water in the public interest', water allocation should sustain basic livelihoods, but also 'start people along the journey to becoming commercial and competitive

users' (Ibid.: 6, 2), while at the same time limiting negative impacts on ELUs, which in this way became 'fortified rights' (Movik 2012: 138). One of the concrete mechanisms that DWS has been promoting to help black people become commercial farmers is the establishment of joint venture partnerships between black smallholder farmers and white commercial farmers. However, Mapedza et al. (2016) show that these schemes create a 'new injustice', in that they dispossess smallholder farmers of both their land and water use rights.

Second, that the ANC government values water resources especially in relation to their contribution to economic growth and job creation has been confirmed in the NWRS 2013, whose objectives have been aligned with those of the National Development Plan launched in 2012, which aims at eliminating poverty and reducing inequality by 2030. For instance, following the Reserve, international water obligations, and a rather vague allusion to 'water for poverty alleviation', the fourth current allocation priority includes: inter-catchment transfers (to address water scarcity) and the availability of water for purposes of electricity generation (DWA 2013b: 47). This is the context in which the surface water from the Mokolo River in the Waterberg has been allocated to Medupi power station (see Chapter 2). Desai (2015: 27) enumerates Medupi among a series of mega infrastructure projects (from the Gautrain to the expansion of the Durban port) launched under the presidency of Jacob Zuma with the promise to bring about 'radical socio-economic transformation', yet without explaining how that is going to happen in practice and instead 'diverting public funds into private hands [those of contractors]: construction for construction's sake, written up as being in the national interest and for the greater good'. A corollary of this push to use water productively is that the redistribution of resources from the productive to the domestic sector is not an option. The NWRS recognizes the 'impressive progress' made in 'providing millions of South Africans with access to a safe water supply', while admitting that some backlogs remain in the rural areas of the country (DWA 2013b: 45). However, the fact that the majority of the population can only afford a basic supply, often inadequate to achieve a 'reasonable quality of life' (RSA 1996, s. 9.3), is not perceived by the government as a problem under the rubric of social equity. Instead, the crux of the matter lies with the lack of redress in the allocation of water for productive economic uses. In the strategy, DWA admits that very little has been done in

this regard since 1998, but instead of questioning the tenets of a reform, which leaves old privileges untouched, it identifies a series of 'challenges' as the main reasons for failure. These are: 'weak internal coordination and integration; poor external alignment with other reform programmes; legislative impediments; lack of support to HDIs' (DWA 2013a: 46). The most noticeable outcome of this admission is the launch of a 'coherent programme of land, water and agrarian reform' in association with the Departments of Rural Development and Land Reform and Agriculture, Forestry and Fisheries, which however seems to simply having translated into DWS making recommendations onto the Agricultural Policy Action Plan issued by the government in 2015.

Third, the water reform opened up the way to public accumulation through the commercialization of raw water. This has been implemented with the introduction of water use charges that registered users must pay in compliance with chapter 5 of the National Water Act. Charges apply to the use of raw water directly from a water resource or via government waterworks. The Act states that these are to be used (RSA 1998, ch. 5, part 1):

> to fund the direct and related costs of water resource management, development and use, and may also be used to achieve an equitable and efficient allocation of water. In addition, they may also be used to ensure compliance with prescribed standards and water management practices according to the user pays and polluter pays principles.

The Minister is responsible for establishing a pricing strategy that 'may differentiate among geographical areas, categories of water users or individual water users' for the purpose of achieving social equity (Ibid.). The first pricing strategy for water use (also known as raw water use charges) was published in 1999. This was revised in 2007 and more recently in 2015. The latter (which at the moment of writing is still under discussion) is underpinned by the following principles: hybrid tariff approach (that is, a combination of national and local charges); user pays and recovery of costs; polluter pays; differential charges and capping of water use charges (to support key national objectives such as food security, racial and gender equity, job creation, and economic development); fiscal support; ecological sustainability; accountability; efficiency; and multi-year tariffs (DWS 2015c: 4-5). Six water use categories are introduced, namely: agriculture, municipal, industry and mining, hydropower, high assurance use (i.e.

power generation), and stream flow reduction activities (i.e. afforestation) (Ibid.: 6). Charges are broken down into five components: water resources management charges; water resources infrastructure charges; waste discharge mitigation; water research commission charges; economic regulation charges[23] (Ibid.: 9). Due to the lack of registration of boreholes, the consumption of groundwater is currently not charged. Recently, DWS announced its intention to introduce the metering of raw water consumption, which would extend full cost recovery to the whole water sector (Water and Sanitation Sector Leadership Group, public meeting, 3 December 2015). van Koppen et al. (2014) are quite critical of water use charges or 'water taxation', as they offer opportunities for rent-seeking on the part of the state. According to them (Ibid.: 58),

> the mixing of tax and entitlement becomes a perverse incentive for governments to grant entitlements to those who use the most water and therefore pay higher taxes [...] For large-scale users, taxes are only a fraction of the profits they derive from water and they are usually willing to pay. Thus, governments become increasingly financially dependent on large-scale users and their interests. Governments become merchants, selling water as a commodity to those water users that the government can reach most easily and most profitably.

3.4 Conclusion

This chapter has shown that white commercial farmers have benefitted the most by the water reform started by the democratic government of South Africa in the mid-1990s. This happened for two main reasons. First, one the fundaments of the reform is the invention of the category of existing lawful uses, through which the ANC government left the material conditions of access to the resources and to the benefits deriving from it substantially unaltered for white farmers. Second, the reform is underpinned by an understanding of water scarcity as overallocation, which rests on the distinction between water available and water allocable. This means that instead of any water available, it is only water unallocated to white farmers that can be redistributed to black users. Furthermore, this chapter has shown that redistribution, intended as one of the components of the reform, has been privileging accumulation over social equity. Indeed, although rigidly separated into two water sectors, the provision of both water services and water resources has been transformed by the post-apartheid

state into an accumulation strategy. On the one hand, water services have been heavily commercialized and the provision of free basic water continues, rather than changing, this trend. On the other hand, not only have water resources have been commercialized too through the introduction of raw water pricing, but most importantly their redistribution has been prioritizing productive uses over equitable access, to the point where no amount of water can be transferred from the productive to the domestic sector.

In the formerly 'white' rural areas of the country, such as the Waterberg, this results in inequality in access to water across the domestic and productive divide becoming extreme and it compels us to bring into question the very separation of the water sector into water resources vis-à-vis water services as part of the problem. This is exactly what the next chapter intends to do by focusing on the plateau.

Notes

[1] This literature can be divided into three sub-groups according to the following thematic focuses: Integrated Water Resources Management (Bourblanc 2015, Bourblanc and Blanchon 2014, Mehta et al. 2014, Movik et al. 2016, Schreiner and van Koppen 2002, van Koppen and Schreiner 2014a); water redistribution and issues of justice (Mapedza et al. 2016, Movik 2014, Tapela 2008, van Koppen and Schreiner 2014b, van Koppen et al. 2014); and connections between water and land reforms (Liebrand et al. 2012, Woodhouse 2012b).

[2] This in turn illustrates one of the four dynamics of 'accumulation by dispossession' (namely, privatization and commodification) that, according to Harvey (2005), are specific to neoliberal capitalism. Wealth redistribution, rather than generation, is key in these processes, as they 'amount to the transfer of assets from the public and popular realms to the private and class-privileged domains' (Ibid.: 161).

[3] As noted by Scoones et al. (2014), narratives of resource scarcity became popular again following the financial, food, and fuel crisis of 2007-2008 and related land rush (that is, large-scale land investments).

[4] An original contribution on the reasons why the water reform allowed white commercial farmers to maintain their privileges is beyond the scope of this dissertation, as to do so would have required a comprehensive and lengthy engagement with other primary sources than those consulted for the main purpose of this study that is, the political ecology of water in the Waterberg. It must be noted in fact that the existing scholarship on the water reform appears

much more interested in the pioneering role played by South Africa with regard to the application of IWRM principles (especially the environmental one, Bourblanc 2015, Movik et al. 2016), rather than in the apparent contradiction that ELUs represented for the ANC politics of the time.

[5] The Act – backbone of the politics of racial segregation between the foundation of the Union in 1910 and the rise to power of the National Party in 1948 – established that Africans could not purchase or lease land outside the reserves set up to house them, which in turn constituted 7 per cent of the total area of the country (later increased to 11.7 per cent) (Thompson 2001: 163).

[6] Although, to be sure, entitlement is defined here as 'a right to use water in terms of any provision of this Act or in terms of an instrument issued under this Act' (RSA 1998, s. 1.1.viii).

[7] The department responsible for managing South Africa's water resources and services has changed its name three times since 1994. Firstly known as Department of Water Affairs and Forestry (DWAF), it became Department of Water Affairs (DWA) in 2009, and then Department of Water and Sanitation (DWS) in 2014. For the sake of accuracy, the text switches from one name to the other according to the time period in question.

[8] This was actually one of 12 key policy positions forming the National Water Policy Review aimed at combining the Water Services Act and the National Water Act into a single law and approved by Parliament in November 2013. The principle 'use it or lose it' stated that 'any authorised water use […] which is not utilised for a period specified by the Minister, should be reallocated to the public trust managed by the Minister as custodian of the nation's water resources. The Minister will reallocate this water to address social and economic equity' (DWA 2013a: 9). Following the change from DWA to DWS in June 2014, this process was put aside to make room for a review of the current sanitation policy to result in a new water and sanitation bill.

[9] South Africa's mean annual rainfall is 450 mm, which is below the world average of 860 mm/y. Yet, rainfall is highly variable across space that is, in the country's different climatic regions, ranging from less than 100 mm/y in the desert areas in the west, to more than 1.200 mm/y in the subtropical areas in the east, and across time, with both floods and droughts becoming more frequent (AQUASTAT 2016).

[10] According to chapter 2 of the National Water Act, the Minister is required to develop a national water resource strategy providing 'the framework for the protection, use, development, conservation, management and control of water resources for the country as a whole' (RSA 1998, ch. 2, part 1). As such, NWRS

reflects the government's policy (and political) vision for water both as a resource and as a service. The first NWRS was published in 2004.

[11] For instance, according to the global water stress index, South Africa is classified as a water-stressed country because the amount of renewable surface water available to each inhabitant is 1,007 m^3/y, whereas the scarcity threshold is 1,700 m^3/y (UNEP 2010: 284).

[12] The establishment of CMAs has been a long and tension-ridden process, partly because of overlaps between these bodies (whose governing board would be composed of water users, local and provincial government and environmental interest groups) and DWS regional offices (Bourblanc and Blanchon 2014, Movik et al. 2016). The 19 CMAs originally planned by the department were reduced to 9 in 2012. Of these, five had been instituted by the end of 2015, but only two were operational, namely the Inkomati CMA in Mpumalanga and the Breede-Overberg CMA in the Western Cape.

[13] The situation in black residential urban areas (townships or locations) was somehow more complicated. Although water infrastructure was of lower quality compared to that in white areas (suburbs), water supply was de facto unlimited (for instance, residents in Soweto were allowed 20 kilolitres, kl, per household per month) and inexpensive to avoid political activism around public services (Bond and Dugard 2008: 8). Hart (2014: 107) notes something similar in the case of relocations of black residents from townships inside white towns to townships (by definition, urban places) inside Bantustans. Here, the provision of water at a low, flat rate, was seen as part of a compromise by means of which black people acquiesced to their forced removal.

[14] This is reflected in the interest that water services have received in the scholarship vis-à-vis water resources (see Chapter 1).

[15] The Water Services Act defines basic water supply as follows: 'the prescribed minimum standard of water supply services necessary for the reliable supply of a sufficient quantity and quality of water to households, including informal households, to support life and personal hygiene' (RSA 1997, s. 1.iii).

[16] For instance, section 26B.3 of the Water Act, 1956 states: 'In order to defray any expenditure incurred or to be incurred in connection with the rendering of a water supply and sanitation service, the Minister may from time to time assess such charges as he or she deems fit, and may recover the charges so assessed in accordance with the provisions of paragraph (*c*): Provided that such charges shall be assessed with due regard to the ability of the community or communities concerned to afford such charges, and that revenue resulting from such charges shall not exceed in any case the cost incurred in the rendering of such service' (RSA 1956).

[17] A revision of these norms and standards is currently under way with the aim to align the timeframes for Ministerial approval of all tariffs along the water value chains and to help water services institutions implement a standardized process for tariff implementation. The proposed changes include targeting a net surplus of a minimum of 6 per cent per year for water supply revenue, setting up a separate tariff for sanitation services, and achieving full ring-fencing of water and sanitation services budgets (DWS 2015b).

[18] See Loftus (2006, 2007) for an account of how this policy first originated in the local experience of water service provision in Durban.

[19] The basic amount was calculated on the average size of eight members per household (DWAF 2001a: 6).

[20] FBW is financed via two major income streams. On the one hand, water capital expenditure (since 2007 a so-called 'gaining access' component aimed at extending services to the unserved has in fact been included) is funded by the Municipal Infrastructure Grant and the Housing Subsidy (i.e. national transfers). On the other hand, operation and maintenance costs are covered by the Equitable Share (a national transfer) and internal cross-subsidization (of local taxes and revenues).

[21] 'Indigents' are defined in this policy as individuals lacking a package of goods and services considered essential for survival, namely: sufficient water, basic sanitation, refuse removal in denser settlements, environmental health, basic energy, health care, housing, food and clothing (DPLG 2005: 9). However, municipal indigent policies usually employ poverty lines to determine who qualifies for support.

[22] In September 2015, DWS launched the training programme War on Leaks, whereby Rand Water and the Energy and Water Sector Education and Training Authority will provide basic plumbing skills to 15,000 unemployed youth over a five-year time span. Modimolle in the Waterberg figures among the priority municipalities identified as recipients of this project.

[23] This is intended to fund the activities of an independent Economic Regulator to be introduced in the water sector.

4 Recognizing water inequality in the Waterberg

The aim of this chapter is to describe and analyse water scarcity in the town of Vaalwater and especially in its township Leseding from a perspective of inequality. That is to say, while the black marginal working class living in Leseding do not have continuous and secure access to water, white middle-class and wealthy landowners living on the private farms scattered across the plateau have water in abundance. What are the social and political consequences of this inequality in practice? Water availability, intended as the number of hours during which water can physically be accessed through the tap, and water consumption, intended as the amount of litres a person is able to use, represent the most apparent indicators of unevenness. Yet, this chapter describes the water poverty ensuing from service delivery in Vaalwater in detail. This is important, not only because very little is known about it, but also and foremost because to name water poverty and inequality becomes a valuable tool in the 'politics of recognition' that leads to redistribution, hence water justice (Boelens and Zwarteveen 2014, Fraser 2000).[1]

The main argument of the chapter is that water shortages in Vaalwater result from a deeply unequal distribution of water resources in the Waterberg. Indeed, unravelling the connections between town and farms lays at the core of my relational analysis. This counters the mainstream 'lack of capacity' argument (Atkinson 2007, Koelble and LiPuma 2010, Koelble and Siddle 2014), according to which the local municipality is inherently unable to deliver, because it lacks the skills necessary to do so. Instead, the chapter argues that in order to make sense of water scarcity in Vaalwater, one needs to look beyond the workings of local government. It is suggested that what is crucial to consider are the relations of power around water, as they were left unchallenged by the implementation of the post-apartheid water reform on the local level. The chapter contributes to the overall argument of the dissertation by qualifying the meaning of water inequality in contemporary South Africa as uneven patterns of access and use along racial and class lines. Furthermore, it shows how the presence

of water scarcity and abundance in the same place becomes fully comprehensible only by ceasing to treat municipal water services as a separate water sector and rather by putting them in relation to local productive water uses.

The chapter is structured into three major sections. The first section unpacks the notion of 'service delivery crisis', which rests on the lack of capacity argument, to prove how its meaning has historically shifted away from inequality concerns. The second section reviews the implementation of the water reform in the Waterberg with the aim to highlight which changes (if any) this brought to the allocation of local water resources. Finally, the third section illustrates the uneven patterns of access and use of water on the plateau and shows how municipal service delivery is embedded in social relations of power.

4.1 Unpacking the service delivery crisis

Over the last few years, service delivery crisis has become a popular expression to refer to a situation where municipal delivery of basic services seems to have become dysfunctional across the whole country. This idea has also taken root in the Waterberg, even though it is especially supported by white landowners, who do not live in Vaalwater and do not experience water shortages themselves. According to the landowners I interviewed, water supply in town is failing because of the following reasons: the municipality lacks planning capacity, as indicated by the fact that people are allowed to relocate to a place with no infrastructure; municipal workers do not have the technical skills to maintain the production (boreholes) and distribution (pipes) system, so that these cannot be fully operational at all times; the management is inefficient, partly because 'African culture' does not allow for hierarchy; and local council members are always looking for self-enrichment opportunities, so that public money goes into tender corruption rather than service improvement. I will return to empirical evidence to (partly) counter these claims later in the chapter.

For now, it is important to remark that the history of the term shows that service delivery crisis has taken on competing meanings over the years. It appears that this phrase was used for the first time in the title of an edited volume by McDonald and Pape, *Cost Recovery and the Crisis of Service Delivery in South Africa*, published in 2002. The 'crisis' depicted by the

authors was fundamentally a crisis of payment, which captured a grave contradiction within the post-apartheid socio-economic order: while on the one hand the number of South African citizens physically reached by a water supply network had increased quite dramatically (2 million households between 1994 and 1999, McDonald and Pape 2002: 4), on the other hand many of them were unable to pay water tariffs, which were calculated to cover the partial or full cost of providing the service. As noted in the previous chapter, cost recovery was accompanied by punitive measures being applied to insolvent households, so that McDonald and Pape found that many of them were experiencing arrears, water cut-offs (they estimated 10 million people being affected), forced installation of pre-paid technology, and even home evictions. Rejecting over-simplistic explanations centring on a 'culture of non-payment' (legacy of the rates' boycotts carried out during the liberation struggle to make the apartheid system ungovernable) as well as those seeing non-payment as a form of resistance against a 'culture of non-servicing', the authors put the issue of affordability at the centre of the debate, stating that structural poverty and inequality were at the origin of the crisis of service delivery in South Africa.

The focus on inequality, which characterizes this crisis narrative, is shared by two important studies of the South African transition, namely *An Ordinary Country* by Neville Alexander (2003) and *Class, Race, and Inequality in South Africa* by Seekings and Nattrass (2005). Alexander argues that the transition to democracy has not been a radically transformative process as it is usually described nationally and internationally. Rather, the structural relations of power that characterized the apartheid capitalist state have continued during the post-apartheid order. Similarly, Seekings and Nattrass show that the distributional regime of late apartheid has been reformed through deracialization, but not radically transformed towards egalitarianism. According to them, inequality (especially intraracial) has increased in the post-apartheid period because the most vulnerable elements of society (the unemployed poor) have been excluded from a welfare system designed to support wage earners (thus becoming workfare), while the ANC government has failed to produce employment. The idea that in post-apartheid South Africa wage labour has become the foundation of social inclusion and ultimately citizenship, is echoed both in Marais (2011) and in du Toit and Neves (2014), who in fact refer to it as the citizen-worker nexus. The provision of free basic services as part of the social

wage becomes in this context a means to control the population, to distinguish 'can't pays from won't pays' (Hart 2014: 137). As noted in the previous chapter, to receive water services via a basic level of infrastructure, such as communal taps, has now become the norm for the poor, whereas upgrading has been transformed into a matter of individual responsibility, which may even require the provision of free labour. The so-called 'open toilet saga' (2010-11) is a case in point. Informal settlements in both Cape Town and Viljoenskroon (Free State) had been provided with unenclosed toilets on the assumption that residents would supply the materials and labour necessary to enclose them. However, the people living in these poor communities could not afford that and were forced to use the toilets in public (Beja and Others v. Premier of the Western Cape and Others 2011, Robins 2014).

Nevertheless, the way in which the notion of service delivery crisis has been mainstreamed in the course of the 2000s has nothing to do with inequality concerns. The turning point here can be pinpointed to 2004, when 'service delivery protests' (as they became popularly referred to in the media) started to spread across the country. Peter Alexander (2010), who labels them a 'rebellion of the poor', acknowledges that the different forms taken by such protests (from drafting of memoranda to destruction of buildings) and the lack of specific datasets make it difficult to quantify them. Still, he concludes that 'in an average week over the period 2004 to 2008 there were more than ten protests involving "unrest"' (Ibid.: 27) and their frequency appears to have increased after 2009 under Zuma's presidency.[2] Two themes emerged as the main reasons to protest: the lack or poor status of service delivery, and other substantial local government's shortcomings, such as nepotism, lack of transparency, and unaccountability. In her contribution to the 2007 edition of the *State of the Nation*, Atkinson (2007) used service delivery protests to argue for the failure of the project of a 'developmental local government'[3] and she offered a new crisis narrative based on two main elements. First, (some) municipalities are not able to deliver services because they lack the institutional capacity to do so, meaning that they are managed by people with no organizational experience and technical skills (explained in turn by affirmative action and the appointment of officials on the basis of familial and political ties). Second, municipal failures are not accidental, rather they reflect a 'culture' of

unresponsiveness and self-enrichment shared among municipal councillors and staff.

The shift in focus from class and racial inequalities to the dynamics of local government is to be found in other authors as well, such as Alexander (2010) and especially Hart (2014). Nonetheless, their perspective is very different from that of Atkinson and of other authors who share the same mainstream perspective on service delivery in the post-apartheid order (Koelble and LiPuma 2010, Koelble and Siddle 2014). Alexander (2010), for instance, calls the attention to the complexities of the ANC internal politics, which includes patronage relationships, and to the neoliberal policies of early post-apartheid years, which at the same time reduced the opportunities for public investment and increased those for private accumulation on the part of local politicians. As for Hart (2014: 5), she argues that local government has become '*the* key site of contradictions […] the impossible terrain of official efforts to manage poverty and deprivation in a racially inflected capitalist society marked by massive inequalities and increasingly precarious livelihoods for the large majority of the population'. Hart notes that although in the course of the 2000s the national government increased social expenditure and adopted an interventionist attitude towards the poor's needs, this was accompanied by expanding its own control over municipal finances and the selection of ward councillors. Against the lack of capacity argument, Hart states that the main sources of tensions at the local level are what she refers to as 'government of indigence' through techno-fixes (such as municipal indigent policies) and competition for resources between rival petty bourgeoisies (the former Bantustan civil service and workers aspiring to become middle-class in the new order, both relying on patronage networks).

As recently argued by the Public Affairs Research Institute of Johannesburg (PARI 2015), the lack of capacity argument is, at best, descriptive of the unevenness characterizing service delivery in South Africa (meaning that some municipalities perform better than other). Yet, it fails to explain why this unevenness came into place. For this reason, PARI identifies which skills are lacking the most in the municipal water sector, namely those of artisans in charge of basic technical operations, and it offers three arguments on why this specific skill shortage occurred. First, the history of skill formation in South Africa shows that elementary skills were long

devalued because of their association with ideas and practices of upliftment and discipline of the poor (both white and black) (McGrath et al. 2004). Second, the lack of technical skills must be put in relation to a broader political economy, whereby until the 1970s skill formation was reserved to poor whites. The deracialization of the artisan system in the 1980s coincided with a structural shift in the economy from manufacturing to services, so that opportunities for apprenticeships declined. Furthermore, the system of training introduced in the 1990s is based on learning specific tasks and as a result provides students with less knowledge. Finally, PARI argues that within the context of the management system known as New Public Management (see Chapter 5), which the ANC introduced in the reformed local government, managerial positions are valued and developed to the detriment of elementary ones.

Overall, there are two major issues of concern with the way in which the notion of a service delivery crisis has been framed and entered the public discourse in South Africa since the mid-2000s. On the one hand, to claim that local municipalities in general are incompetent and corrupt is an overgeneralization that leaves the door open for cultural and ultimately racist explanations and most importantly it overlooks the dynamic of continuity between the apartheid and post-apartheid order. Chipkin and Meny-Gibert (2012) show in fact how the state of the contemporary public sector in South Africa has largely been shaped by its specific history. For instance, the lack of skills and neo-patrimonialism that often characterize the provincial and municipal civil service cannot be fully understood or tackled if one does not consider them from a historical political economy perspective. It was an ANC's decision to retain former homeland officials (whose corruption, incompetence, and nepotism were functional to the working of the apartheid state) for the purpose of meeting affirmative action targets, without considering the way in which their norms and values were embedded in broader social relations and would continue after the democratic transition and ultimately impact on its course.

On the other hand, Pithouse (2007) notes that the very expression service delivery protests has been produced by a 'state/academic/NGO complex' to speak the 'language of professionalized politics' and to allow for a technocratic solution to a problem that is inherently political and in his analysis has to do with the citizenship rights of particularly the shack

dwellers and urban poor. To maintain that the current service delivery crisis is fundamentally an issue of inefficient and dishonest public officials is convenient both for those who receive services of good quality and for the national government, in that it offers an easy fix, such as that represented by the recommendations for professionalizing the civil service contained in the National Development Plan of 2012 (Habib 2013: 61) or the launch of the Back to Basics approach in 2014.[4]

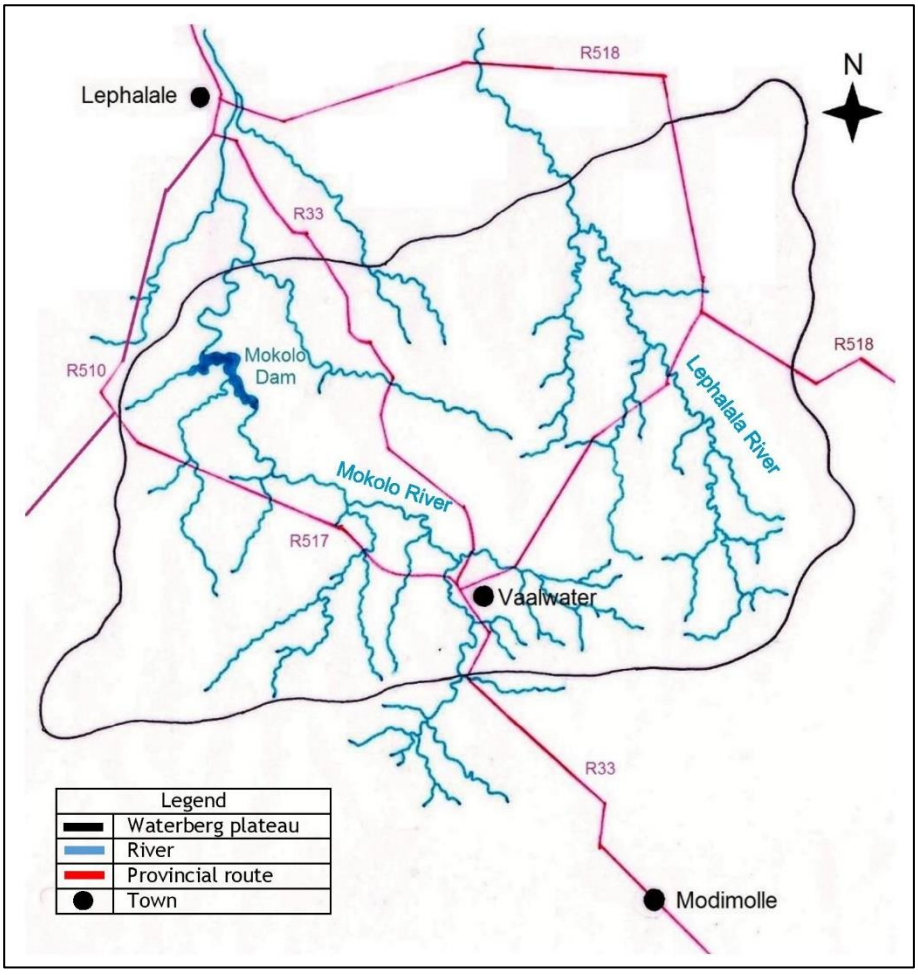
4.2 Implementing the water reform in the Waterberg

Water service delivery rests first and foremost on the availability of and accessibility to resources to distribute. This is why it is important to look at the implementation of the water reform in the Waterberg. In line with what has been said in the previous chapter, the first step in this regard has been the quantification of local water resources. There are two independent river catchments on the plateau, namely the Mokolo and the Lephalala, whose waters flow into the Limpopo River and for this reason belong to the Limpopo Water Management Area (WMA) North, which was officially established in 2015 (see Map 4.1).

The Mokolo is the most developed catchment within the whole WMA. This derives from the fact that within the context of a semi-arid and mostly flat region, the Waterberg mountains have higher than average rainfall,[5] resulting into more surface water available, and offer sites suitable for the construction of dams, such as the large Mokolo Dam as well as a number of small farm dams. In consequence, DWS has commissioned numerous studies aimed at determining the quantity and quality of the catchment waters, especially after the government's decision to build Medupi power station in the area (DWA 2012, for instance, lists 19 reports). In 2004, the department's Internal Strategic Perspective on the Limpopo WMA defined the Mokolo catchment 'in balance', meaning that water supply was determined equal to water demand (DWAF 2004: 34). Water availability was calculated at 83 Mm^3/y, by adding up the yield of surface water (including the Mokolo Dam, whose yield is 23 Mm^3/y) and that of groundwater (Ibid.: 33). Water requirements were also calculated at 83 Mm^3/y, by adding up the impact on water yield of different user sectors, namely irrigation (68 Mm^3/y), urban (2 Mm^3/y that is, the towns of Vaalwater and Lephalale), rural (2 Mm^3/y),[6] mining (4 Mm^3/y), and power generation (7

Mm³/y) (Ibid.: 34). On the basis of these figures, DWAF stated that no further licences for surface water should be issued, since none of this resource resulted allocable, whereas groundwater appeared under-utilized and new licences for its extraction could be considered.

***Map 4.1** River catchments on the Waterberg plateau*



Source: Elaboration of the author based on the 1: 500 000 map 2326 Polokwane (Chief Directorate: Surveys and Mapping, Cape Town, 2001)

Nonetheless, since the department was already aware of a future increase in the local water demand related to planned developments in the Waterberg Coalfields and 'fast-growing informal settlements around Vaalwater and Alma', the following options were suggested (Ibid.: 36):

- Raising of the Mokolo Dam (the dam was designed to be raised).
- Transfers of surplus return flows from the Crocodile/Marico WMA to Mokolo catchment. This transfer is mentioned in the NWRS as a possibility and 45 million m^3/a has been provisionally reserved for this.
- Water trading with the irrigation sector.
- Groundwater through the development of large borehole networks in undeveloped areas within this Key Area or neighbouring Key Area.

The first two options represent Phase 1 and 2 of the Mokolo Crocodile West Water Augmentation Project (MCWAP), which has been mentioned in Chapter 2 in relation to the future water needs of Eskom Medupi power station. Water trading with the irrigation sector is currently the foundation of municipal service delivery in Vaalwater, since no borehole network has been developed yet.

As for the Lephalala catchment, most of its surface water is to be found in the upper reaches, where significant irrigation takes place through farm dams (especially along the tributary Melkrivier). The development of the catchment towards further extraction has been limited due to the fact that the middle reaches are regarded as a 'pristine' wilderness area with a very high conservation status. For instance, 88 km of river shoreline are included within the private nature reserve Lapalala Wilderness, whose owner succeeded in opposing the construction of a government dam in the 1980s (game farm owner, personal interview, 9 May 2014). The 2004 Internal Strategic Perspective on the Limpopo WMA found the catchment to be 'stressed' because water demand exceeded water supply (DWAF 2004: 39). While water availability was calculated at 24 Mm^3/y, water requirements were calculated at 36 Mm^3/y, that is to say 33 Mm^3/y for irrigation and 3 Mm^3/y for rural uses (Ibid.: 38). DWAF's recommendations regarding this catchment were similar to those for the Mokolo's, namely no new licences aimed at using surface water for irrigation purposes should be issued and additional water for domestic purposes should be sourced from underground.

In light of the zeal with which the department has been producing water data, the 2004 report mentioned above became particularly valuable in that it could use new information that had only recently become available from the Water Authorisation and Registration Management System (WARMS) and the Groundwater Resource Information Project (GRIP) Limpopo. Thanks to these two databases, in fact, the department realized that both water requirements and groundwater resources had been underestimated in the WMA. However, two issues related to the accuracy of this information were dismissed. First, the registration of water uses, through which the WARMS database was compiled, had been far from smooth, to the point that the department was prompted to start a process of validation of registered water uses before their verification in accordance with section 35 of the National Water Act. Second, GRIP Limpopo collects and verifies data on groundwater resources to be found in black rural settlements, but it does not gather any information on the groundwater use of white farms.

In the Waterberg, the validation of existing lawful uses (ELUs) in the Mokolo catchment was conducted by the private service provider Schoeman en Vennote between 2005 and 2007. Chapter 3 has defined ELUs in accordance with the National Water Act as any water use taking place in the two years before the issue of the Act and compliant with any legislation in force at that time. The validation process aimed at classifying ELUs (for irrigation purposes) registered with DWS in one of the following categories: correct registration; over-registration and/or unlawful use; under-registration; and failure to register. In order to do so, the private service provider had to determine the exact value of four categories of use, namely: registered; lawful; existing (i.e. 1998-99); and current (i.e. 2004). For this reason, WARMS data were combined with historical data on water rights,[7] water use volumes, and satellite images, and discussed with farmers in the course of field visits. The exercise produced four main findings. First, with the exception of those belonging to the irrigation schemes downstream of the Mokolo Dam, commercial farmers in the Mokolo catchment had over-registered their water use for irrigation purposes, since a total (that is, surface water plus groundwater) volume of 69 Mm^3/y was registered vis-à-vis a current consumption of 52 Mm^3/y (DWAF 2007b: 19). According to Schoeman and Vennote, over-registration derived from the fact that farmers had registered their planned water use in addition to their actual

one and had considered all their uses regardless of the time-frame of one year. Over-registration was confirmed in the course of my interviews with crop farmers, when almost everyone said that they were using only a portion of their water entitlements, which in turn equated on average to 812,661 m^3/y.[8] Second, in 2004 farmers were extracting some 2 Mm^3/y of surface water and groundwater in excess of the value of existing lawful use, which was calculated at 50 Mm^3/y (Ibid.). Third, since 1985, that is to say the year in which the Hans Strijdom Dam Catchment Government Water Control Area was proclaimed (see Chapter 2), the extent of irrigated land had decreased by some 3,500 ha or 36 Mm^3/y (Ibid.). Schoeman and Vennote explain this by saying that faced with a reduction of the lawful amount to be extracted and especially the prohibition to build new (or altering existing) waterworks, irrigation farmers did not want to take the risk of depending upon unstable water flows and preferred to convert their main activities to cattle or game farming. Notwithstanding the prohibition to further dam the river's waters after 1985, the fourth main finding of the validation process was that the total storage by commercial farmers had increased by 7 Mm^3/y since that year and some 3 Mm^3 appeared unlawful (Ibid.: 21).

The results of the validation process are to be considered preliminary until their verification has been carried out. The latter started in 2012, but by the time I left the field in August 2014, it had not been completed yet. The verification stage is a necessary precondition for proceeding with the licensing of water uses, but so is the establishment of a WMA, which finally occurred in 2015, when the Limpopo WMA North was officially set up. The Limpopo WMA North Steering Committee is currently working on developing a reconciliation strategy for the area, following the instructions contained in the NWRS 2013. During the second committee's meeting, an overview of the most recent information concerning each catchment composing the WMA was offered. Notwithstanding Medupi, the figure for the total water requirements of the Mokolo catchment is much lower than in the past, as it is now calculated at 55 Mm^3/y (DWS 2015a: 69). The MCWAP is the only intervention that has already been approved, whereas the following are indicated as 'possible': water conservation and water demand management in both the domestic and irrigation sectors (phased over the next five to ten years); elimination of existing unlawful use and compulsory licensing (phased over the next three to four years);

groundwater development for domestic consumption (to be further investigated) (Ibid.: 70). For what concerns the Lephalala catchment, the water requirements figure appears to have more than doubled since 2004, as it is now 75 Mm^3/y, while the list of possible interventions is the same as the Mokolo's (Ibid.: 71-2).

As noted in the previous chapter, the quantification of water availability and water requirements for domestic consumption has been the object of a separate group of studies launched by DWA in preparation of the 2013 NWRS, namely the All Town Reconciliation Strategies. Within this context, the private service provider SRK Consulting published one such report for the town of Vaalwater in 2010. The report reaffirms that the only source of water for Vaalwater is groundwater, but it also states for the first time that the town is currently in a situation of deficit, in that water requirements (calculated at 0.8 Mm^3/y) exceed water availability (calculated at 0.7 Mm^3/y) (DWA 2010b: 8). However, since it is estimated that the groundwater available from the local aquifer (i.e. 2.4 Mm^3/y, as based on recharge volumes) is greater than the local (municipal and agricultural) borehole infrastructure capacity (i.e. 0.8 Mm^3/y), the reconciliation strategy proposed in the report is that of expanding the groundwater scheme by increasing the borehole infrastructure every five years (Ibid.: 6-12). Moreover, since according to the report municipal groundwater use is not metered (whereas this information was refuted by the Supervisor for Water and Sanitation in Vaalwater, personal interview, 1 October 2013), the municipality needs to install a network of water meters and introduce a water conservation/water demand management strategy. These recommendations echo the main findings of the All Town Reconciliation Strategies conducted across the country, as summarized in the 2013 NWRS (DWA 2013b: 24). According to the department, these studies have shown that the water deficit currently experienced in many settlements does not derive from the lack of water resources, but rather from 'poor water supply management', such as lack of metering, waste of water resources (both physical and financial), and low technical competence. Moreover, they have indicated that groundwater represents an untapped resource that is sufficient to meet domestic water needs, thus making the reallocation of surface water unnecessary.

Yet, there are three major flaws in the Vaalwater report. First, SRK Consulting carried out a desktop study, meaning that instead of producing

new knowledge about water service provision in Vaalwater, they collected previously published information. For this reason, groundwater data are said to be characterized by 'high confidence' because of the number of studies available for the Mokolo catchment, whereas population data (such as population numbers, levels of service, historical records of water use volumes) are said to be characterized by 'low confidence' (DWA 2010b). As a result, it is possible to argue that water requirements have actually been underestimated in the report. Second, considering the under-registration of boreholes (especially those which are not employed for irrigation purposes), it is probable that the actual groundwater yield is lower than that calculated in the report. Finally, and most importantly, the report completely ignores the issue of access to groundwater. That is to say, in light of the fact that Vaalwater is bordered by private land, the municipality needs to initiate private transactions with commercial farmers, which usually imply paying a rent for using a farmer's existing borehole, paying the cost of drilling a new borehole and its rent, or buying a property with the aim of extracting the groundwater to be found underneath. The next section explores in more detail how this affects municipal water provision.

4.3 Patterns of water access and use

Notwithstanding the presence of over-registered and unlawful water uses on the part of the agricultural sector in the Waterberg, the apartheid allocation of water resources has hitherto been left untouched by DWS. This means that surface water from the Mokolo River continues to 'belong' to white commercial farmers and cannot be extracted by Modimolle Local Municipality (MLM, which is both Water Service Authority and Water Service Provider) to provide water services in the town of Vaalwater. Thus, as recommended by the All Town Reconciliation Strategy, the municipality has to rely entirely on groundwater. Yet, since the strongest boreholes are located in close proximity to the Mokolo River, they are usually to be found on private farms. As a result, access to the resource for the municipality is ultimately mediated by social relations of power founded on private property rights (Ribot and Peluso 2003). This is a crucial point to understand, in that it is what makes the formerly 'white' farmland fundamentally different from the urban landscape analysed in the critical South African water literature hitherto (Bond 2000a, 2010; Bond and Dugard 2008; Desai and Pithouse 2004; Dugard 2010; Loftus 2006, 2007, 2009;

McDonald and Pape 2002; McDonald and Ruiters 2005; McDonald and Smith 2004; Smith and Hanson 2003; Smith 2004).[9] The way in which these power relations work out in practice has changed considerably since the Local Government Affairs Council negotiated the first rental of a borehole on private land for the purpose of municipal supply in the 1980s (see Chapter 2). For instance, in 2011, when a local farmer realized that the municipality was still extracting water from a borehole located on his property for free, even though the contract signed between his father and the former local authority had been expired for 11 years, he hired a local attorney to claim for compensation from Modimolle. As the negotiations prolonged into 2013, the farmer took the opportunity of a broken pump to lock the gate to the borehole and informed the municipality that if they wanted to extract 'his' water again, they first had to sign a new contract (cattle farmer, personal interview, 14 June 2014; local attorney, personal interview, 9 June 2014). This was in fact a lease agreement, stating that in addition to being responsible for all the costs related to equipping and operating the borehole, the municipality should pay the landowner a monthly fee of 16,000 ZAR for buying water from him.[10] According to the attorney who drafted the contract, the monthly fee is intended to cover the risk that the municipality over-extracts from and ultimately compromises the sustainability of the aquifer, which would negatively affect the value of the land (Ibid.). Since then, the agreement between this farmer and Modimolle has set a benchmark for further transactions about water between the municipality and landowners.

Overall, this episode reflects the power relations between white farmers and the local government as characterized by the former being able to impose conditions on the latter and even to bring negotiations to a standstill until they are fully satisfied. A further example of this is to be found in a pending agreement for the sale of groundwater between the municipality and another landowner. As the pipeline connecting the private borehole with the reservoir in town was to be laid under a neighbouring farm, the owner of such property stopped the building works,[11] hired a lawyer, and demanded that the municipality extract groundwater only during the rainy season (crop/cattle farmer, personal interview, 13 June 2014). This request was made with the aim to protect the water rights of the neighbour farmer, since he was able to prove that by abstracting water from that

particular borehole, the municipality was negatively affecting his own water provision (by lowering the water table common to the two properties). Yet, it is important to note that the farmer in question used surface water from the Mokolo River for his irrigation purposes, while resorting to groundwater only during emergencies, such as severe droughts. Nonetheless, in 2011, that is to say four years after he had first approached Modimolle with an offer to sell them water, the borehole's owner passed away and his heirs started to doubt whether that was the most profitable use they could put 'their' water to, since, as one of them put it, 'water is what I make my money from' (game farm owner, personal interview, 30 April 2014). For this reason, while considering the financial opportunity to start growing lucerne (whose demand as game feed is on the rise in the Waterberg), they put the negotiations with the municipality indefinitely on hold (Divisional Manager Water Services MLM, personal interview, 13 June 2014).

The foregoing makes it relevant to ask to what extent a system of water supply based on the purchase of water from landowners is financially sustainable for the municipality. Indeed, according to the Divisional Manager Water Services, coming to an agreement with farmers is a challenge, because 'they would want to charge us a lot of money for us to be able to use their borehole to supply the community' (Divisional Manager Water Services MLM, personal interview, 30 January 2014). It therefore leads to the question whether the municipality can actually pay for this water. Yet, to gather accurate data on municipal finances, especially with regard to water provision, has been quite difficult. For instance, while it is clear that Modimolle is currently leasing two out of the eight boreholes it is sourcing water services from, the legal status (and associated costs) of the remaining six is uncertain.[12] Furthermore, information is aggregated at the level of the whole municipality, consisting of urban (i.e. Modimolle town and its township Phagameng, Alma, Vaalwater and its township Leseding) and rural (i.e. private farms) settlements.

Having said that, it is possible to make a rough estimate of how much it would cost Modimolle to expand the groundwater scheme via private transactions with landowners in order to provide a solution to the water shortages experienced in Vaalwater. At the time of this research, the eight boreholes operated by the municipality produced a total yield of 1,200

m^3/d (that is to say, 1.2 Ml/d) (Ibid.). If one divides this by the total population figure of 30,000,[13] the average daily consumption turns out to be 40 l per person per day. Not only unequal conditions of access in town would prevent every resident from benefitting from this rather small amount, but also recurrent technical failures such as pumps breaking down or pipes bursting mean that the total yield cannot always be guaranteed. Assuming that doubling the current allocation to 80 l per person per day would help materially improve the living conditions of Vaalwater residents and assuming that farmers would not accept to sell water to the municipality for less than the price set in the lease agreement reviewed above, it is possible to make two hypotheses about the costs involved in this, based on the information gathered. First, to double the current water production, the municipality would probably need to rent 8 more boreholes. This would cost it an estimated 1,536,000 ZAR/y. Second, if one looks at the latest lease agreement signed between a farmer and the municipality, one can see that the unit price of water per kl is set at 3.5 ZAR.[14] Since to double water production means to increase the actual water supply by another 1.2 Ml/d, this second hypothesis would cost the municipality an estimated 1,533,000 ZAR/y. Modimolle is already spending at least 400,000 ZAR/y to lease two boreholes in the Vaalwater area. To double the individual water allocation for its residents would raise the cost of water purchase alone (that is to say, without taking into consideration the cost of operating the boreholes) to an estimated 1.5 million ZAR/y. This is quite high for a municipality whose water operating budget is 35 million ZAR/y and water capital budget only 5 million ZAR/y (MLM 2013a: 80).[15] Most importantly, Modimolle would be able to recover only part of such costs via service charges, due to serious affordability issues in Leseding (on which more later).

At this point, it becomes pertinent to consider whether and how the national government assists the local municipality in securing access to water resources for the domestic needs of the population. On the one hand, the National Treasury is transferring to Modimolle 57 million and 39 million ZAR under the Equitable Share and Municipal Infrastructure Grant funding schemes respectively (MLM 2013a: 92). However, only six million from the Equitable Share are counted in the budgeted revenue for water.[16] On the other hand, as noted in the previous chapter, DWS wants

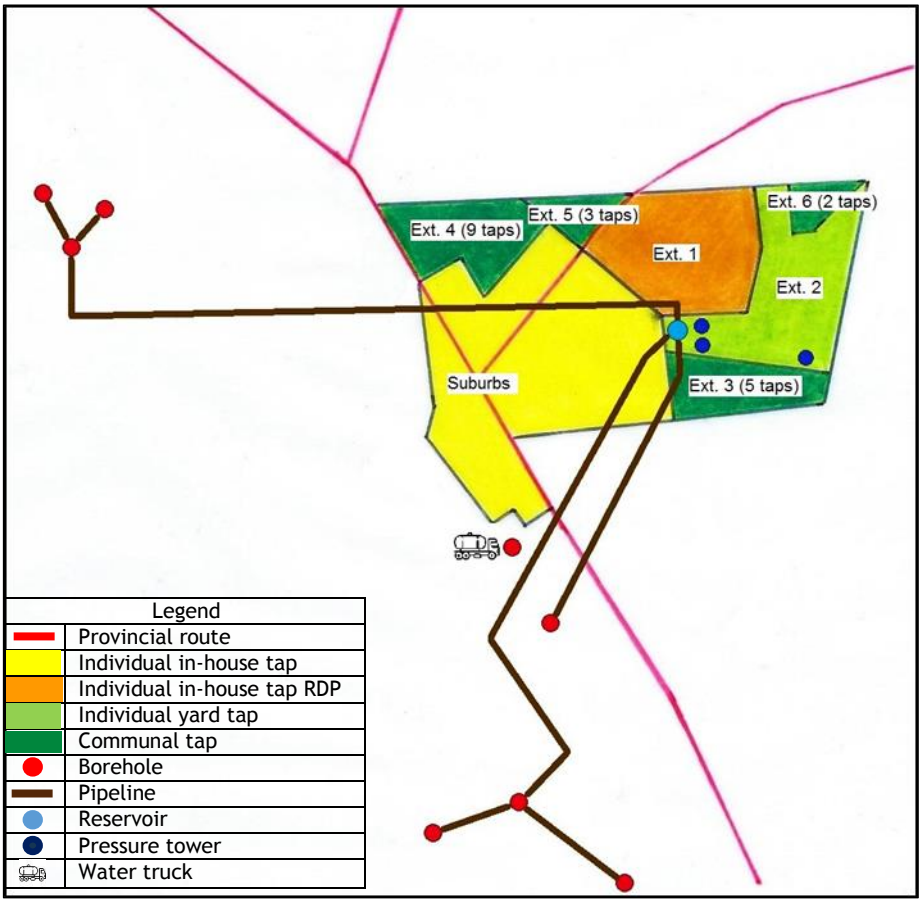
municipalities to reduce, not expand, domestic water demand, by exercising tighter control over citizens' consumption. In order to support its claim, the department is often inclined to reverse the scarcity discourse and use the lack of capacity argument instead. This became evident in the course of an interview with the engineers responsible for MCWAP. The point for me was to understand why the department had not taken the opportunity of the Mokolo Dam's renovation to build a new pipeline (of approximately 70 km) from the dam to Vaalwater, so that the town could finally rely on a secure water source. Besides alluding to the fact that such transfer would make the cost of water services too high (which is questionable, in light of the fact that the pipeline transporting water from the Magalies Water Board in Rustenburg to Modimolle town covers double the distance), the respondents told me that the municipality needed to 'do its homework' before 'coming to DWS and saying they had no water' (Engineer Option Analysis North DWS, personal interview, 15 February 2014). They referred to the All Town Reconciliation Strategies report mentioned above to argue that there was in fact enough groundwater for the town's needs, but Modimolle was not monitoring it neither was it implementing cost recovery and other water conservation measures. Fundamentally, however, the department's concern appeared to be 'do we want development there?' (Ibid.).

Having mentioned lack of capacity in relation to Modimolle, it is crucial to provide some evidence in favour or rather against it. I will do so by looking at each element of the white landowners' narrative presented in section 4.1. First, landowners argue that the municipality lacks planning capacity because it allows people to settle in Vaalwater even if the existing water infrastructure cannot meet their needs. Surely, since 1994 the town has developed without an official plan (and much more than what was originally expected, see Chapter 2), but this has to do with the fact that black (former) farm workers and their families have been relocating there because they had nowhere else to go. Second, landowners argue that the municipality lacks technical capacity. This appears well supported by the meagre composition of the water services staff in Vaalwater, namely: two artisans, one assistant artisan, and six general workers (MLM 2013b: 147). Third, landowners argue that there is a lack of managerial capacity. However, the professionalism of the Divisional Manager Water Services was

evident to anyone who had actually met him, so much so that a ward councillor commented that 'he is not going to hold that position for long' (ward councillor, personal interview, 26 June 2014). This brings to the last argument made by landowners, namely that councillors put their individual benefit before the needs of residents. According to my experience in the field, this claim appears to be true to the extent that it proved almost impossible to gather a full and coherent account of the possible solutions to water shortages in Vaalwater. For instance, at the managerial level, plans to increase water supply in the future were extremely vague and this was justified by saying that the lack of physical and financial resources simply made planning useless (Divisional Manager Water Services MLM, personal interview, 30 January 2014).[17] And yet, each councillor (but also municipal worker) I spoke to was confident about and 'sponsored' a different project, from the one based on converting the disused grain silos in town into a 'water silos' to be filled with surface water from the Mokolo River, to that suggesting that the Magalies Water Board was to build a new pipeline from Modimolle to Vaalwater, to that indicating that a new shopping centre had been granted building permission in exchange for supplying groundwater to town (ward councillor, personal interview, 5 February 2014; ward councillor, personal interview, 8 February 2014; municipal worker, personal interview, 1 October 2013). In these examples, water-related information seems to work as 'currency' (Veldwisch and Spoor 2008) and those who possess it are reluctant to disclose it as if they fear that by doing so, they might lose an opportunity for gain.[18] This resonates well with Beresford's (2015) analysis of gatekeeper politics within the ANC, especially when he argues that local development projects (such as the building of water infrastructure for example) offer public officials the opportunity to distribute resources via informal patronage networks, while at the same time strengthening their own political authority.

Having seen what access to bulk water for the provision of water services means for the municipality, let us follow the resource in Vaalwater and Leseding to grasp the meaning of access for local residents. In doing so, one must bear in mind that the situation on the ground is fluid and messy. While this research has been able to identify some general patterns, it has also captured a specific moment in time, corresponding to the period when the bulk of the interviews in the town and township were conducted (i.e. October 2013-January 2014).

***Map 4.2** Water infrastructure in Vaalwater*



Source: Elaboration of the author based on Map 2.2

Once extracted from the eight boreholes located to the west of town (that is to say, close to the Mokolo River), water flows through a pipeline to one of the reservoirs located in Leseding, which happens to be on the highest part of town.[19] Here the water is treated with chlorine and then distributed to single dwellings and communal standpipes. In order to provide water to what is still considered the town 'proper', namely the town centre, where shops are located, and the (mostly white) suburbs, water is pumped into two steel pressure towers, which then release it by taking advantage

of their height and the natural down-ward slope. A third steel pressure tower located in an open field between extensions 2 and 3 releases water to the former, which is on a slope. Whereas water is distributed to extensions 1, 4, and 5, by pumping it directly from the reservoir into the pipeline network (see Map 4.2 for an overview of the municipal water infrastructure in town).Because of the current deficit between supply and demand, the municipality has decided to ration water by opening the taps of the reservoir only from 5am to 9am and from 4pm to 9pm. In this way however, the water pumped into the pressure towers tends to last a few more hours, while the valves installed in the pumps distributing water to extensions 1, 4, and 5 make sure that not a single drop of water passes through after the system has been switched off. Moreover, in the course of interviews with local residents, it was found that water did not flow through their taps according to such a neat time schedule. Table 4.1 presents a summary of two important variables for each section of town, namely how many hours per day water is available through resident taps and how many litres of water per day a person is able to consume.

***Table 4.1** Times and quantities of water services for Vaalwater residents*

Section of town	Water availability (hrs/d)	Water consumption (l/c/d)
Suburbs	9	195
Leseding Ext #1	2	26
Leseding Ext #2	2	46
Leseding Ext #3	3	32
Leseding Ext #4	4	26
Leseding Ext #5	4	27
Leseding Ext #6	3	22

Source: Data from 70 structured and 44 semi-structured interviews with residents

The first thing that emerges when looking at these data is the degree of water inequality between the white suburbs and the black township. In contrast to what indicated by the municipality, suburb residents said that they usually receive water only during the night. For this reason, most of them have installed a water tank (with a capacity of up to 15,000 litres and a cost between 5,000 and 10,000 ZAR) in the yard and have connected it to the municipal pipeline and to their in-house taps.[20] In this way, water can be safely (and automatically) stored whenever it is flowing in the pipeline. This is an individual solution based on financial means that allows

middle-class residents to gain the most from a precarious water supply. These in fact have the financial capacity both to buy storage appliances, which de facto 'capture' any running water, and to pay the related tariffs. Their attitude towards improving conditions of access in Leseding appears similarly individualized, in that it is limited to help one's domestic workers by offering them some spare litres. Friendship relationships with white landowners also matter in the suburbs, as indicated by respondents who would explain how they rely on extra barrels of water from them and even on invitations to go and take a shower on the farm (suburb residents, personal interviews, 5 December 2013 and 10 April 2014). Yet, a serious reason for complaining about the status of service delivery in town remains the fact that the amount of water received from the municipality is not enough for gardening. Indeed, among the very few respondents that seemed content with their water services and hence living conditions in town, there was a woman, whose long-time acquaintance with a neighbour farmer had allowed her to receive some extra water to maintain her lush garden (suburb resident, personal interview, 4 December 2013). She admitted that in the beginning this caused acrimony among her neighbours, who also wanted more water, but since that 'belonged' to the farmer, they soon realized that they could not claim it (Ibid.).

If coping with water shortages may ultimately be seen as a matter of individual capacity of storing water for personal consumption, then in Leseding residents can rarely afford the luxury of a water tank and have to rely on more mundane containers, hence the much inferior amounts of water they are able to consume on a daily basis.[21] When looking at the daily practices through which township residents have access to water, apparently trivial questions like: how many containers does one own? how big are they? how far from the communal tap does one live? does one own a wheelbarrow? become extremely relevant and can make the difference in a household's water provision. Moreover, the different levels of infrastructure among Leseding extensions play an important role here (see Table 4.2). If the dependence on containers is already evident in extension 1 and 2, where RDP houses are provided with in-house and yard taps respectively and residents have to be ready to collect water whenever it comes, that becomes all the more urgent in the other four extensions of which Leseding is composed, which are provided only with communal taps. Indeed, extension 3 has 5 water tanks of 10,000 litres each, which are filled

up (supposedly) every day by a municipal truck.[22] In extension 4, houses are provided with yard taps, which however are not connected to the reticulation system, and for this reason there are nine communal taps connected to the reservoir. Extension 5 is still regarded as an 'informal settlement' and has three communal taps. Finally, extension 6 has recently been formalized as a residential area, but still relies on only two water tanks filled up by a second municipal truck.

***Table 4.2** Level of water infrastructure in Vaalwater*

Section of town	Status	Water infrastructure
Suburbs	Formal residential settlement	In-house taps
Leseding Ext #1	Formal residential settlement	In-house taps
Leseding Ext #2	Formal residential settlement	Yard taps
Leseding Ext #3	Formal residential settlement	5 communal taps (connected to as many 10,000 l water tanks)
Leseding Ext #4	Formal residential settlement	9 communal taps (connected to the distribution network)
Leseding Ext #5	Informal residential settlement	3 communal taps (connected to the distribution network)
Leseding Ext #6	Formal residential settlement	2 communal taps (connected to as many 10,000 l water tanks)

Source: Data from 70 structured and 44 semi-structured interviews with residents

For people living in extensions 3 to 6, having access to water actually means waking up at 4am or 5am to start queuing at the tap, hoping that water will last until their turn comes.[23] Thus, even though the tap is only a few minutes from home, collecting water (if one is successful) may take up to a few hours. Respondents were quite unanimous in pointing out that they are left without water for a few days every month, while sometimes they do not receive any water for a whole week, and the situation worsens in their perception during the dry months (April-September). Due to the unpredictability of water supply, it is common to see empty buckets being left in a queue at communal taps, as people cannot just sit there the whole day (see Picture 4.1).

***Picture 4.1** Buckets queueing at a communal tap in extension 5*

Source: Picture taken by the author in November 2013

Although they may be able to get enough water on a daily basis (every day being different in terms of how much water is actually available), residents have to learn how to prioritize among basic needs such as drinking, cooking, bathing, and washing, and how to employ as little water as possible in order to allocate something to each use. This collective experience is clearly reflected in the personal account by Mr T., a resident of extension 3 (township resident, personal interview, 24 October 2013):

> Sometimes we go two or three days without water. And when the water comes, you find a queue of 25 l drums. And sometimes the water is finished before it is your turn, because there is someone with 20 drums of 25 l and they want to fill them all. […] When you have school kids, every morning they want to bath to go to school, you must prepare food for them when they come back, you must wash their uniforms […] Sometimes it's difficult, if you only have two 25 l buckets, you have to save, you have to cook, you only wash faces before going to school or to work.

Picture 4.2 *Bath serving as water container in extension 1*

Source: Picture taken by the author in October 2013

Picture 4.3 *Water tank and communal tap in extension 6*

Source: Picture taken by the author in June 2014

All township residents feel compelled to save some water for the day after, in case the taps will be dry the whole day. This is why in extension 1, a bath cannot be employed for washing purposes, but must contain water, with which to flush the toilet (even though one needs many litres to disperse the odours; township resident, personal interview, 28 October 2013) (see Picture 4.2). And yet, people perceive that it may not be good for water to be stored in plastic containers for a very long time, especially under the sun (see Picture 4.3). This is true also for water tanks and trucks, whose cleanliness was questioned by some respondents reporting a few episodes of sickness.

When people remain without any water at home (something that actually does not happen as often as one would expect, in that saving the resource appears more important than consuming it), they ask other township residents for some. Water sharing occurs free of charge, thus becoming an everyday practice of 'water gifts' (Zug and Graefe 2014). However, water gifts appear to be ultimately dependent upon social relations of power based on kinship. Most respondents alluded to a relative living in another extension as a last-resort measure to access water. Extensions 1 and 2 are usually preferred when approaching a household for such purpose, under the (wrong) assumption that, since people there have their own taps, their situation must be far better than that of residents relying on communal standpipes. And yet, the reluctance with which a relative is sometimes given water for free becomes utter refusal when one has no family connections to use as leverage. For instance, in explaining why she does not go to other sections of the township when extension 5 runs out of water, a respondent who had been living in Leseding for four years, but had no relatives nearby, said that 'people there [in extensions 1 and 2] don't give water away because they pay for it' (township resident, personal interview, 13 November 2013).

Notwithstanding the water shortages, in fact, water consumption in extensions 1 and 2 (as well as in the suburbs) is metered and residents receive a single bill for the following municipal services: water provision, sewage treatment, and refuse collection (electricity being pre-paid). According to the Divisional Manager Water Services, the municipality would be happy to run water services according to commercial principles and to apply full cost-recovery when setting water tariffs, but it refrains from doing so be-

cause it recognizes that affordability is a serious issue within the community of Leseding (Divisional Manager Water Services MLM, personal interview, 30 January 2014). The Census 2011 indicates that 39 per cent of the population of Leseding has no income, whereas 50 per cent has an annual household income between 1 and 38,200 ZAR, which translated into income per person per month (namely, 637 ZAR, based on an average of 5 persons per household, Stats SA 2015) is very close to the upper-bound poverty line calculated at 620 ZAR per person per month (Stats SA 2014: 8).[24] In line with the Norms and Standards issued by DWAF in 2001 in response to affordability concerns (see Chapter 3), local water tariffs are organized in three increasing blocks: for the first 20 kl they consume (within a 30-day period), residents pay 9.58 ZAR/kl, between 21 and 30 kl (again, within a 30-day period), they pay 15.34 ZAR/kl, while every additional kl costs them 18.10 ZAR/kl (MLM 2014). Based on the data presented in Table 4.1, one can calculate the average consumption for extension 1 at 3.9 kl per household per month and for extension 2 at 6.9 kl per household per month.[25] This means that on average a household in extension 1 should pay 37 ZAR per month and one in extension 2 66 ZAR per month. While these amounts are clearly too much for the 39 per cent of the township population with no income, they also become unaffordable for the 28 per cent with a monthly household income of between 1 and 400 ZAR (Statistics South Africa, personal communication, 17 September 2014), since water charges would represent at least 9 (in extension 1) or 17 (in extension 2) per cent of their earnings. Having said that, the problem in Leseding seems to be that the actual monthly amount due for water services is much higher than that. For instance, during the course of my interviews it was found out that the average water charges in extension 1 were 250 ZAR per household per month, whereas in extension 2 they were 100 ZAR per household per month.[26] As a result, the default rate appears very high (60 per cent among my 20 respondents) and in fact the Divisional Manager Water Services stated that water consumption in Vaalwater and Leseding is de facto subsidized by residents in Modimolle (Divisional Manager Water Services MLM, personal interview, 20 October 2015).

Non-payment needs some qualification, though. While there are residents who say that they cannot afford to pay anything for water, others are able to pay from time to time, when they have the money to do so, and then they do not necessarily pay the whole tariff, but a portion of it

(what has been referred to as a 'bargaining approach', Smith and Ruiters 2006: 197). Thus, although the municipality in Modimolle says that it does not tolerate non-payment and is ready to react by cutting off services (with the exception of registered indigents), this research shows that people are able to negotiate with municipal clerks based in Vaalwater and find an (again, individual) agreement that safeguards them from immediate sanctions. Surely, this put public officials in a position of power over residents, as they can threaten them to cut their services (not just water, but electricity too) in order to collect some money. One respondent even said that the municipality informed her that they were going to deduct 200 ZAR for water from her old age pension (namely, 1,200 ZAR and the only source of income for a family of 11), so that she hurried up and went to pay that sum (township resident, personal interview, 22 October 2013). In a similar vein, although none of my interviewees confirmed to receive material assistance by municipal workers operating the water infrastructure, one of these (who clearly possessed some of the characteristics of a gatekeeper, in that he controlled physical access to water resources and everyone appeared to treat him with a respect that bordered on fear) admitted that sometimes he 'may help solve a problem within someone's private yard either for free or in exchange of small fee or a gift' (municipal worker, personal interview, 1 October 2013). Back to non-payment, the municipality keeps record of that, which is reflected under the entry 'outstanding account' in the municipal bill. Even though in the past Modimolle has cleared the debts accumulated by residents, people are still concerned about this aspect (whereby they can owe anything between 1,000 and 30,000 ZAR), especially as they say that the total amount keeps changing from month to month and even if they pay something that does not decrease.

In order to tackle the affordability issue in Leseding, the municipality introduced a local indigent policy in 2009, that is to say eight years after DWA launched the Free Basic Water policy (see Chapter 3). According to this, residents from extensions 1 and 2 who are not working or have a monthly household income of less than 1,100 ZAR are expected to register with the municipality in order to receive 6 kl of free water per household per month (MLM n.d.). Given the current water shortages, it seems unlikely that registered indigents are actually receiving such amount. That would possibly explain why, during a meeting with the Indigent Clerk, I

was told that indigents would only receive a 'drum' of water (that is, 200 l). He knew that the amount was little, but that was precisely because it was given for free (Vaalwater Indigent Clerk, personal interview, 18 February 2014). According to this official in fact, the policy is intended to help the community, but it cannot substitute for the duty of people to pay their municipal bill. Although the Divisional Manager Water Services in Modimolle firmly rejected the claim that registered indigents in Leseding were receiving a smaller amount of free water and the Indigent Clerk later told me that 'drum' was merely a colloquial term that he would use with illiterate people, it was impossible for me to verify this information, as none of my respondents was registered as indigent. When I asked people whether they knew about free basic water, they usually recalled promises made by the municipality or forms to be filled in, but with no outcome for the applicants. The Indigent Clerk confirmed that the application process may take a very long time and he also told me that the total number of registered indigents for the financial year 2013/2014 was 823.[27] Furthermore, the application procedure is quite demanding, as applicants have to fill in detailed information about their finances and municipal expenditures, produce the signature of both a community development worker and police commissioner, and trust their ward councillor will approve their demand – something that, as noted by Hart (2014), considerably increases the power of councillors and reinforces their patronage networks.

Notwithstanding the hardship suffered by Leseding residents and their anger at the municipality, the place is characterized by an apparent lack of resistance, at least in the form that has become most common in the rest of the country that is, service delivery protests.[28] There seems to be two main reasons for that. First, some respondents said that they would not take the streets for fear that in a small town like Vaalwater the municipality would be able to identify them and harass them afterwards. Also, the place is too far from the centre of local political power in Modimolle (where the mayor, councillors, and municipal managers have their offices) to make sure that residents' requests are heard. Second, Leseding is a relatively new township that does not have any memory of anti-apartheid struggles. Moreover, the bulk of its population (farm workers and their descendants) has historically avoided to engage in open and organized confrontation. Therefore, the township appears to offer a concrete example of what Frances Cleaver has recently referred to as 'politics of accommodation', to

make sense of those contexts where struggles are manifestly absent and instead people rely on and reproduce unequal access to resources.[29] Two elements are illustrative of why and how this is happening in Vaalwater. On the one hand, in accordance with the working of biopower, people have internalized the norm that they must limit their water consumption (since they cannot pay for it) by adapting to, rather than contesting, water shortages and thus learning to use the smallest quantities possible and to store water away for future needs. On the other hand, following Ferguson's (2013) argument about dependence as a form of agency for surplus populations, the same people who were used to receive water from paternalist white farmers,[30] are now content to be given at least some free water by the state, as that becomes a crucial means to address pressing material needs in a context of poverty and unemployment. Hardly any respondent in fact would articulate her demand for more water in terms of socio-economic rights of citizenship. Whereas only a few would question the electoral promises to improve service delivery made by ANC before the national elections of 2014.[31] That the ruling party has de facto abandoned Vaalwater residents to rely on a precarious water supply may be explained by the fact that farm workers do not represent its historical constituency (which, however, according to Southall and Butler (2015), is now becoming more composite by extending beyond the black working class in the mines, factories, and service industry). And yet, a more radical argument is that, in continuity with the apartheid state, the ANC still considers Vaalwater as a 'black spot', whose presence threatens the economic growth of the Waterberg as based on nature conservation. For this reason, the government does not invest resources in a place where people should rather be discouraged from settling.

If unequal relations of power over access to water resources (i.e. white farmers vis-à-vis municipality and national vis-à-vis local government) and services (i.e. residents vis-à-vis municipality and residents vis-à-vis residents) contribute to water poverty in Vaalwater and especially Leseding, this poverty turns manifestly into inequality when one considers the uneven patterns of consumption between town and the private farms occupying most of the land on the Waterberg plateau. Ultimately, this reproduces and reinforces the spatial geography of apartheid, whereby white farms had water in abundance, whereas the water needs of black settlements were neglected. One does not need to travel a long distance from

Vaalwater to enter one of the private farms surrounding it. And yet, when doing so, water shortages almost become a distant memory, since water here is always enough, if not abundant, for the needs of both owners and workers as well as crops, cattle, and wildlife. Whereas in town water access is mediated through market transactions and techno-fixes (i.e. free basic water, Hart 2014), on farms it is direct, meaning that their residents are not served by the municipality, but rather have to provide water for themselves, by pumping it out of rivers, streams, and boreholes.[32] Respondents would point out that that may be expensive (especially due to the cost of electricity), but none of them would actually say that he or she could not afford it. Provided that pumps work properly, water is available through taps every day, at every hour. Once extracted, it is then employed for multiple uses (household, irrigation, cattle, game, and tourism). This, coupled with the fact that water is rarely metered, makes it extremely difficult to know how much is consumed for domestic purposes alone.

In the course of my interviews with farm owners and managers, it was calculated that farm residents consume on average between 359 (crop/cattle farms) and 606 (game farms) litres per person per day.[33] Again, these are broad estimates, which cover very different situations on the ground. For instance, these data do not tell that on the same farm the level of infrastructure serving the water needs of owners and tourists may be very different from that serving the water needs of resident workers (who are increasingly asked to pay for their water consumption). Furthermore, they do not hint at the fact that also access to water for farm workers living in the township is affected by social relations of labour. That is to say, the salary that these people receive can be used to buy water from the municipality and because of their working relationship with the farmer, they may hope to receive a barrel of free water to deal with water shortages.

However, what these data show, especially when compared with those presented in Table 4.1, is that *some* Waterberg residents are allowed to satisfy their most basic needs (such as drinking, cooking or taking a bath) up to 28 times the amount consumed by inhabitants in extension 6. Such difference is ultimately explained by where one happens to live, which in turn largely depends upon their class and race (see Table 4.3).

***Table 4.3** Water inequality in the Waterberg*

Typology of settlement	Water availability (hrs/d)	Water consumption (l/c/d)
Suburbs	9	195
Leseding Ext #1	2	26
Leseding Ext #2	2	46
Leseding Ext #3	3	32
Leseding Ext #4	4	26
Leseding Ext #5	4	27
Leseding Ext #6	3	22
Crop/cattle farms	24	359
Game farms/private nature reserves	24	606

Source: data from 70 structured and 87 semi-structured interviews with residents

4.4 Conclusion

This chapter has shown that water scarcity in the town of Vaalwater results from a deeply unequal distribution of resources in the Waterberg plateau. It demonstrated that white farms benefit from an abundance of water, whereas what has now become a black settlement must rely on residual resources. This argument is supported by three main considerations. First, the past (i.e. apartheid) resource allocation has been left untouched by the water reform of the post-apartheid era. This means that the major source of surface water on the plateau (that is, the Mokolo River) still belongs to white commercial farmers (who can claim ELUs over it), but it is also intended to meet the future water needs of Medupi power station. Second, while the ANC's government is investing in a multi-billion ZAR project aimed at increasing surface water supply for Medupi, Modimolle Local Municipality is encouraged to reduce the water demand of its citizens and, if need be, to exploit the untapped groundwater resource, which is currently undeveloped. Yet, and finally, access to groundwater for the municipality ultimately depends on social relations of power based on the private ownership of land and water resources on the part of commercial farmers. This means that Modimolle should purchase bulk water from farmers in order to be able to provide water services in town, even though this appears financially unsustainable.

To recognize that in the formerly 'white' countryside of South Africa patterns of water access and use are still profoundly uneven across class and race is important and necessary in light of the predominant tendency to consider white farms and black settlements as places apart – that is to

say, the very idea of separateness on which apartheid was founded. However, what is also very much needed is a comprehensive understanding of how and why water inequality is being currently reproduced. This is the objective of the next two chapters.

Notes

[1] Although in this case, it is socio-economic (rather than cultural) differences that need to be recognized.

[2] Based on police's statistics, Alexander and Pfaffe (2014: 208) note that protests involving unrest increased to more than a thousand per year between 2009 and 2012. However, Duncan (2014) cautions against the politics of counting protests, meaning that although these have clearly risen since 2009, media reports do not triangulate data sufficiently, while overstating violence and service delivery issues.

[3] This term was introduced by the White Paper on Local Government of 1998, where it is defined as 'local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs and improve the quality of their lives' (Ministry for Provincial Affairs and Constitutional Development 1998, s. B1).

[4] This is an initiative of the Presidency and the Department of Cooperative Governance and Traditional Affairs aimed at improving municipal performance by 'getting the basic rights'. The approach is based on five pillars, namely: putting people and their concerns first; supporting the delivery of municipal services to the right quality and standard; promoting good governance, transparency and accountability; ensuring sound financial management and accounting; and building institutional resilience and administrative capability ('Back to Basics' n.d.).

[5] The average annual rainfall that I have calculated for the period 2000-13 using verified data from the meteorological station at the Mokolo Dam is 670 mm, namely quite higher that the national figure of 450 mm (Tapela 2012: 18). However, there may be great variability from one year to another. In the time span considered, it rained as little as 298 mm/y (2003) and as much as 1,312 mm/y (2010). Also, in addition to be seasonal (October-March), precipitation can be concentrated in a very small period of time, as I experienced during my fieldwork. In March 2014, in fact, almost 400 mm of rain fell in only 10 days causing floods, which washed away several farm dams and roads.

[6] The category 'rural use' includes domestic consumption and smallholder irrigation.

[7] In the past, the Mokolo catchment included two Government Water Control Areas (see Chapter 2), one irrigation board, and uncontrolled areas, each of which defined lawful use differently.

[8] The lack of water metering made impossible to gather information on the actual water consumption of farms for irrigation purposes. Still, the value of the official (i.e. registered) water allocation conveys a sense of the order of magnitude of water use on crop (and cattle) farms (that is to say, millions of litres per day). The figure of 812,661 m^3/y was calculated on the basis of the responses of 14 out of 20 farmers interviewed. The smallest water allocation per individual farm that I recorded was 150 m^3/y, whereas the largest was 2.5 Mm^3/y.

[9] As shown by this literature, municipalities usually buy bulk water from state-owned and commercially managed water boards.

[10] This amount was supposedly calculated on the basis of the unit price that the municipality was paying to the Magalies Water Board to supply water in Modimolle town (local attorney, personal interview, 9 June 2014).

[11] To be fair, the municipality had not informed the landowner before starting the works: he accidentally found municipal workers digging the ground in front of his gate on a Sunday morning (crop/cattle farmer, personal interview, 13 June 2014).

[12] It seems that the municipality bought three of them for a lump sum of 100,000 ZAR at some point in the past (local attorney, personal interview, 9 June 2014), but no evidence of that was found during the course of this research. A ninth borehole is operated directly by the landowner who owns it to supply water to a section of town sprung up around the former train station on land owned by Transnet rail company. It is interesting to note that this is the only area of town where water cut-offs seem to take place with some regularity. Apparently, if the municipality does not pay the borehole's owner on time (the monthly amount being 5,000 ZAR), the latter simply switches the pump off, without notifying residents.

[13] This dissertation employs this population figure (which I received from the Divisional Manager Water Services), rather than the official census data (i.e. 16,463 people, Stats SA 2015), in that the latter appears to be a serious underestimation.

[14] This is calculated as the rental fee (i.e. 16,000 ZAR/m) divided by the estimated borehole yield (i.e. 150 kl/d). I am in possession of a copy of the lease agreement dated (but not signed) 11 December 2012.

[15] The figure for the water operating budget is taken from a copy of the Monthly Management Report for the month of April 2014 that I have personally received from the Divisional Manager Technical Services on 16 May 2014.

[16] See endnote 15 for source.

[17] It should be noted that the manager also alluded to the water licencing process in the plateau to say that if DWS found any unallocated water left, the municipality could receive it. However, this is clearly against the department's recommendation to use groundwater, not surface water, to supply water services.

[18] Indeed, during a follow-up visit in October 2015, a respondent not so subtly threatened me that I would get into trouble by asking too many questions on the subject.

[19] The fourth borehole from the north is the only one, which is not connected to the pipeline, so that it is usually employed to fill municipal water trucks. In October 2015, I found out that everyone can now go to the borehole and extract water from it, as it is considered an emergency source of water for situations when the taps run dry. And yet, given the distance between the borehole and the township, a respondent told me that to get water from there, she would need to hire someone with a car for 120 ZAR (township resident, personal interview, 22 October 2015).

[20] A few have also drilled a private borehole on their property, which would produce a small yield sufficient for a single household.

[21] Of the 60 people interviewed for the purpose of filling in the questionnaire (see Chapter 1), only 13 were permanently employed (as domestic workers, municipal general workers, in services and construction), while the rest supported themselves through piece jobs (for instance, repairing potholes on provincial roads) and social grants. This is in line with the Census 2011 data. Having cautioned against the accuracy of the census data for Vaalwater, one must still refer to them as they are the only statistics disaggregated at the level of individual settlement within the municipality. According to these data, the working age population (i.e. 15-64 years old) of Leseding amounts to 7,500 people or 60 per cent of the total. Of these, 32 per cent is employed, 20 per cent is unemployed, 4 per cent is a discouraged work-seeker, and 44 per cent is not economically active (Statistics South Africa, personal communication, 17 September 2014).

[22] To clarify, in extensions 3 and 6, water is available only a few hours per day because it finishes shortly after the municipal trucks have refilled the water tanks. Usually, trucks, which have a capacity of 9,000 l, make five loads per day between 9am and 5pm (municipal worker, personal interview, 22 October 2015).

[23] Although it may happen that someone jumps up the queue or takes a longer time to fill in bigger containers, tensions at the tap were hardly recalled by respondents.

[24] Here, I refer to datasets personally received from Statistics South Africa (Statistics South Africa, personal communication, 17 September 2014) in that they provide more details than those to be found on the Leseding Census 2011 webpage (Stats SA 2015). One must note the high degree of difference between these two sources, though.

[25] The average household size in Leseding being, as noted above, five persons.

[26] Also in the suburbs water charges were found to be higher than expected. Here, the average consumption was calculated at 22.2 kl per household per month, but instead of paying 226 ZAR, the average water bill turned out to be 500 ZAR. Some respondents argued that the reason for that was that water meters were registering air passing through the pipes.

[27] This is definitely a small number in light of the income data presented above. However, it is difficult to calculate how much of the total population of extensions 1 and 2 it represents, since there are no population data disaggregated at the level of single extension.

[28] The online archives of the local newspaper *The Beat* report only two protests in Vaalwater, one in November 2012 and another in November 2015 (Bapela 2012, Ringane 2015).

[29] This was the subject of a paper that Prof. Cleaver presented at the first POLLEN Conference on Political Ecologies of Conflict, Capitalism and Contestation, Wageningen, 8 July 2016.

[30] Indeed, although life on the farms was tough, many respondents stressed that they never struggled for water and food there.

[31] In 2014, the ANC still received the majority of votes in Modimolle (i.e. 65 per cent). However, the party lost the municipality in the local elections of 2016. With only 47 per cent of votes, the ANC did not secure a majority of council seats, so that the new mayor (a Democratic Alliance, white, female candidate) was elected through an agreement between the Democratic Alliance (that received 24 per cent of votes) and the Economic Freedom Fighters (that received 19 per cent of votes) (IEC 2016).

[32] As noted in Chapter 3, irrigation farmers must pay charges for abstracting raw water to DWS, but at the present moment these are nominal.

[33] Although they appear quite high, these levels of water consumption are categorized by the All Town Reconciliation Strategies between 'average' and 'maximum' in high income and very high income single residential dwellings (DWA 2010a: 10).

5 Water inequality and the private/public question

The aim of this chapter is to discuss one specific way in which water inequality is currently being reproduced in the Waterberg. This has to do with what I refer to as the private/public question about water. In the literature on the neoliberalization of water (see for instance Smith and Ruiters 2006), this question usually pertains to the delivery of water services (intended as a public good) by private providers (or according to private sector principles). Here, however, the matter is turned on its head to consider a situation where the provision of public water services rests on privately owned water resources. Chapter 4 has shown in fact that in the absence of allocable water, Modimolle Local Municipality must purchase groundwater from private landowners in order to meet the domestic water needs of Vaalwater residents. This compels us to question both categories in some depth. What is meant by owning the resource water and what does it imply? Similarly, what does 'publicness' mean and how does it inform the provision of water services on the plateau?

The main argument of the chapter is that water inequality represents an inherent feature of the Waterberg's waterscape because private ownership of water resources *and* public provision of water services are complementary aspects of the same process of water commodification. This means that, as both spheres are underpinned by a logic of accumulation, it becomes necessary to limit the redistribution of water to the poor to a minimum. Although this should be at least 25 l per person per day, the previous chapter has shown how in practice people must rely on much smaller amounts. The chapter contributes to the overall argument of the dissertation by showing that water inequality in the plateau is not only a legacy of colonialism and apartheid, but also the outcome of a contemporary process of neoliberal accumulation, whereby natural resources are incorporated into capitalism (Arsel and Büscher 2012). Furthermore, it is pointed out how water inequality is being normalized, in that everyone is allowed to participate in the market for water services and the allocation deriving from it is assumed to be just by the state.

The chapter is organized in three main sections. The first section reflects on the de facto overlap of property regimes characterizing water resources in post-apartheid South Africa. Also, this section introduces some of the scholarly debates on the notion of publicness that inform the remaining of the chapter. The second section focuses on private ownership of water resources in the Waterberg by critically discussing landowners' perspectives on it. Finally, the third section looks into public provision of water services on the plateau from the municipality's viewpoint.

5.1 Private resource, public service

As it was noted in Chapter 3, the legal status of water in post-apartheid South Africa is rather ambiguous.[1] In the 1996 Constitution, water resources are implicitly referred to only in section 25, namely the so-called 'property clause', which sanctions state's protection of private property rights under the new dispensation. It is worth quoting section 25 at some length in order to appreciate its scope (RSA 1996):

> (1) No one may be deprived of property except in terms of law of general application, and no law may permit arbitrary deprivation of property.
>
> (2) Property may be expropriated only in terms of law of general application—
>
> (a) for a public purpose or in the public interest; and
>
> (b) subject to compensation, the amount of which and the time and manner of payment of which have either been agreed to by those affected or decided or approved by a court.
>
> […]
>
> (4) For the purposes of this section—
>
> (a) the public interest includes the nation's commitment to land reform, and to reforms to bring about equitable access to all South Africa's natural resources; and
>
> (b) property is not limited to land.
>
> […]
>
> (8) No provision of this section may impede the state from taking legislative and other measures to achieve land, water and related reform, in order to redress the results of past racial discrimination […]

Ntsebeza (2007) argues that 'there is a fundamental contradiction in the South African Constitution's commitment to fundamental redistribution to the dispossessed while at the same time protecting existing property rights. The two […] cannot happen at the same time'. Although this comment is made in relation to land reform, it also holds true within the context of water, where the ambit of redistribution has been particularly limited (see Chapter 3).

The Constitutional text also makes explicit reference to water services in section 27, which states that 'Everyone has the right to have access to […] sufficient food and water' (RSA 1996). In this way, the South African legislator introduced the human right to water, that is to say the individual right to have access to safe drinking water (Sultana and Loftus 2012), well before that was even declared by the United Nations General Assembly in 2010 (de Gaay Fortman and Marcatelli 2015). Over the past twenty-some years, the national jurisprudence has demonstrated that socio-economic rights must be interpreted as claims to progressive realization rather than claims to actual goods or services (Mazibuko and Others v. City of Johannesburg and Others 2009, Wilson and Dugard 2014). Nonetheless, private ownership of water resources (as opposed to that of water infrastructure) can in principle undermine the state's protection of everyone's individual right to 'sufficient water'. This means that if all water resources were made subject to private property rights, the state would not have the authority to prevent some individuals from being excluded from access.[2]

In seeming contradiction with the Constitution, the National Water Act of 1998 establishes common property rights over the country's water resources. Actually, as noted by Blackmar (2006), the public trust doctrine introduced by the Act tends to use the term 'common' and 'public' almost interchangeably. As a result, it appears that water belongs to 'the commons' (meaning those resources whose access is regulated under a common property regime, whereby the individual has a right not to be excluded from their uses or benefits), but is managed as public property (meaning that the state decides over the resource allocation). Nevertheless, to comply with the Constitution, the Act also recognizes private ownership of water for some (that is to say, white commercial farmers), by instituting the notion of Existing Lawful Uses (ELUs, see Chapter 3). In other words, white commercial farmers (or for that matter anyone, who buys a farm and converts it to other productive uses than crop and cattle farming)

are the only ones who can still exercise private property rights in water pending their conversion into administrative permits (i.e. water licences). That ELUs qualify as private property rights is demonstrated by the fact that compensation (as per property expropriation) can be claimed in case the state does not convert an ELU into an equivalent water licence (RSA 1998, s. 22.6).[3]

Chapter 4 has shown that in the Waterberg the private property rights in water resources held by white landowners clearly prevail over the common property rights held by the whole citizenry. Indeed, water services delivery in Vaalwater is constrained by the fact that bulk water is owned by landowners and the municipality's access to it is shaped by unequal power relations resting on property rights. Before expanding on what it means to own water as a resource and what it entails, it is relevant to recall that drinking water provision in Vaalwater is a public service. In the scholarship on water (services) privatization, the notion of 'publicness' has largely been treated as a black box, as private service delivery is juxtaposed to state provision without engaging with the actual meaning of the latter (for a critique, see McDonald and Ruiters 2012). And yet, it is important to explore it in detail to see whether and how it informs the redistribution of water on the plateau.[4]

Following Newman and Clarke (2009: 2), my point of departure is that things 'are made public', meaning that there is nothing 'natural' about the idea of publicness, but rather its meaning and practice are contested over time and space. For instance, in her analysis of the human condition in modernity,[5] Hannah Arendt (1958) argues that one of the key features of the modern age is the merging of private and public space into what she refers to as 'the social', whose foundation is the 'common wealth' intended as a shared concern for private accumulation on the part of property owners. Paradoxically then, according to Arendt, the care for private property (that is, wealth) is the only common concern left during modern times.

The view that under capitalism the categories of public and private have become closely intertwined is shared in Blackmar's (2006) historical perspective on the emergence of public space in the United States. The author argues that in the nineteenth century public space had a double meaning, being referred both to public land redistributed by federal government to private owners and private land expropriated by local and state governments for the purpose of creating public goods such as streets, parks, and

waterways. According to Blackmar, this shows how in the United States private and public property rights developed together in a dialectical and complementary relationship: property owners (as tax payers) wanted autonomy from the government in their exclusive control of resources, but at the same time wanted the government to provide public institutions (that is, public space) that would promote their economic activity. The creation of public property thus 'represented a different logic of redistribution, an investment in the infrastructure of social peace and democratic capacity as well as in the infrastructure of production or markets' (Ibid.: 54).

According to Newman and Clarke (2009: 4), public services are a 'medium of publicness', meaning that 'they are both constituted by, and constitutive of, notions of publicness'. With specific regard to water services, Bakker (2003) represents an important exception within the literature on privatization mentioned above, in that she offers a thorough analysis of the category of public that goes beyond a static state/private sector divide. The author adopts a historical approach to show how public services were conceived under the so-called 'state hydraulic' paradigm of water regulation, which developed in England and Wales during the course of the twentieth century. In this paradigm, water is seen as a strategic resource within the process of modernization from two separate, but complementary angles: as a factor of production to stimulate economic growth and as a welfare state component to guarantee that all citizens fully participate in public life (and are healthy enough to participate in the labour market). For this latter reason, water supply is managed as a public service, meaning that it aims at universal provision of regular and reliable amounts of the resource, whose pricing is based on social equity (hence, cross-subsidization among classes of consumers). As Bakker (2003: 22) puts it, 'drinking water, as with other welfare services, was included in a broader set of socio-cultural entitlements to which all citizens had access; material "emblems" of citizenship, which were the moral duty of society, via the welfare state, to provide'. Taking advantage of the fiscal crisis of the state in the 1970s, the state-hydraulic paradigm was progressively replaced by what Bakker names a 'market environmentalism' paradigm of water regulation. In this paradigm, water supply is seen as a business, so that market mechanisms are employed in 'resource policymaking, regulation, allocation, and

ownership' (Ibid.: 13). This is based on and works through the fundamental process of water commercialization. Commercializing water supply implies three operations: valuing water as a scarce resource with the aim to maximize efficiency (hence, welfare) through allocation to highest-value uses; assigning a price that is cost-reflective (through marginal cost pricing) and metering household water consumption (to communicate price signals); and opening the sector for competition (by selling assets to private companies). The point here is that such a shift is interpreted by Bakker as a generalized transformation in the political economy of service delivery in Britain, which did not imply the withdrawal of the state. For instance, the ownership of water resources rested with the latter, whereas private water companies held ownership of water infrastructure. Rather, water privatization is understood as a reconfiguration of the 'relationships between state, market, individuals, and the environment', whereby the state takes on the role of regulator and the market that of provider, whereas citizens (as consumers) and the environment compete for water and investment in the resource (Ibid.: 10).

The foregoing makes it possible to argue that the privatization of water services has occurred at the same time as and has essentially stemmed from a profound change in the very notion of publicness. This is evident in the emergence of the so-called 'New Public Management' (NPM) paradigm in the 1980s (Hood 1991, 1995). NPM indicates a reform of the public sector (first in the United Kingdom, but later in many other developed and developing countries) that rests on three main tenets: managerialism and performance measurement; organizational restructuring (i.e. corporatization of government departments, see McDonald 2014); and marketization (i.e. privatization and liberalization of public services) (Batley and Larbi 2004). From a theoretical perspective, NPM is underpinned by New Institutional Economics (NIE, North 1990). NIE shares the fundamental assumption of neoclassical economics that markets represent the most efficient mechanism for allocating resources and maximising social welfare (as per Pareto optimality) (Fine et al. 2001). However, it emphasizes the role of institutions, such as (private) property rights and contracts, in reducing transaction costs between market agents (Fischer 2014). In political economy terms, the assumption that the market is the most efficient mechanism for the provision of public goods and services has

opened up new opportunities for capital accumulation for some, while legitimizing the recourse to a basic needs approach for others. This means that for those who cannot afford to access essential services (such as water and sanitation, electricity, and healthcare), the state offers a safety net in the form of a minimum provision (see the discussion on free basic services in Chapter 3).[6]

5.2 Private water as capital

What does it mean to own the resource water? What does it imply? And how does that influence one's understanding of publicness? These are questions that were explored at length with Waterberg's white landowners, both irrigation and game farmers. From a landowner's perspective, private property rights in water do not rest so much on the law (the knowledge of which is rather patchy), as much as on the specific conditions of production of the resource. As it was noted in Chapter 4, water production on the plateau is essentially artisanal, meaning that water is extracted and consumed (mostly untreated) at the level of the individual farm. The fact that landowners do not receive water through a state-owned network supply infrastructure, but rather have to provide it for themselves by building private waterworks to extract and store it, is what makes them assert that 'the water is mine'. More specifically, it is the labour (and capital) put in the production process that offers them a strong moral justification to claim private ownership of water resources. This clearly echoes the classic argument in favour of a natural right to private property advanced in the 1630s by settlers in the British colonies of North America, among whom was John Locke (Linklater 2013: 27). The fact that in the South African context the labour required to build a dam is usually performed by black workers does not seem to shake the landowners' position, as what matters here is the spirit of initiative, something that blacks, according to most white farmers, 'obviously' lack (crop/cattle farmer, personal interview, 28 July 2014). The attitude of traditional farmers towards game farmers is a case in point. Although admitting that game farmers are 'completely illegal water users' (in that they do not register with DWS, see Chapter 6), one of the chairs of the Vaalwater Water User Association (WUA, whose membership is composed exclusively of white commercial farmers) told me that it would be unfair to control and tax their water uses because 'they already took a risk by investing their money into drilling boreholes that

may run dry at some point' (crop/cattle farmer, personal interview, 25 July 2014).

Following its status as an individual possession, water is treated as capital, which in Marxist terms is defined as a process, that is, 'value in motion' (Büscher 2014, Harvey 2010). For this reason, water must be employed in activities that produce value, such as irrigation for the purpose of crop cultivation (in fact, in the past water rights were measured in hectares of land under irrigation rather than volumes). And yet, as one farmer put it, he 'cannot waste water on wheat' (crop farmer, personal interview, 10 January 2014), meaning that the resource must yield the maximum value possible, which in the Waterberg is mainly achieved through tobacco farming. During apartheid, white commercial farmers could buy and sell unutilized or underutilized water on a market for water rights, albeit this was heavily regulated by DWAF and limited to irrigation (Nieuwoudt and Armitage 2004). Despite the fact that DWS is currently discouraging water trade among users (see Chapter 3), the increase in the water needs of Vaalwater town after 1994 has been seen by landowners as a new opportunity for accumulation (only this time based on rent). In this way, and in contrast to Bakker's (2003) argument for water *infrastructure* as an 'uncooperative commodity', water *resources* at the local level of the plateau have become easily subject to full commodification. Bakker's claim is based on the combination of four characteristics of water that hamper as many aspects of the commodification process (Castree 2003). First, privatization is constrained by the fact that water is a flowing resource. Second, valuation is hindered by the fact that water abstraction, distribution, and disposal produce environmental and social (i.e. public health) costs that are not usually translated into the price given to the resource. Third, standardization is inhibited by the fact that water quality is variable. Fourth, competition and liberalization are difficult to achieve in that water is heavy (hence, expensive) to transport. However, in the context of the Waterberg, such aspects lose some of their validity, since private property rights in water are clearly established and serve to exclude individuals from access to the resource; landowners do not sell water directly to citizens/consumers, hence the water price does not need to reflect environmental and social externalities; being extracted from local boreholes, the quality of water is very similar; and the municipality can buy water from several landowners located in the vicinity of Vaalwater.

Private ownership of water is so deeply entrenched in landowners' minds, to the point that, notwithstanding the property clause guaranteeing them security of their water entitlements (at least, for the time being), the very process of legal reform aimed at redressing past inequalities in the distribution of the resource is sometimes perceived as a form of expropriation. This position is particularly supported by the Transvaal Agricultural Union (TAU), which is a right-wing farmers' union with a strong base in the Vaalwater area. In a 2013 memo addressed to DWA, TAU elaborates on this aspect in the following, strong language:[7]

> The act of claiming jurisdiction over all forms of water and self appointment to issue licences and divide it according to own terms and conditions, is one that seriously violated the basic rights of irrigation farmers. Our right of access to water resources developed by ourselves with our own capital is being violated by legislation enforced upon us by the DAW [sic]. This is expropriation without consultation or compensation. We do not recognize the DAW [sic] claim to the custodianship of private water. No service is delivered to either manage or protect privately developed sources.

The meaning of this statement can be expanded in relation to two issues that emerged from my interviews with landowners. On the one hand, landowners do not believe that the state should administer water resources with the aim to achieve a more just distribution of them, as that would infringe on their own property rights (which, in the landowners' perception, appear to come first above the human right to drinking water). On the other hand, they do not believe that the current government would be able and willing to achieve such purpose. From a landowner's perspective, the ANC has appropriated the water resources of the country to turn them into a source of state accumulation. And yet, this will not result in redistribution to the poor (nor support to the agricultural sector, for that matter), but in personal gains for government and party's members. For instance, the idea that the local municipality is profiting from water service provision in Vaalwater was employed to argue that farmers are justified to do the same when selling their water to Modimolle. Ironically, considering that farmers in the Waterberg have been historically neglected by the state (see Chapter 2), the current lack of water services targeting the agricultural sector is referred to as evidence of DWS' incompetence and drive for self-enrichment and put in contrast to the apartheid state, when department

officials were professional and the state supported agriculture. Furthermore, the appropriation of private water resources to the advantage of the public sector is perceived as a concrete step towards the elimination of private property as a whole, something that would deprive people of their rightly acquired land and throw the country into chaos. This is the reason why a comparison is usually made between water and mineral rights.

Following the introduction of the Mineral and Petroleum Resources Development Act in 2004, private ownership of (unused) mineral rights has been abolished and in the same way as with water, the state has become custodian of this 'common heritage' and can now allocate and dispose of exploitation rights. Recently, the Constitutional Court has issued a judgment on the matter of expropriation without compensation that the farming community sees as a 'dangerous precedent' (TAU employee, personal interview, 12 May 2014). According to the Court, in fact, the Act does deprive mineral rights holders of their rights, but such deprivation does not equal expropriation (in need of compensation, conforming to section 25 of the Constitution). The main judgment, written by Chief Justice Mogoeng, found that by assuming custodianship of the country's mineral and petroleum resources, the state did not acquire ownership of these rights. Furthermore, notwithstanding the fact that private property rights cannot be over-emphasized at the expenses of addressing the injustices of the past, the transitional period following the implementation of the Act guaranteed security of tenure for rights holders. In a separate judgment, Justice Froneman disagreed on the matter of state acquisition, saying that 'the state acquired, in a material and substantive sense, at least some of the power and competencies that previously vested in private ownership' (Agri South Africa v. Minister for Minerals and Energy 2013: 54). However, he argued that the transitional measures could be interpreted as 'compensation in kind' equivalent to just and equitable compensation in the case of loss of property.[8]

The complementary issues of expropriation and compensation become particularly relevant in the Waterberg, where competing water demands (not only from Vaalwater town, but especially from Medupi power station) seem to make a strong case for the state to buy farmers' water entitlements. Since a land without water loses its economic value (in fact, in the past water rights were attached to land titles), landowners appear quite resigned to the idea that they may have to be de facto expropriated from

their farms in the future. What appears to be really at stake, however, is the issue of compensation. Landowners in the Waterberg are generally willing to leave,[9] as long as state compensation is 'fair', that is to say according to the market value of their property. Yet, quite paradoxically, the fact that water quality on the plateau has proven to be much higher than in the rest of the country is being reflected in the increase of the price of the land (crop/cattle farmer, personal interview, 19 May 2014).[10] Therefore, until the national government does not address the market value question (the Constitution does not state that this is the only criterion to be followed when calculating compensation), affordability issues (meaning the inability of Modimolle Local Municipality to compensate farmers) are likely to hamper expropriation, as discussed in the next section.

In the Waterberg, irrigation farmers view water use charges as taxes, which they are unhappy to pay because, as water is their own private property, they do not receive it from the state. This reflects a conceptualization of taxation (and consequently of public goods) very similar to that suggested by public choice theory, whereby wealth-maximizing individuals are ready to pay taxes only in exchange for a direct benefit (Blackmar 2006). As it was noted in Chapter 3, water pricing was introduced in the new legislation for the purpose of water demand management, thus following a new trend to tackle water scarcity via market mechanisms, which became prevalent in the 1990s. Water use charges are underpinned by the so-called 'user pays' principle, meaning that water users are expected to pay according to their consumption. However, the lack of water meters on farms means that DWS bills farmers for their entire water allocation (as expressed by their ELUs), whether or not they have actually employed it.[11]

On the one hand, a few Waterberg's farmers (that is to say, among those who had registered as water users) were not paying anything to the department at the time of my fieldwork, as they claimed that invoices were wrongly calculated and that water fees would contribute to reduce their margins of profitability. 'Dissident' farmers were strongly supported by TAU, which resorted to food security as a counter-argument against the payment of water use charges. According to the union, water tariffs represent an unaffordable expense for farmers and will force many of them to stop irrigation and eventually production.[12] As a result, South Africa will experience food shortages, food will need to be imported from

abroad, and this will cause food prices to increase (which will adversely affect the poor). TAU's crisis talk is evident in the following passage:[13]

> The Agricultural Sector had been enduring a lot of criticism for using in excess of 62% of the available water in SA. That water is used for food production, yet nobody expressed gratitude for adequately stocked food shelves in our supermarkets! […] The increase in input costs will force a lot of producers to cease irrigation farming practices, that will lead to food shortages and a resultant steep rise in food prices. […] Eventually, violence will erupt when the full supermarket shelves turn empty and thousands of hungry people take to the streets to protest and plunder.

TAU's food security argument must be read within a narrative of self-understanding that depicts white commercial farmers as the 'good' workers putting food on the table of the South African people and the state as an institution aimed at taking resources (land and water) away from them. For instance, the Waterberg is scattered with TAU billboards meant to convey a positive image of farmers and reading: 'Eaten today? Thank the Farmer and the Farm Workers! No Farmer, No Food, No Future!' (note that 'farm workers' is written in a smaller font on the billboard). However, although some irrigation farmers on the plateau grow edible crops on the side, 80 per cent of them consider tobacco production as their core business (crop/cattle farmer, personal interview, 25 July 2014). Moreover, as shown by Greenberg (2015), social inequality still pervades the country's agro-food system, so that one must question whose table the food produced by large-scale white commercial farming can actually reach and how much of the food locally consumed is also locally produced by white commercial farmers. Similarly to the case of water, access to food is a complex issue, which is influenced by a number of factors. Price rises clearly play an important role here, yet rather than being reduced to one of the consequences of future food imports (which appears debatable in light of the fact that food import can actually be a function of cheapness, Edelman et al. 2014), they must be understood as the result of a shift in power, which has taken place within agricultural value chains, whereby large retail corporations have become price setters and appropriate the largest share of value.

On the other hand, the majority of Waterberg's farmers do pay water use charges to DWS, although they call into question 'what are we paying for?'. In their perspective, paying for water is not fair because they do not

belong to an irrigation scheme (whose water they recognize as state's property) and they do not receive any other water service from the state, such as eradicating invasive alien plants from the riverbeds or testing the quality of the water. The reason why they pay then, is ultimately linked to the fear that if they do not, they will provide the government with a justification to proceed with the expropriation of their water rights. As one of the farmers put it, he pays because he sees it as a form of 'insurance policy' (crop/cattle farmer, personal interview, 19 June 2014).

Bearing in mind that water use charges are paid to DWS and no amount is directly transferred to the local municipality to improve water service delivery in town, it is interesting to say something about the way in which landowners react to this very idea. On a first level, they quite simply do not regard it as a concrete possibility because of the mismanagement of public funds and incompetence on the part of the state. For instance, a farmer commented that municipal property rates (i.e. a major revenue stream for local government and one of the few, to which landowners contribute) 'are spent to buy a new car for the mayor' (Ibid.). On a second level, by opposing the idea that they may subsidize water consumption in Vaalwater, farmers emphasize the material and symbolic significance of the border between the private space of the farm and the public space of the town. This became apparent in the continuous reference made by landowners to the fact that it is not 'their' responsibility to supply water to Vaalwater and the municipality has to find its own water resources somewhere else before allowing people to settle there. Crucially, in doing this, farmers do not feel the need to make recourse to ideas of scarcity. Their argument is not founded on the perception that there are too few resources to share among competing uses, but rather on the belief that their 'own' water should not be shared at all. This points to what appears fundamentally new in the private ownership of water resources in the post-apartheid era, namely the understanding of private in relation to public. During apartheid, private property rights were exercised vis-à-vis the common property rights of a community of equals, that is to say white farmers. Whereas today, public is perceived as 'the black state', meaning an alien and antagonizing institution (composed of people that many landowners do not hesitate to portray as 'inferior', if only by making reference to their lack of capacity) against which private property must be protected.[14]

5.3 Public water as individual responsibilization

During a 2015 follow-up visit to one of the farmers chairing the Vaalwater WUA, the respondent concluded that 'the water is there for everyone to take it' (crop/cattle farmer, personal interview, 17 November 2015). His comment was meant to question why the local municipality had not yet had recourse to the Mokolo River to address water shortages in Vaalwater. Clearly, this overlooks the power relations between the municipality and private landowners, as well as those between the local government and DWS (that is to say, it is not up to the municipality to build a dam in the Mokolo to supply water in town, especially when the department has decided to allocate such water to Medupi). And yet, the farmer's remark raises a crucial issue, namely why Modimolle has not expropriated landowners' water rights in order to make more resources available for Vaalwater. There appears to be two different, but complementary answers. On the one hand, the whole process of expropriation (regulated by the Expropriation Act of 1975) is perceived by the municipality as much more onerous than negotiating individual agreements with farmers for the purchase of water. Since mutual agreement among the parties is crucial, in case landowners do not accept the compensation offered by the state, they are allowed to take the matter to court, where it can take up to three years to reach a judgment (local attorney, personal interview, 9 June 2014). Moreover, it is very unlikely that Modimolle can afford to pay compensations given the way in which these are usually calculated. For instance, a trend has been established (and left unchallenged by the national government), whereby private property rights expropriated today are repaid at current market value, whereas the restitution of properties dispossessed during the colonial and apartheid times does not take into account current market values, hence is much lower (Florence v. Government of the Republic of South Africa 2014).[15]

On the other hand, the very idea of expropriation is met with discomfort by the municipality, something that became very visible every time the subject was touched with municipal officials or councillors. From their perspective, to expropriate takes on the meaning of essentially betraying the spirit of reconciliation, on which the whole transition to democracy rests (Sitas 2011). This was evident, for instance, when a local councillor made a direct association with the teachings of Nelson Mandela, namely

'to talk and reach an agreement', which she felt compelled to follow (ward councillor MLM, personal interview, 5 February 2014). Another comment highlighted the risk of disrupting a supposed racial equilibrium (based on property and labour) entailed by expropriation, as the respondent said that that was 'not the way' because 'whites used to be our bosses and now in the new South Africa is the other way round' (DWS district official, personal interview, 21 July 2014). In these accounts, the respect for existing property relations becomes close to reverence and expropriation only means to take a rightful possession away from someone, forgetting that they will be compensated. What is even more striking, however, is that the very justification for expropriation (namely, to promote the public interest) is completely left aside. This makes it crucial to ask what the local government's understanding of public interest is. The way in which public services are framed help provide an answer.

The local municipality sees public services essentially as market exchanges of specific goods and services defined as 'basic' (such as water, sanitation, electricity, and waste removal) between itself and citizens (that is, 'customers to the public institutions', MLM 2013b). Although many people in the township of Leseding do not pay anything for drinking water, either because this is supplied through communal infrastructure or because they are registered as indigents, the commodity status of water services remains unaltered. Indeed, free basic water and communal standpipes have the effect of limiting residents' water consumption as a result of their inability to pay.[16] According to this logic, the Divisional Manager Water Services does not interpret the differences in patterns of access to and use of water between citizens living in town and citizens living on farms as inequality (Divisional Manager Water Services MLM, personal interview, 30 January 2014). Landowners are not served by the municipality, therefore it does not make sense, according to the manager, to compare water supply on private farms with that in Vaalwater (a perspective that is actually shared by farmers). However, not only is the idea of water inequality between farms and town firmly rejected in this view, water inequality within the town itself is equally dismissed. This is clearly illustrated by the fact that it is not perceived as problematic that houses at one end of a street (in the mostly white suburbs) are equipped with all sorts of water-based appliances, whereas houses at the other end of the same street (in the black township) lack water taps. The Divisional Manager explained

the way in which he saw this situation with the following comparison: 'Is like, if you can afford to buy a Mercedes-Benz and I cannot, what can I do about that? Unfortunately we cannot all be equal' (Ibid.). This comment is revealing for two reasons. First, it shows how the symbolic and material meaning that access to clean water had during the transition to democracy has largely been lost.[17] In its place, it is now considered just that the poor receive only minimum (namely, the new meaning of basic) water services that supposedly keep them alive, but obviously do not allow them to thrive. Second, the manager's comment indicates a shift of focus from the state's responsibility for delivering certain services, to the citizens' individual responsibility for securing access to them (via payment of tariffs). As a result, instead of being taken into consideration as a socio-economic concern, affordability becomes the very foundation of public service provision. On the national level, this finds echo in the South African Water Research Commission's (WRC) advocating a 'water responsibility state' regime of water provision as a solution to water scarcity.[18] In contrast to the current 'water welfare state' regime, whereby water supply is exclusively a state's function, citizens and corporations are now encouraged to become responsible for making water available to satisfy their own needs.

The relationship between individual responsibility (or self-governing) and neoliberalism is well established in the literature (Ilcan 2009, Lemke 2001, Ong 2006). Ong (2006: 14), for instance, refers to neoliberal governmentality as a 'technology of governing' that 'requires populations to be free, self-managing, and self-enterprising individuals in different spheres of everyday life'. Similarly, Ilcan (2009: 212) employs the term 'privatizing responsibility' to indicate

> a way of shaping spheres of social and political relations, [which] emphasizes individual competition and self-reliance and consumer choice rather than dependency on public resources. As a mobile assemblage, it targets various groups – including, for example, single mothers, the poor, the unemployed, aging "baby boomers," pensioners, medical patients, consumers, volunteers – who are to take on more of the responsibility for their own well-being and the well-being of others.

One particular way to make the poor and unemployed responsible for the provision of public services has been the supply of labour, hence the promotion of workfare instead of welfare (Ong 2006, Tyner 2016).[19] The

South African water sector offers a clear example of this trend in the Working for Water (WfW) programme, namely a public work scheme aimed at hiring unemployed residents in rural areas in order to clear invasive alien species that was launched by DWAF in 1995. Hough and Prozesky (2012) show that contrary to the programme's declared objective of creating micro-entrepreneurs (to work as independent contractors on white farms), beneficiaries are reluctant to leave WfW (notwithstanding short-term contracts and wages below the minimum level), because they perceive it as the closest to permanent employment as they can aspire to in a context where job opportunities are lacking and where farm work is rejected due to the paternalism and racism that still characterize white farms.[20]

In the Waterberg, the idea that the poor must 'pay their way' (through the provision of labour) in order to get access to water appears to be taken one step further. In Chapter 3, it was noted how the Water Allocation Reform strategy of 2006 introduced equity in access to the benefits deriving from productive uses of the resource (instead of equity in access to water per se) as the new objective of DWS' redistributive policies. Translated into the local Waterberg's context, this logic implies that water shortages in Vaalwater do not represent a problem as long as water resources are managed productively by landowners, so that there can be jobs for town residents. In other words, access to water for the black poor is mediated through their labour on white farms – another manifestation of the land-water nexus. As farm workers, black people have access to water in abundance (although they cannot benefit directly from it, as that is reserved for more 'valuable' uses). Whereas as citizens, meaning when they leave the farm to go back to their homes in the township, they do not have enough water to meet their daily basic needs. And yet, this is considered a fair arrangement by the state, because it helps advance accumulation, while at the same time 'adversely' incorporating (and disciplining) the poor within the capitalist economy (du Toit 2004).

Recently, individual responsibilization has been theorized by Tyner (2016) in relation to violence. In opposition to universal abstractions, Tyner shows that what is commonly defined and viewed as violence depends upon socio-spatial relations, and in particular the prevailing modes of production. For instance, under neoliberal capitalism, a particular valuation of life based on the full commodification of labour makes it possible

and legitimate that some people are disallowed life or let die, without considering it a manifestation of violence. According to Tyner, lives are valued on the basis of people's contribution (or lack thereof) to the reproduction of the capitalist system. Two criteria are employed to decide if a certain population group is to be made live (following Foucault's notion of biopolitics) or let die (following Agamben's (2005a) concept of 'thanatopolitics'), namely productivity (the ability of producing surplus value) and responsibility (the commitment to participate in society as producers and consumers). Those who are deemed unproductive and irresponsible (such as the elderly, the disabled, the poor and indigent), because they cannot enter the formal waged labor market, are left to conduct a bare life, and yet their vulnerability to death is not perceived as violence, but rather depicted as the result of their own moral or other deficiencies.

The foregoing helps further understand why in the Waterberg it is mainly black former farm workers and their families who are left to survive on residual and minimal water resources (for a fuller account of this as a form of biopolitical liquid violence, see Marcatelli and Büscher under submission). At this point, it is important to add that the work by Tyner is situated within a tradition of engaging with the notion of violence that originates from Galtung's (1969) 'structural violence'. This was introduced to expand the definition of violence beyond a harmful act committed by one or more individuals to include 'unequal power and consequently […] unequal life chances' (Ibid.: 171). Nixon (2011) adapted the notion of structural violence to a context characterized by neoliberal policies and environmental crises. He therefore coined the term 'slow violence' to indicate a violence that is gradual, invisible, and fundamentally dispersed across time and space. Although Loftus (2006) employs the term 'everyday violence' to describe the restriction of water supply imposed by new water technologies, Robins (2014) appears the first author to apply the notions of structural and slow violence to post-apartheid South Africa. He does so with regard to the lack of sanitation in informal settlements in Cape Town. According to Robins, while traditional violence (such as political violence and gross human rights violations) is seen as exceptional, the violence embedded in racialized poverty and inequality (as manifested in open defecation and the bucket system) is often perceived as ordinary. This resonates well with what shown in Chapter 4, namely that water shortages in

Leseding have become 'normal' and residents have learned to make do with inadequate amounts of the resource.

5.4 Conclusion

This chapter has shown that water access in the Waterberg is necessarily unequal because both private ownership of water resources and public provision of water services are complementary aspects of an all-encompassing process of water commodification. This is explained by two major dynamics. On the one hand, white landowners appreciate water resources as a commodity that needs to be put in circulation for the purpose of capital accumulation. On this basis, they resist state redistribution of the resource and rather see water needs in Vaalwater as an opportunity to extract rent from their own water. Furthermore, farmers' understanding of water as a private instead of a common property is reinforced by their perception of the public space as something encroaching the borders of the farm and threatening its very existence, rather than something including them. On the other hand, public water service provision is seen by the local municipality essentially as a market exchange, where citizens receive according to their ability to pay. Those who prove unable to participate in this system (because they cannot afford to do so) are responsibilized through a minimum supply of water services. Moreover, they are encouraged to access water indirectly, that is to say in the form of labour on farms that employ large quantities of the resource for productive uses.

Once established that accumulation is the logic underpinning the management of both private water resources and public water services (to the point that public interest equals the common pursuit of capital accumulation), it becomes comprehensible why in the Waterberg the strengthening of private control over water access and use is actively pursued by landowners, while left unchallenged by the state. The unfolding of private nature conservation on the plateau, which is explored in the next chapter, offers a new and interesting example of this.

Notes

[1] For a discussion of the interactions between the three water legal systems currently in effect in South Africa (i.e. apartheid-era laws, former Bantustan laws,

and post-apartheid laws) from a legal pluralism perspective, see van Koppen and Jha (2005).

[2] Indeed, apart from the debate on the human right to water, the distinction between private and public water, introduced by the Irrigation and Water Conservation Act of 1912, shows that to extend private ownership to all of the country's water resources has historically been perceived as problematic.

[3] To borrow from Movik's (2012) language, ELUs represent 'fortified rights' especially because the usufructuary rights previously related to the notion of 'public' water are subsumed into the exclusive property rights previously related to the notion of 'private' water. Of course, this is so until water licences are issued to water users.

[4] The literature on publicness can be roughly divided into two streams, namely one concerned with the notion of public *sphere* as the institutions and practices generating public opinion (Fraser and Nash 2014, Habermas 1989) and the other interested in that of public *space* as places and landscapes (Smith and Low 2006). As Smith and Low (2006) note, the first stream pertains the history of public vis-à-vis the state, whereas the second one the geography of public vis-à-vis private. Here, I am concerned with the latter coupled with ideas of public (as in common) good (Prodi 2009).

[5] As clarified by d'Entrèves (1991: 82), 'Arendt's account of the emergence of the modern age is a combination of historical and conceptual analysis in which each concept is traced back to its origins in Greek and Roman experience, followed by a close account of its modifications during Christianity and the Middle Ages and its eventual displacement with the emergence of modernity. The historical background of these conceptual changes is normally made up of entire epochs, so that what is often lost is a sense of the complexity, differentiation, and internal tensions of each epoch, as well as the underlying continuity from one historical period to another'.

[6] Bakker (2003: 191) notes that the basic needs approach looks very similar to the way in which private companies reacted to the emergence of 'water poverty' following the rapid increase in water tariffs that took place with privatization, namely by 'setting up water charities, to which those requiring exemptions or special treatment were required to prove their eligibility'.

[7] Memo from the Chairman of TAU SA North, Mr Stephen Hoffman, to the Department of Water Affairs dated 9 September 2013 (TAU employee, personal communication, 12 May 2014).

[8] Significantly, Justice Froneman also noted that the full scope of the new legal concept of state custodianship within the South African legal framework is still to be explored, since assuming that the state as custodian can never expropriate opens

the door to the possibility of abolishing any form of private ownership without compensation.

[9] It is important to note that not all landowners on the plateau (especially among irrigation farmers) are wealthy and the money received for their water entitlements may offer them the opportunity to repay their debts and look for new livelihoods.

[10] Water quality is one of the major debates concerning the resource at the national level. Besides industry and mining activities, municipalities' inability to treat waste water and the sprouting up of informal settlements are perceived as the main causes for deteriorating water quality. Thus, the lack of informal black settlements on the plateau (that is, besides Leseding) is appreciated for keeping the water clean, as in the public discourse, the poor are depicted as polluters.

[11] Not all the irrigation farmers that I interviewed were ready to disclose information on how much water they had been allocated by the department and how much they paid for it. The average value of water use charges that I have calculated on the basis of 11 responses was 20,000 ZAR per year (the lowest charge recorded being 1,461 ZAR per year and the highest 45,000 ZAR per year). Although in principle the unit price of water should be the same for all farmers, the data collected show that this varies between 0.004 ZAR/m^3 and 0.34 ZAR/m^3.

[12] Yet, precisely because of food security concerns, agricultural water is still very much subsidized (through price capping) by the government, as shown by the volumetric price indicated in endnote 11.

[13] See endnote 7 for source.

[14] Movik and de Jong (2011) make a similar argument when they note that under the current regime of regulation of water use rights, characterized by state-user relations as opposed to user-user relations, irrigation farmers who over-extract from a water source are not perceived as 'stealing' water from their neighbours, but rather from the state and for this reason, their behaviour is morally accepted within the farming community.

[15] I am grateful to Prof. Jackie Dugard for pointing this out during a workshop on 'Aspiration, Exclusion and Belonging in South Africa and Kenya', hosted by the Wits Institute for Social and Economic Research (WISER), University of Witwatersrand, Johannesburg, on 7 October 2015.

[16] Drinking water ceases to be a commodity when it is freely exchanged among residents. However, Chapter 4 has shown that this practice only occurs within extended families and is not without tensions.

[17] The ANC Reconstruction and Development Programme reads in fact: 'The first priority is to begin to meet the basic needs of people – jobs, land, housing,

water, electricity, telecommunications, transport, a clean and healthy environment, nutrition, health care and social welfare. In this way we can begin to reconstruct family and community life in our society' (ANC 1994, s. 1.4.2).

[18] This view was expressed by the WRC Chief Executive Officer during a water dialogue organized by DWS, Mail&Guardian Africa, and Coca-Cola Africa and held in Johannesburg on 24 November 2015.

[19] In this regard, it is interesting to mention the opinion of a Waterberg's landowner, who distinguished himself for his liberal views and active participation in 'community' initiatives. He confessed to be tired of being part of a minority, who paid taxes to support an unqualified redistribution in the form of social grants. According to him, it may be true that some entitlements need not to be paid for, but 'what is really important is to appreciate that they come with responsibilities, like for instance to improve your own life by taking actions towards it'. Then he added that 'If people want to participate in our cultural system, if they value material possessions (as they seem to do), then they better subscribe to that culture and work for those things' (game farm owner, personal interview, 25 April 2014).

[20] The fact that WfW continues to imply black labour performed on white land is well captured and problematized in a poem written by E.K. Daufin and published in a special issue of the *International Feminist Journal of Politics* on 'Politics of Water: A Confluence of Women's Voices'. A telling strophe reads: 'When we slash the invasive, alien, | Water-greedy trees, | I remember how Afrikaners, | Had us Africans | tortured, raped, raided, | On our ancestral knees, | Still bleeding from their cruelty and stupidity, | But at least I've got | A job, | Health care, | and I smile as I cut down, | The European, invasive, alien trees, | With each chop, | My people rise a little higher, | Off their knees' ('Working for Water' 2007).

6 Producing nature, naturalizing inequality

> The Waterberg Biosphere Reserve is a magical part of South Africa which is easily accessible from Africa's industrial powerhouse, Gauteng. It is very old, and yet a very new place too. With its unique history of sparse human settlement, it has been perfectly placed to reinvent itself, following the dawn of democracy in South Africa, as a stunningly beautiful and highly significant conservation area. (WBR 2009: 5)

These few opening lines of a glossy brochure aimed at guiding tourists through the meanders of the plateau dirt roads perfectly sketches the contours of the myth on which the production of the area as a wildlife destination rests.[1] This myth is founded especially on the idea that the Waterberg has historically been scarcely populated and this 'unique' population dynamic contributed to the preservation of the place as an 'unspoilt wilderness', which in turn adequately demonstrates why it was 'perfectly placed' to respond to the appeal of the so-called 'green economy',[2] mostly via private conservation activities. However, this represents a very partial reading of the history of the place. As Chapter 2 has demonstrated, while it is true that white settlers occupied this part of northern Transvaal only in the 1850s and their number remained modest throughout the nineteenth and twentieth centuries, black inhabitants were more numerous than whites from the start of the European colonization of the plateau until they were forcibly removed from the area in the 1970s. Since the very purpose of this brochure and other popular historical accounts that have recently been published (Hunter 2010, Rodger 2010, Taylor et al. 2003, Walker and Bothma 2005) is to attract paying tourists, they forge an image of the Waterberg as a 'space of exception' (Büscher and Ramutsindela 2016),[3] that is to say a place distant from the politics of colonialism and apartheid and committed to nature conservation.[4]

The aim of this chapter is to show how private conservation activities are deeply embedded in the agrarian political economy of the plateau and how they influence the unequal distribution of natural resources (that is,

land and water) on the local level. Whereas water services in Vaalwater *can* be interrupted to the point where the minimum standards for basic water provision are not met, on private nature reserves and game farms water *must* always be abundant in order to guarantee that the demands of landowners, tourists, and wildlife are satisfied. The quotation cited above argues for a compelling linkage between democracy, transformation ('reinvention'), and nature conservation. And yet, from a water perspective, the transformation taking place in the Waterberg appears to be fundamentally conservative, insomuch as local power relations remain unchallenged and the private control over natural resources is tightened.

Contrary to the mainstream view (shared by white landowners and DWS) according to which game farms are helping save water and their existence cannot be put in relation with water scarcity in town, this chapter argues that this type of activity consumes significant amounts of water and contributes both materially and discursively to the reproduction of water inequality on the plateau. This advances the overall argument of my dissertation by pointing out that water inequality in the Waterberg is linked to contemporary processes of neoliberal conservation (Arsel and Büscher 2012). Furthermore, the chapter indicates that the social production of the plateau as an empty wilderness naturalizes inequality by questioning the very presence of the black poor in it, while at the same time offering white landowners the opportunity to express their 'affective belonging' to South Africa and the African continent (Büscher 2016: 982).

The chapter is structured into three major sections. The first section situates nature conservation in the Waterberg within broader debates on the changing agrarian political economy of South Africa and the social consequences of private conservation initiatives. The second section describes and analyses the conversion from traditional to game farming on the plateau by focusing on when it started, which actors have been involved, which reasons have driven them, and which forms the process has taken. Finally, the third section looks at three specific ways in which game farms and private nature reserves contribute to reproduce and naturalize water inequality on the ground.

6.1 Nature conservation and agrarian political economy

One of the most important lines of enquiry to recently emerge in the field of critical agrarian studies refers to the new phenomenon of land and resource accumulation known as 'grabbing' (Fairbairn et al. 2014). In the course of the years, authors have moved beyond a focus on agriculture alone as the main driver of land grabs to conceptualise the notions of 'green grabbing' (Fairhead et al. 2012) and 'water grabbing' (Mehta et al. 2012). Green grabbing has been defined as a dynamic of accumulation (by powerful actors) and dispossession (of poor and marginalised communities) for declared environmental purposes. What is qualitatively new about this process is that it takes place in a context where environmental concerns have become mainstream (the very notion of green economy being a case in point) and nature is commodified to provide new avenues both for capital accumulation and to 'repair' environmental loss (in line with the notion of neoliberal conservation, Büscher 2009) (Fairhead et al. 2012). Water grabbing, on the other hand, has been identified as a separate issue, to emphasise the fact that without secure access to water agricultural land has no value, but also to point out that water itself can be the object of grabbing (especially in relation to hydropower and mining projects) (Mehta et al. 2012). Water is fluid in time and space, however, and this makes it more difficult to reallocate control over it as well as to evaluate the social consequences of the grabbing.

The scholarship on land and resource grabbing cautions that, although these are to be interpreted as global phenomena related to the contemporary phase of neoliberal capitalism, local contexts always matter in that it is these contexts that will ultimately shape the specific forms in which the (re)appropriation takes place. Moreover, to fully grasp the sense of injustice that is conveyed by the expression 'grabbing', it is important to keep in mind the particular histories of dispossession that characterise a specific place.

For this reason, one needs to consider the land question in South Africa. The way in which this question was framed by the ANC during the transition from apartheid to democracy had basically to do with the history of dispossession of black people and the fall of the African peasantry (in turn related to the need for cheap labour on the mines, Bundy 1979) (Walker 2005). Therefore, the solution proposed by the new government

was that of returning the land to black people by means of a land reform, which, according to du Toit (2013), privileged reparative justice over distributive justice and social equity. The reform, started with the issuing of the White Paper on South African Land Policy in 1997, has three major components. First, the land redistribution programme aims at transferring land ownership from white to black farmers through the market-based principle of 'willing buyer, willing seller'. Since 2001, the focus of redistribution has shifted from supporting smallholders to creating a class of black commercial farmers (Hall and Ntsebeza 2007). Moreover, since 2006, the state is buying farms directly and then leasing them to beneficiaries, rather than providing the latter with grants that were usually too low compared to the market price of properties to allow black farmers to purchase them (Hall 2015). Second, the land restitution programme aims at restoring land to people that were dispossessed of it following the promulgation of the Natives Land Act of 1913, either through the restoration of the actual land or through other forms of redress, such as cash compensation. Third, the land tenure reform programme aims at securing the rights of people occupying and using the land without individually owning it, such as farm workers and dwellers in the former 'white' countryside (see Chapter 2), but also residents of communal areas in the former Bantustans.

It is generally agreed that land reform has had meagre and even controversial results hitherto. For instance, only 8 per cent of the land has been transferred from white to black ownership via redistribution and restitution (against the target of 30 per cent by 2025) and more than 20,000 restitution claims remain to be settled (Walker and Cousins 2015: 4). Furthermore, almost 1.7 million people were evicted from commercial farms between 1984 and 2004 (Wegerif et al. 2005: 41),[5] showing that 'farmworkers and -dwellers remain highly vulnerable to illegal evictions to nowhere' (Walker and Cousins 2005: 5). And yet, Walker (2005) argues that besides the 'impasse in delivery' there is an equally if not more important 'impasse in expectations'. According to her, in fact, a number of demographic, ecological, and social constraints limit the transformative potential of land reform. For this reason, Walker (Ibid.: 824) suggests that the land question in post-apartheid South Africa should also be about 'jobs, education, urban housing and a dramatic escalation in the provision of public health

services'. This suggestion has been followed by a number of critical scholars of land and agrarian studies. For instance, Hall and Ntsebeza (2007: 1) rephrase the land question as follows: 'how can a large-scale redistribution of land provide redress for centuries of dispossession while contributing to the transformation of the economy and the reduction of poverty, both rural and urban?'. Whereas O'Laughlin and colleagues move beyond land to formulate the agrarian question of contemporary South Africa as: 'To what extent can agrarian reform in South Africa address issues of employment, simple reproduction, poverty and inequality in contemporary conditions of structural "surplus labour"? (O'Laughlin et al. 2013: 4).

Overall, four issues have emerged as crucial in this regard. First, the land question concerns both rural and urban areas. As 63 per cent of the country's population is now urban (Walker and Cousins 2015: 4), land for settlement and housing is needed more than land for agricultural development. Second, land reform should foster change both in the former 'white' countryside and in the former Bantustans, although the latter tend to become 'zones of exclusion' where traditional authorities challenge democratization (Ibid.: 8). Third, there is a (albeit partial) South African 'exceptionalism' that needs to be taken into account, namely: the large numbers of rural working poor employed on commercial farms; the even larger number of people in communal areas who do not engage in farming; and the mixed livelihoods of the rural poor, based on a combination of wages, remittances, and social grants (O'Laughlin et al. 2013). Finally, although South Africa is not an agrarian society anymore and agriculture contributes only 3 per cent to the gross domestic product (Vink and Van Rooyen 2009: 30), land reform needs to be aligned with agricultural reform (and water reform, Woodhouse 2012b), if beneficiaries are intended to improve their land-based livelihoods.

Against this background, the conversion of commercial farms from traditional activities like crop and livestock production to wildlife production (eco-tourism, hunting, venison production, game breeding and trading) represents an important land-use change in the agrarian landscape that has prompted the emergence of a critical scholarship in recent years (Brooks et al. 2011, Snijders 2012, see also the special issue of the *Journal of Contemporary African Studies* on 'Farm dwellers, the forgotten people?' edited by Spierenburg and Brooks 2014). Some authors do not hesitate to

interpret farm conversion as a local manifestation of green grabbing on the basis of the transformation of wildlife into a commodity, whose value has been escalating, and of the fact that only the wealthy can afford to buy game and the large tracts of wilderness it needs (Snijders 2012). This new practice of land enclosure does indeed seem at odds with the purpose of justice embedded in land reform. Moreover, research has shown how nature conservation can actually work as a strong moral justification to keep both the government and claimants at bay, while at the same time helping white farmers negotiate their new role in democratic South Africa (Spierenburg and Brandt 2014). Other authors, however, have nuanced the discursive and material contours of the dispossession suffered by farm workers and dwellers following the conversion to game farming (Spierenburg and Brooks 2014). Their particular histories of past displacement and mobility seem in fact to account for whether the conversion is perceived as yet another round of exclusion or as a decisive rupture.

The lives and experiences of the rural working poor thus come to the fore when the analysis of nature conservation is put into agrarian contexts (Hall et al. 2013). Existing research on private game farming has indeed focused on the social consequences that conversion entails for these subjects, especially their labour and tenure relations. For instance, scholars have found that, contrary to the narrative about private conservation's positive contribution to poverty alleviation (largely supported by Langholz and Kerley 2006),[6] game farms offer fewer job opportunities than traditional ones, the positions offered are usually low-skilled, and salaries are aligned to those employed in agriculture, which are the lowest (Snijders 2012, Spierenburg and Brooks 2014). A 2015 Engendered Wildlife Trust (EWT) report partly confirms these findings. Based on a survey of 251 'wildlife ranches'[7] from all the nine provinces of the country, the EWT report calculates that the mean number of hectares per employee on a wildlife ranch (i.e. 267) is more than double that on a commercial farm (i.e. 128), meaning that employment per unit area on wildlife ranches is less than half that required on commercial farms (Taylor et al. 2015: 60, 62).[8] With regard to wages, the median salary per person per month on a wildlife ranch is calculated at 3,441 ZAR (although, on ranches with ecotourism the median rises to 3,857 ZAR, while on ranches without ecotourism it drops to 2,764 ZAR) (Ibid.: 64). This is only slightly higher than the current minimum wage for farm workers (i.e. 2,778 ZAR per person

per month, RSA 2016), but being a median value it is likely that a substantial number of workers actually receive less.

Furthermore, the presence of fences and dangerous game affects people's mobility and their ability to keep livestock and access grazing. The loss of jobs coupled with increasingly difficult living conditions has caused many workers and dwellers to leave the farm voluntarily or forcibly, thus fulfilling the idea that wild nature must be emptied of human presence (or at least of some humans). As noted in Chapter 2, conversion to game farming overlaps with other 'trajectories of change on farms' (Hall et al. 2013: 66), such as agriculture restructuring and land tenure reform. Displaced farm workers make for a new group of surplus people (see Chapter 1) with no other choice than relocating to informal settlements, often in rural towns. It is at this juncture that a water perspective can provide new insights into the debates discussed above. Before addressing water issues in more depth, however, the next section provides an overview of the process of conversion that has been taking place in the Waterberg.

6.2 Producing nature in the Waterberg: From traditional to game farming

Similarly to the rest of South Africa (Snijders 2012), the first private nature reserves were proclaimed by Waterberg landowners in the 1960s. However, conservation activities became common only in the 1980s, following the initiative of some wealthy white businessmen and farmers, usually self-proclaimed 'conservationists' who intended to bring the place back to its 'original wilderness'. As one of the landowners that I interviewed put it, she started the reserve to rescue a land 'destroyed' by overgrazing and to bring the bush back to its 'natural' status (private nature reserve owner, personal interview, 28 June 2014). As it was noted in Chapter 2, at that time the landscape consisted mainly of livestock and crop private farmland. Within a context of deregulation of agriculture (that is, the removal of marketing boards and other state subsidies, which started in the mid-1970s and accelerated after 1994, Vink and Van Rooyen 2009) and following the institution of private ownership of game (via the Game Theft Act of 1991), the conversion of traditional farmland into private nature reserves and game farms started to make economic sense (Snijders 2012). Only a few landowners were able to fund the conversion, though. For

instance, the development of Welgevonden Game Reserve (namely, the second largest reserve on the plateau, covering 34,000 ha), albeit initiated in 1987 by the farm owner, Mr Pienkes Du Plessis, was soon taken over by Rand Merchant Bank. Most of the time it was wealthy individuals from other parts of the country, or even from abroad, who bought the land from local farmers in financial difficulties and then invested their own capital to incorporate more land from adjoining farms, bring down cattle fences and other farming infrastructure, introduce game (long disappeared as a result of hunting for trade in the Transvaal of the nineteenth century and agriculture thereafter), and build suitable fences.

Although some of the new owners employed their game-stocked properties as family hunting farms, a preservationist approach seemed to build momentum in the 1980s. This was largely promoted by the figure of Mr Clive Walker, game ranger, artist and founder of EWT, who moved to the plateau around that time. In 1981, Mr Walker found in the businessman Dale Parker an investor for the purchase of a farm, which was later developed into the 36,000 ha private nature reserve Lapalala Wilderness. Similarly, Mr Walker was able to reach other 'like-minded' people with the means to buy land adjoining Lapalala. Then, in 1990, he prompted the foundation of the Waterberg Nature Conservancy (WNC), whose first members were Lapalala and the two neighbouring game farms Kwalata Wilderness and Touchstone Game Ranch. This marked the beginning of a local conservation movement on the plateau. The original scope of WNC was to take all the fences down and transform the Waterberg into an extensive wilderness, with no human use allowed. This triggered opposition from the farming community and the establishment of a frontline between farmers (mostly Afrikaners) and conservationists (mostly English-speaking) which, to a large extent, continues to date. Conservationists won an important battle at the time, as Lapalala disputed and eventually halted the construction of a government dam on its land (a so-called 'election dam', meant to secure farmers' votes) to protect the 'pristine' Lephalala River system (game farm owner, personal interview, 9 May 2014).

Notwithstanding the Conservancy's original purposes, more fences have actually gone up in the course of the years and conservation in the plateau is now largely managed according to commercial principles. Under the ownership of Mr Duncan Parker (son of Dale), Lapalala has even

started a partnership with businessmen Gianni Ravazzotti and Peter Anderson and the three of them have developed a 'bold' plan to assure more funding for the reserve activities.[9] The plan includes the following: expanding the already existing special species breeding project; enhancing tourism; and offering to individuals and companies the opportunity to invest in the reserve and become 'custodians' of the land (Lapalala Wilderness. n.d.).

Local authorities are supportive of this shift from traditional agriculture to wildlife conservation (what Brockington and Scholfield (2010) refer to as 'the conservationist mode of production') and intend to sustain it by developing a 'Waterberg brand' that would make the place distinctive and competitive on the global tourism market (WDM n.d.). The proclamation of the Waterberg Biosphere Reserve (WBR) by the United Nations Educational, Scientific and Cultural Organization in 2001 also contributed to increasing the international visibility of the Waterberg, although the work done on the ground by the NGO administering it was often met with scepticism by local residents.[10]

To protect nature while at the same time making a profit out of it has meant focusing on those wildlife-based commercial activities that can guarantee the highest returns to landowners or 'conservation entrepreneurs' (Brockington and Scholfield 2010: 552). In a relatively small area such as the plateau, with a billboard advertising a game lodge at every turn of the (dirt) road, this implies catering for the needs of upper market eco-tourists and overseas hunters, who are willing to spend up to around 5,000 ZAR per day or even 10,000 ZAR in the most exclusive of lodges.

Besides eco-tourism and trophy hunting, a sub-sector that has gained prominence in the past 10 years is that of game breeding. Snijders (2012: 512-3) has documented the 'escalation of commodity value' of wildlife, whose turnover increased from 9 million ZAR in 1991 to 303 million ZAR in 2010. In 2012, the Deputy President of South Africa, Mr Cyril Ramaphosa, who owns a game farm in the Waterberg district, hit the headlines for bidding 19.5 million ZAR for a buffalo cow (Christie 2012). While in 2014, the financial turnover of intensive breeding and live sales on private land alone rose to 1.875 billion ZAR (Taylor et al. 2015: 48). Although some insiders do not hesitate to qualify it as a market bubble, ready to burst at any time, investors keep trading in live game, attracted by a return of 300 or even 400 per cent (game farm manager, personal interview, 11

June 2014). Small ranchers, who start afresh in the wildlife industry, keep the demand for common game high (sometimes supplied by livestock farmers diversifying their activities), whereas big players provide the individual or corporate capital necessary to specialise in genetics and to produce game of higher value (so-called 'colour variant' and 'high value species').[11] Apart from meat production, which is partly for export, the end-uses of game are mainly local: wildlife is sold to other farms for trophy and recreational hunting, safaris, and further breeding. On the plateau, the two reserves which have made breeding their core business and are now in a position to organise their own auctions are Keta Private Game Reserve and Shambala Private Game Reserve, both owned by white South African millionaires.[12] Before I left the field, Keta alone had made a profit of 26 million ZAR at an auction in May 2014 (Ibid.). Not only have game auctions surpassed cattle auctions in frequency and sale volume, but they have also become an important social event for Waterberg's residents. One can immediately recognise an auction day by the unusually high number of cars (plus a few helicopters) parked on the side of the tar road. In principle, since these events are open to the public and free of charge, all local families can take the opportunity to admire fancy animals, such as black impalas and golden gnus (kept in pens though, not roaming 'freely' in the bush). Nevertheless, apart from black workers, white and khaki dominate the landscape.

Another trend, which has (re)emerged in the past 10 years, is the increase in the number of reserves and farms for the private use of landowners, sometimes in the form of wildlife estates. Here, the commodification of wilderness occurs through the valuation of converted land, which creates new investment opportunities for the well-to-do. There may be situations where landowners rent out a small cottage to weekend tourists or start a breeding project, but only to make an extra income, since they do not need to make a living out of the land. In the Waterberg, those who own a game farm or a portion of a wildlife estate for the purpose of spending weekends, enjoying an early retirement or even starting a family in close contact with 'nature' constitute a diversified group. Generally speaking, however, they tend to be white and use English as a medium of communication. The closeness (that is, in terms of South African distances) of the plateau to Johannesburg international airport has turned the place into a haven for foreigners eager to buy their own 'piece of paradise'

and prompted by a favourable exchange rate. The majority of foreign landowners come from Europe, but some travel from as far as the United States to spend a week or two every year in their bush home. Besides practical considerations, such as its being close to Gauteng, malaria-free, and much cheaper than the Cape, what makes the plateau attractive to potential overseas buyers is that it matches quite well their ideas of wild Africa as an 'empty' land. As the previous chapters have amply demonstrated, this is not to say that there are no people living in the area, but as long as white people stay on their secluded farms and black people are gathered in one 'location' (this apartheid term being still in use) instead of being scattered all over the place, the illusion is preserved. Moreover, this contributes to the perception of a safer countryside compared with other parts of South Africa (Steinberg 2002).

A useful indicator of the upsurge in the demand for game farms as private residential land is the composition of the WNC membership. The number of Conservancy members who own land for exclusive private use doubled between 2002 and 2010, amounting to 16, or 40 per cent of the total.[13] This change is reflected in the activities of the Conservancy (essentially a landowner association often described by non-members as an 'exclusive, wealthy, English-speaking club'; game farm owner, personal interview, 22 April 2014), now revolving around a general meeting held once every two months where, in addition to housekeeping matters, a guest speaker gives a talk on something broadly related to environmental conservation.[14]

Eventually the uplift of the 'local community' (read blacks) has made it on to the agenda of WNC and of other conservation entrepreneurs in the Waterberg. Besides the usual rhetoric of helping the poor by creating new jobs (particularly questionable in the case of game breeding and residential developments), this has implied the establishment of a few charities. The Waterberg Welfare Society (WWS) is a case in point. This was founded in 2000 by two foreign residents of the plateau (both actively involved in wildlife conservation) with the support of The Wilson Foundation, the charitable organization of American interior designer of luxury hotels Trisha Wilson. In an interview, Wilson comments (Stone 2013):

> 22 years ago, I was awarded the Palace of the Lost City project in South Africa's Sun City. That began my love affair with Africa. After working on the Lost City development for several years, I ended up building a home in

> the Welgevonden game reserve. I became a member of the community, although I only visited there five weeks each year. You can't live in those communities and know those beautiful people and not get involved in fighting the poverty and disease.

It is not to deny the good done by such initiatives to note that, by giving back just a little to the community, without putting its 'poverty and disease' in relation to the history and political economy of the place, the unequal distribution of resources in the area never comes into question and ends up being reinforced (Ramutsindela et al. 2011).

The local conservation movement claims lineage to the so-called 'Waterberg pioneers', that is to say the first British settlers who arrived on the plateau at the beginning of the twentieth century (see Chapter 2). Like blacks, Afrikaners tend to disappear too from conservationists' accounts of the history of the place (Taylor et al. 2003, Walker and Bothma 2005). An important exception in this regard is represented by the Afrikaner writer and (amateur) naturalist Eugène Marais (1871-1936). Swart (2004) has shown how Marais is a complex 'Afrikaner hero' figure, clearly manipulated along the years to serve different purposes within the process of constructing and reconstructing Afrikaner nationalism. In the context of post-apartheid South Africa, for instance, Marais has been romantically valued as a 'neglected scientific genius' and even as an early 'ecological poet' (Ibid.: 865-6). Nonetheless, such complexity is put aside when suggesting a direct linkage between Marais observing and writing on baboons in the Bushveld of the early twentieth century and conservation initiatives in the plateau of some 70 years later. Instead, the fact that he was a nature lover, who from time to time transformed the Waterberg's farms into 'great zoological laboratories' (Rousseau 1982: 226) to study the behaviours of baboons, termites, and snakes, seems to provide the conservation activists and entrepreneurs of today with an authoritative source of legitimation for their work, reaffirming once again the pioneering spirit of the local (white) people.[15]

The reference to early white settlers becomes important in light of what appears to be a second reason, beside capital accumulation, for the conversion of land to game farms and private nature reserves, namely white landowners' politics of place. Those who own a farm and engage in conservation activities on it appear to re-enact an 'imaginative project of colonization' (Hughes 2010), whereby they integrate into the postcolonial

place by turning to the landscape (and reproducing it according to the colonial canon, Adams 2003), while avoiding social relations with local blacks. The relationship between nature conservation and the politics of place in (apartheid) South Africa was recognized for the first time by Nadine Gordimer in her 1974 novel *The Conservationist* (Gordimer 1974). In her analysis of Gordimer's work, Barnard (2007: 83-4) reports passages from an interview with the author, in which the novel allegorical critique of 'white South Africans' tendency toward an aesthetic mystification of the land' is made explicit and which Barnard comments as follows:

> She [Gordimer] argues that the discourse of conservation readily serves as an ideological cover-up, especially in a country where the question of the ownership of the land is so fraught. A "concern about the natural environment in which we live," she notes, can become "something unpleasant and almost evil," since it is so often connected with a "lack of concern for human beings." The very "beauties of South Africa" thus become "one of the most ugly things about it". She even suggests that it would be better if the pristine beaches and manicured parks were dirtier, strewn with discarded ice-cream cups and the like: this would at least be a sign that the "great mass of people" were using and enjoying the land.

The arguments by Hughes and Gordimer find an echo in two recurring themes characterizing my interviews with owners of game farms and private nature reserve in the Waterberg, namely land ownership and the topos of the farm as one's private kingdom. First, notwithstanding the on-going process of land reform, this group of white landowners seems to firmly believe to be the 'right' custodian of the land. This became evident when respondents were asked about their own perception of land claims: definitely something to check before purchasing the farm, but nothing more than that. None of them ever used words of empathy towards the masses of landless people in the country nor did issues of justice ever came up in our conversations. Instead, the few land claims in the area were generally dismissed as fraudulent.[16] Owners' eviction lingers as a remote possibility, but then an overgeneralization and stereotypization of black people as lazy, irresponsible, and fundamentally irrational, is employed to justify the opinion that giving the land back to Africans would be wrong, since 'they do not know what to do with that' (game farm owner, personal interview, 10 December 2013). The most 'progressive' interviewees would relate comments like that to the lack of education within the local community

('Western' education being the panacea par excellence). Yet, some were more 'straightforward': 'Things in Africa will never change […] tourists come for a few days and feel pity and think "Oh, they are so poor", but now, after a few years living here, I would say they want it [to be poor]' (game farm owner, personal interview, 16 December 2013).

These accounts support the argument that, like in Gordimer's novel, nature conservation translates into a fundamentally social phenomenon aimed at conserving an unequal system of power relations based on land ownership and at guaranteeing that everyone keeps their 'proper place' in it (Barnard 2007: 86). Therefore, a game farmer could take great pride in telling me that by purchasing his farm, he was not only helping conserve wildlife, but had also provided a crucial contribution to sanitize and securitize the bush, as he had discovered and shut down a brothel (which probably just relocated to a more 'adequate' place; game farm owner, personal interview, 21 February 2014). From a landowner's perspective, the bush (intended as 'nature') is not the site for disruptive social behaviour and people (again, read blacks) who are performing it must be removed (whereas problems can remain unsolved).

Second, game farm owners (especially when foreign) seemed to value particularly the opportunity to own a vast piece of land, in which they could be the single rulers (as opposed to Europe, where the state is perceived to always intrude into your personal life). Here, 'the farm is your own kingdom' (game farm owner, personal interview, 10 December 2013). However, in contrast to the pastoral dream described by Coetzee (1988: 6) as 'a network of boundaries crisscrossing the surface of the land, marking off thousands of farms, each a separate kingdom ruled over by a benign patriarch with, beneath him, a pyramid of contended and industrious children, grandchildren, and serfs', private nature reserve owners long for a land that is void of human presence. A retired couple living on a wildlife estate, for instance, may only need the help of a maid and a gardener. Statements like the following, which is taken from a self-narrative of the origins of private wildlife reserve Jembisa, also become interesting in this light (Jembisa n.d.a):[17]

> Jembisa is the product of a family story. It was built by a family who wanted to provide their children with an African "barefoot in the bush" childhood […] the family enjoyed 9 years of living in this wilderness paradise. Throughout this time there were many adventures, the children turned from

> little English children to bushbabies and then grew up into their early teens, real children of the African bush. They became a part of the fascinating community who live in the Waterberg and still maintain close links with them.

Surely, these kids must have enjoyed running barefoot in the bush and living many 'adventures', but this sounds rather a misinterpretation of what an 'African childhood' means for the majority of children living in the township, amidst dust and litter. Moreover, interactions with the latter have probably been kept to a minimum and mediated through 'secure' spaces such as WWS. Instead, the 'fascinating community' of belonging referred to in the quote would be better characterized as an elitist group of white, wealthy, and possibly foreign landowners, with a very little presence of black local residents.

6.3 Intersecting conservation and water

According to Death (2014: 1227), in post-apartheid South Africa environmentalism is commonly associated with white elitism and a number of popular movements centred on housing, water, electricity, land, and transport fail to recognize the fundamentally environmental character of these matters (following a definition of environment as where one lives) by preferring to conceptualize them as 'service delivery issues' (defined by Robins 2014: 483 as a 'vague and technicist concept').[18] The Waterberg is no exception, in that water shortages in Vaalwater are not conceived of as an environmental problem, but rather as the result of the local municipality's lack of capacity. What becomes relevant to ask, then, is who is supporting this narrative and for what purpose. As noted in Chapter 4, it is mostly white landowners who advance and defend the lack of capacity argument. By doing so, they distantiate themselves from the water problems in town and especially from a solution to such problems based on the redistribution of resources on the plateau. The owners of game farms and private nature reserves are particularly adamant that they cannot be put in relation to water shortages in Vaalwater, because they make a 'sustainable' use of the resource and, compared to irrigation farmers, they save water rather than consuming it. In truth, however, water represents a black box in the wildlife sector.

For instance, Wildlife Ranching South Africa (WRSA, a national association for individuals with an interest in wildlife production) does not deal with water issues directly, but relies on the work of the Natural Resources Policy Committee of Agri SA (formerly a farmers union and now the largest federation of agricultural organizations in the country), of which WRSA is part (WRSA general manager, personal interview, 4 June 2014). Nevertheless, this Agri SA committee is only concerned with irrigation water and does not possess any information on water uses on game farms (manager Agri SA Limpopo, personal interview, 17 June 2014). Furthermore, Waterberg's game farmers have not been invited (neither show an interest) to become members of the local Water User Association. Having said that, the point here is not to establish direct relations of causation between water abundance on private nature reserves and water scarcity in Vaalwater, but rather to show that conservation entrepreneurs play an important role in the network of power relations that shape water access in Vaalwater. Up to now private nature conservation has largely been absent from the South African water debate, and yet it is time to bring this important land-use change and its relationship to water resources to the fore. For this reason, this section looks at three specific ways in which game farms actively reproduce water inequality in the Waterberg both materially and discursively.

First, like crop and cattle farmers, game farmers conceive water resources as a private property that they rightfully appropriated when purchasing the land. Indeed, although they themselves do not usually fall within the category of existing lawful uses, it is still customary for game farmers to buy adjoining properties in order to obtain possession of a farm's water rights. As noted in the previous chapter, the fact that they do not receive a service from the municipality, but have to provide water for themselves, by pumping it out of a river or a borehole, reinforces their perception of private ownership of this natural resource. Since water is 'theirs', game farmers also feel that they can legitimately do anything they want with it. For instance, they can prevent any extraction from 88 km of river shoreline for conservation purposes, such as in the case of Lapalala Wilderness. Most of the time, however, they do extract water and, especially when offering eco-tourism services, this goes well beyond the satisfaction of basic needs. A 'wild' experience in the bush in fact seems inconceivable without running taps, toilets connected to a sewage system

(mostly a septic tank), and amenities such as swimming pools, Jacuzzis, and private dams. To display water abundance, in particular, helps achieve a specific marketing purpose, in that it meets the expectations of visitors who imagine an 'unspoilt wilderness' as a place where water resources must be plentiful and pristine. Shambala Private Game Reserve is a case in point. Its owner, Mr Douw Steyn, decided to dam a tributary of the Mokolo River in order to build a 30 ha reservoir (that has been named after him) where guests can enjoy game-viewing during a sundowner cruise.

Second, given DWS' narrow focus on irrigation,[19] private conservation activities have not been targeted for the purpose of regulating water uses and redressing past inequalities in water allocation. As a result, the owners of game farms and private nature reserves know very little about the Water Authorisation and Registration Management System (WARMS) database and usually do not register their water use, apply for a licence, or pay water fees. Two narratives are employed by game farmers to justify their exemption. On the one hand, game farmers claim to use little water (that is, in comparison to irrigation farmers). However, most of them do not monitor their water consumption and therefore cannot support their claims with actual figures. They do not see the point of installing a water meter, since they have water in abundance and do not need to pay for what they consume. This research has tried to calculate the average daily water consumption on a game farm with the help of game farm owners and managers (usually on the basis of educated guesses). The extreme results are quite interesting: a small (i.e. 3,000 ha) farm with three permanent residents (two owners and one staff member) and the capacity to accommodate up to 12 guests (generally over weekends) would consume around 1,000 l/d (game farm owner, personal interview, 10 December 2013). Whereas a big (i.e. 34,000 ha) reserve with 350 permanent residents on average (guests and staff) would consume around 300,000 l/d (game reserve manager, personal interview, 19 November 2015).[20] Although rough, these estimates provide a sense of the order of magnitude of water use on game farms vis-à-vis crop and cattle farms. It becomes therefore plausible to argue that the former consume tens or hundreds of thousands of litres per day, whereas the latter millions of litres per day (see Chapter 4). A number of factors contribute to explain the variation in water consumption among game farms, namely: farm size; the number of permanent residents; the

game species present (and whether the farmer waters them during the dry winter months); and the types of activity conducted (whether the farmer grows lucerne to feed the game, irrigates lawns, offers tourists horse riding safaris or even the possibility of playing golf). The point here is that water does turn out to be a strategic resource for game farms, too. Indeed, checking the availability of water sources before the purchase of a property is as important as checking for possible land claims. Nonetheless, there is a serious lack of data about the quantities of water actually consumed. Furthermore, in the absence of a clear definition of 'small volumes' (the threshold for registration and licensing, according to DWS), the initiative to approach the department is left to the discretion of individual landowners, who usually do not want any government interference in their activities for fear of losing what they perceive as 'their' water and ending up paying more taxes.

On the other hand, game farmers maintain (again, since they do not irrigate) that they employ water only for domestic purposes and therefore fall within the category of Schedule 1 water uses, that is, permissible uses according to the National Water Act (see Chapter 3). Nevertheless, the Act reads 'A person may, subject to this Act take water for reasonable domestic use in that person's household, directly from any water resource to which that person has lawful access' (RSA 1998, Schedule 1, s. 1), whereas on game farms water often becomes an essential component of a commercial service (think of eco-tourism or game trading) and therefore in need of authorisation.[21]

Finally, not only does the conversion to game farming de facto reproduce a system whereby land ownership (instead of citizenship) discriminates between those who can access water and those who cannot, but it is also and deliberately naturalizing the inequality ensuing from it. For instance, game farmers tend to oppose the physical redistribution of water on the basis of a natural limit, namely the hydrogeology of the Waterberg. Since aquifers are scattered unevenly across the plateau, they argue, it is only 'natural' that some properties have a reliable water supply, while others do not. To transfer water from secluded farms into town would be practically and economically unfeasible and, above all, it would represent a blatant attack on private property rights.[22] In addition, foreign landowners seem to understand inequality as a natural feature of the South African landscape, so that the fact that black people in town have to queue at a tap

at dawn in order to fill a bucket, whereas white people on a farm can enjoy water in abundance is simply perceived as 'the way things are' (WNC general meeting, personal communication, 3 July 2013). What is deeply problematic about these perspectives is not only their total lack of empathy for the living conditions of the majority of the local population of the Waterberg, but in particular their unravelling of a project of social production of space, whereby the place is valued and marketed as an unspoilt wilderness, whereas the presence of a growing mass of black poor is perceived as highly 'unnatural' and their water needs are disputed.

6.4 Conclusion

This chapter has shown that game farms and private nature reserves are significant water users and they contribute both materially and discursively to reproducing water inequality in the plateau. This argument is supported by three major considerations. First, conservation entrepreneurs share with irrigation farmers the view that water resources privately belong to them and must be employed as commodities for the purpose of capital accumulation. Second, water consumption on game farms is exempted from state regulation under the assumption that they extract small amounts and only for domestic uses. However, there is a serious lack of information about water uses in the wildlife industry. Moreover, the category of domestic uses has originally been conceived for standard household uses and not for luxurious consumption within the context of ecotourism service provision. Finally, by opposing the redistribution of water resources (in principle, since DWS is not targeting them for the Water Allocation Reform), game farmers question the very presence of the black poor on the plateau. While white landowners, even from abroad, are usually seen as contributing to preserve this 'unspoilt wilderness', the township black population (apart those few needed as labour) is perceived as unsustainable. And yet, what conservation entrepreneurs seem to deliberately overlook is the fact that some of the people who suffer water shortages come from farms that were at some point converted into 'wilderness'.

As it has been pointed out several times, this chapter did not aim to establish a causal relationship between large and unregulated water consumption on game farms and private nature reserves and water scarcity in

Vaalwater. Rather, it has been demonstrated how the land-water nexus has been reinforced as a result of the conversion to game farming.

Notes

[1] Parts of this chapter have been published as an article in *Third World Quarterly* titled 'Suspended redistribution: "Green economy" and water inequality in the Waterberg, South Africa' (Marcatelli 2015).

[2] According to the United Nation Environment Programme's definition, a green economy is deemed to enhance economic growth while reducing environmental risks and ecological scarcities (UNEP 2011: 16).

[3] These authors draw on the notion of 'state of exception' developed by Agamben (2005b).

[4] A very casual reference to be found in the novel by Marlene van Niekerk *Triomf* brilliantly shows how the opposite is actually true, by offering a competing memory of the Waterberg as a stronghold of extreme right-wing militarized groups. Towards the end of the story, which is set in Johannesburg in 1994, the main characters switch on the radio and listen to the following: 'First it was speeches by that Eugene-man [Terre'Blanche, the notorious Afrikaner white-supremacist and terrorist], explaining how Paardekraal was a beacon in the nation's history, and how the Waterberg was the place where the soldiers of Jesus were being trained to defend God's chosen people on earth against the black heathen hordes' (van Niekerk 2000: 476).

[5] This periodization is justified by Wegerif et al. (2005: 11) for three main reasons: the displacement of black people from 'white' land started to be documented only in the early 1980s (see Platzky and Walker 1985); problems associated with oral history accounts, such as memory loss and the passing away of respondents, compelled the authors not to go too back in time; and the aim of the research was to show a pattern of farm evictions common to the late apartheid years and the early post-apartheid years.

[6] The reliability of the findings presented in this report commissioned by the Wilderness Foundation becomes questionable as one notes that they are based only on 10 questionnaires self-compiled by as many private game reserves in the Eastern Cape.

[7] This term is used to encompass any 'private property that utilises wildlife on a commercial basis' (Taylor et al. 2015: xiii).

[8] My interviews in the Waterberg, although based on a small number of farms that were quite different in terms of size, reinforce the claim that game farms usually

employ half the number of workers needed on crop and cattle farms. According to my findings, the average number of workers employed on a game farm on the plateau is 49.8 (the extreme values being 1 and 380), whereas the average number of workers employed on a traditional farm is 81.8 (the extreme values being 5 and 373).

[9] Gianni Ravazzotti is the founder of Italtiles and was ranked among Africa's 40 Richest by *Forbes* in 2011. Peter Anderson is Chief Executive Officer of Anderson Wildlife Properties.

[10] At the time of my follow-up trip to the plateau in 2015, WBR had gone through its first audit and stakeholders were debating its future activities.

[11] The term colour variant is used to indicate 'a wild animal expressing a rare colour phenotype. It generally refers to a species of plains game such as Impala [...], Springbok […], Blesbok […], Blue Wildebeest […] and Gemsbok' (Taylor et al. 2015: ix). Whereas high value species is 'an informal term used by the wildlife sector to indicate uncommon herbivore species with high monetary value. These include: Bontebok […], African Buffalo, Nyala […], Sable […], Roan […] and rhino species' (Ibid.: xi).

[12] These are Mr Terry McLintock, founder of Canon South Africa, and the insurance magnate Douw Steyn, respectively. It is worth to note the connection between Mr Steyn and Nelson Mandela, noticeable in the presence of a Nelson Mandela Centre for Reconciliation within Shambala. According to the official brochure, 'It was intended to be a place where Mr Mandela could hold key discussions with political and business leaders, and continue to promote peace in troubled regions. Here he would have the ideal peaceful surroundings, the tranquillity, the privacy and the freedom to take time for quiet reflection, to think, to write and to hold deep meaningful conversations' (Shambala Private Game Reserve n.d.). However, a more critical reading presents it as a failed business deal between Mr Steyn and Mr Mandela, by which both would have profited from exploiting the Mandela name to market the reserve (Beresford 2013).

[13] In 2010 the Conservancy had 40 members in total, whereas in 2014 these were 70 (untitled draft document personally received from WBR).

[14] And yet, one must note that under the current chairmanship that started immediately after I left the field in 2014, a number of high-profile debates have been organized on topics ranging from colour variant, hunting in conservation, and even water (although, tellingly, water shortages in Vaalwater were not on the agenda).

[15] Marais moved from Pretoria to the Bushveld in 1907 and since 1908 he lived on the farm Rietfontein on the southeastern border of the Waterberg escarpment. Apparently, his reasons for moving were to break his morphine addiction, recover from a trouble relationship with a woman, and ultimately prospect for minerals

(Rousseau 1982: 200). Besides a job as justice of the peace in the district, he became especially known in the area as the 'miracle doctor' for treating patients with hypnosis (Ibid.)

[16] Unfortunately, to find accurate and updated information on land claims on the plateau has proven a task beyond my abilities. What appears clear is that in 2005, one third of Lapalala Wilderness was claimed. In 2008, this brought to the restitution of some land on the site known as Melkrivier, where an old farm school had been converted to become 'the hub of conservation activities in the Waterberg', thanks to the presence of the Waterberg Living Museum, the Waterberg Institute for Sociology & Ecology, and the head offices of both WNC and WBR (Waterberg Living Museum n.d.). At the present moment, there are three land claims on the plateau that are still under investigation (LLM 2015: 58). The first concerns the vast farm New Belgium 608 LR, portions of which are owned by Lapalala and Kwalata Wilderness. Whereas, the second and third claim concern properties that are located to the north-west of the plateau (that is, close to the Mokolo River), namely the farm Manamane 201 KQ and the farm Rooipoort 660 LQ (Ibid.).

[17] The owners of Jembisa, which in the self-narrative are indicated as 'the husband' and 'the wife', are actually Mr and Mrs Charles and Jane Whitbread, namely one of the wealthiest families in the United Kingdom (Charles' ancestor Samuel Whitbread founded in the eighteenth century what has now become the country's largest company in the leisure and hospitality sector, Whitbread Plc). In 2013, Jembisa hosted the cast of British structured reality show 'Made in Chelsea'. The bush is usually valued and marketed for its tranquillity and peace, but in this case 'this small, stylish lodge provide[d] the ultimate house party hideaway' (Jembisa n.d.b).

[18] This is partly agreed with by Cock (2006), as she argues for a separation within the South African environmental movement between those groups concerned with sustainable development (like EWT, for instance, mainly white and middle-class) and those groups concerned with environmental justice (more radical and with the unemployed and working poor constituting their social base).

[19] Understandable, in light of the fact that irrigation uses 60 per cent of the national water resources (DWA 2013b: 9).

[20] In the second case, the reserve manager pointed out that they were very 'water conscious' and metered their water consumption. Also, they were registered with DWS, but did not pay water fees.

[21] The situation with regard to game breeding is somehow more complex, in that Schedule 1 also authorizes the 'watering of animals (excluding feedlots)' (RSA 1998, Schedule 1, s. 1.b.iii).

[22] One may note that infrastructure development faces hardly any limits on private reserves. Anyway, the point here is not to suggest that water needs to be physically

redistributed, but to show how the very idea of redistribution (of water and consequently land) is opposed.

7 Conclusion

This dissertation has offered a new analytical framework to explain why a black marginal working class composed of (evicted) farm workers, the working poor, and the unemployed, whose home remains in the former 'white' countryside of South Africa, lacks secure access to water. It has been shown how these citizens are currently being dispossessed (again) of access to water resources, as these are allocated to more productive uses, such as commercial farming and energy production. Following Li (2010), this segment of the black rural poor has been understood as a new group of surplus people that have been abandoned by the democratic state to the extent that they are left to survive on a residual and minimal water supply. In this way, this thesis has rejected the argument of an imminent and 'natural' crisis of water scarcity across the whole country. Similarly, it has dismissed the narrative of a service delivery crisis, which holds local municipalities as the sole responsible for failing to deliver public goods and worsening the living conditions of black poor residents.

Instead, this dissertation has put to the fore those structures of inequality that contribute to the dispossession of rural black marginal workers. First, this refers to the land-water nexus, which enables white landowners to retain private control over the majority of the country's water resources by virtue of their ownership of the land. I have argued that this has been strengthened, rather than challenged, by the post-apartheid water reform, whose redistributive scope has been even more limited than that of land reform. Second, this has to do with neoliberal capitalism and the related process of water commodification of both resources and services. Following the full incorporation of water into circuits of capital accumulation, its allocation has been privileging productive uses over 'unproductive' ones (such as guaranteeing that the basic water needs of the poor are met).

The aim of this concluding chapter is to further clarify and expand the main contribution of this dissertation. It is organized into four sections. The first section looks back at the research question that has driven this

thesis to reassert my major arguments. The second section reflects on the relevance of a political ecology approach to the present study. The third section shows how the lessons learned from the Waterberg can also be pertinent to other research contexts. Finally, the fourth section suggests some promising directions for future research.

7.1 Back to the research question

This research was driven by the question: How is inequality of access to and use of water produced and legitimized in the Waterberg plateau of South Africa? I made three points in this regard. First, water inequality in contemporary South Africa cannot be understood *only* as a legacy of colonialism and apartheid, but needs to be seen as something that is continuously being reproduced, mostly in relation to the ways in which neoliberal capitalism operates. This has to do with the intensification and expansion of water commodification: its incorporation in processes of private and public accumulation *and* their intertwining (what I have referred to in the thesis as the public/private question). Water has historically been a key factor in the production of agricultural, energy, mineral, and now even 'green' (Neimark et al. 2016) commodities. More recently, the post-apartheid state, as custodian of all water resources and major provider of water services, has proceeded to commercialize both spheres. In the Waterberg, the combination of these two phenomena has implied the opening up of new opportunities for capital accumulation for white landowners, who have started to sell water to the local municipality to meet an increase in the demand for water services in Vaalwater.

Second, water inequality (which in the Waterberg means uneven patterns of access and use along racial and class lines) becomes normalized in that the market is assumed to be a just mechanism of resource allocation. In other words, following economic rationality, water should be used by those who value it the most, as shown by their ability to pay for it. This is the sense in which the state educates poor people to become 'responsible'. As the (black) poor cannot pay for water services, so the government's argument goes, they can only have access to limited water supply. At the same time, as demonstrated in the Waterberg, they are encouraged to have indirect access to water (through their labour), so that they can earn money and eventually spend it to increase their own water consumption.

Third, water inequality is currently being legitimized not only as a result of its normalization, but also of its naturalization. This becomes evident at the intersection of water debates and private nature conservation. Besides being a strategy of capital accumulation, the latter represents a particular politics of place of whites in the new South Africa that is founded on the idea of nature as emptied of (some) human presence. Against this background, the naturalization of inequality rests on a logic of the exception rather than of the ordinary. For instance, local conservationists depict the Waterberg as a space of exception: a wilderness where black people never occupied the land permanently and where colonialism and especially apartheid hardly took place – something that this dissertation has shown not to be true. In this narrative, the 'war' against rhino poaching (the most pressing conservation issue both at the national and local level) is framed as a concern common to residents and tourists alike. Nevertheless, the lack of drinking water in Vaalwater fails to be perceived as problematic or unjust and therefore worth of common action. Quite the contrary, it is the very presence of blacks (apart from labour) and their water demand that become 'unnatural', unsustainable, and contested.

7.2 On political ecology

A political ecology approach to the study of water inequality in South Africa has proven fruitful for four main reasons. First, it has allowed me to go beyond the nature/society dichotomy that is implicit in the most popular explanations of why a large number of citizens (mainly black and poor) still lack safe access to water. On the one hand, at the national level, discourses of a supposed 'natural' water scarcity are taking centre stage. On the other hand, at the local level, water shortages are made sense of exclusively as social phenomena, to be put in relation with the supposed 'failure' of local government.

Second, seen from a political ecology perspective, water access has been investigated as a crucial site of power relations in the post-apartheid order. This dissertation has argued that power works *through* water in three major ways: water allocation among competing uses now falls within the ambit of decision making of the national government; and yet, white commercial farmers have been able to retain the authority (based on land property rights and legitimate by definition) to extract not only water, but also

profit and rent from it; finally, individual water consumption has become increasingly regulated by the state both visibly (via water infrastructure, for example) and invisibly (via the working of the market for water services and the norm that the poor need to limit their own water uses).

Third, political ecology has allowed me to repoliticize the water debate in the sense of moving it beyond party politics. Water access is inherently political in that it is shaped by power relations. However, these cannot be limited to the patronage networks internal to the ANC. As this dissertation has shown, in formerly 'white' rural South Africa, the power relations that come more visibly to the fore are those between white farmers and (black) local municipalities.

Finally, the historical focus of political ecology has helped reframe spatialized and racialized water scarcity as the latest stage in a long-term process of dispossession. For instance, by tracing the local history of the Waterberg, I have demonstrated that the argument underpinning many white landowners' accounts (namely, that black residents cannot be entitled to water services because they do not belong to the place) is ridden with contradiction. Black people have inhabited the plateau as long as whites, if not longer, although their presence was concealed in the colonial and later apartheid white settler societies. This dynamic is now repeating itself, as black workers and dwellers are not only imaginatively, but also materially removed from white farms and simply forgotten.

7.3 Is the Waterberg exceptional?

As noted above, local conservationists are keen to depict the Waterberg as a space of exception, fundamentally as 'nature' out of history. Although this is obviously untrue, it remains relevant to ask to what extent the socio-nature relations described for the plateau are unique to the South African context or rather echo political ecologies of water from other settings. On the one hand, two elements seem to make the case for the Waterberg case study to fall within the remit of a supposed South African 'exceptionalism'. First, notwithstanding the transition to democracy, some of the major structures of inequality of the apartheid era have not been dismantled. For instance, a system of racialized property rights in natural resources (i.e. land and water) has been left unchallenged by the post-apartheid state. Second, despite an extensive social protection system, of which free water

is a (much criticized) pillar, redistribution is often put on hold to accommodate production. Medupi is a case in point. The fact that Vaalwater residents are left without water for days at times, was not considered by DWS a reason sufficient to withdraw a small amount of resources away from the mineral-energy complex.

On the other hand, however, a number of themes that have emerged in this dissertation overlap with findings from other regions of the world. First, the work of Boelens (2009) demonstrates that in Latin America (or at least, in the Andean region) the post-colonial state has centralized control over water allocation and introduced a notion of 'legal equality' that has turned out to be a 'myth', since material power relations have been left unquestioned. In this way, both cultural difference (as it appears through local water rights) and economic difference have been rejected. Instead, private property rights have become the norm, so that the marketization of water resources is facilitated and everyone is depicted as equal in virtue of their freedom to participate in the new market for natural resources. Second, Roth and colleagues (2014) show that the productivist imperative underpinning the use of water as a material input in development projects (such as the production of cheap electricity) is prevalent in South Asia and it implies depriving some people of basic water access. Finally, the exploitation of groundwater both for water services in peri-urban areas and for irrigation in agriculture is emerging as a new research topic in India. Kulkarni and Shankar (2014) argue that because of the material characteristics of this resource (i.e. its invisibility and unmeasurability), injustices in its distribution are more difficult to recognize and thus to be fought.

For these reasons, the study of the Waterberg's waterscape links up with and sheds light on a number of broader issues that go beyond South Africa and beyond water – including: the reconstruction of the post-colonial state and its extension of control over strategic natural resources at the same time when these are being incorporated into processes of neoliberal accumulation; the relationship between redistribution and production, and the ways in which the fate of surplus population is caught up in that; and, as it should be clear from the previous section, the working of power and biopower.

7.4 Future directions for research

The findings of this dissertation open three possible venues for further research (also beyond the water domain). First, as noted in Chapter 1, the analysis of water access in the rural villages scattered to the north-east of the Waterberg plateau (in the former Bantustan of Lebowa) has been left out of my research in order to avoid too broad a scope that would risk to become unmanageable. However, knowledge on access to and uses of water in the former Bantustans is still limited both in number and focus, as it tends to pay attention only to instances of farming (both commercial and smallholding). Although the work of Smits and colleagues (Smits et al. 2010) provides new insight on the topic of so-called 'multiple-use services' within the context of rural water supply, this thesis has shown the importance of going beyond the productive/domestic divide. For this reason, it urges more studies of processes of water redistribution (or lack thereof) in marginal places where residents do not have secure access and yet are not interested in using the resource 'productively'.

Second, given the focus of this dissertation on the local level, the complex role played by an organization such as DWS within the process of national water reform has only been hinted at. Similarly, in light of the rather elusive presence of the ANC in Vaalwater (that is, compared to that in Modimolle), the role of the ruling party has not been central in this thesis. However, a political economy cum ethnography of DWS (to continue and expand on the work by Movik 2012) is still very much needed in order to fully grasp and make sense of the ANC water politics. Indeed, this is a subject that has not received any specific attention within the critical scholarship on the ANC nor within that on the water reform, more interested (as noted in Chapter 3) in the environmentalism embedded in the new legislation than, for example, in the reasons for the presence of a property clause in relation to water.

Finally, after I left the field in August 2014, the NGO Save the Waterberg Rhino in association with the Waterberg Biosphere Reserve and the Waterberg Nature Conservancy started working on a project called 'Security in the Waterberg'.[1] The securitization of conservation spaces and practices, especially in relation to rhino poaching, has received growing attention within critical conservation studies (see, for instance, Büscher and Ramutsindela 2016, Duffy 2015, Lunstrum 2014, Massé and Lunstrum

2015). These analyses have noted how securitization often implies the displacement and dispossession of communities living within conservation zones. And yet, the Waterberg offers a new scenario, where securitization is being extended to the public space outside of game farms and private nature reserves. The declared objective of this move is to enhance security in the whole rural area besides and beyond the concern for rhinos' protection. What becomes relevant to ask, however, is security for whom? And how do these projects translate into private (white) control over the movement of local (black) people? This dissertation has shown that the unequal distribution of water resources is already (re)shaping the plateau as a white space, where the possibility for the black poor to remain are being constrained. This move is now reminiscent of another concern typical of the apartheid state, namely that of preventing black people from 'trespassing' and moving in such white space.[2] As such, the importance and timeliness of the arguments advanced in this thesis are reasserted, and especially the idea that the control over and hence access to land and other natural resources such as water is becoming not less, but *more* unequal than when apartheid ended.

Notes

[1] This has involved contracting the private company NEHA GES, which offers 'land protective services' and in particular, for the conservation sector, 'anti-poaching operations, general security, and intelligence services' (NEAH GES 2015). One of the pillars of the project would be the surveillance of points of access to the secondary, dirt roads of the plateau by landowners residing in the area. Although this is something new in the Waterberg and within the context of securitization for conservation purposes, road closures aimed at protecting white, middle-class residents from crime, have appeared in the northern suburbs of Johannesburg since the mid-1990s (Bénit-Gbaffou et al. 2012).

[2] As painfully captured in the novel *Life & Times of Michael K* by J.M. Coetzee (2004).

Appendix

A.1 Interviews

Respondent	Type	Number
Vaalwater suburbs residents	Structured	10
	Semi-structured	5
Leseding township residents	Structured	60
	Semi-structured	39
Irrigation farmers	Mixed (questionnaire + semi-structured)	20
	Semi-structured	4
Game farmers/conservation entrepreneurs	Mixed (questionnaire + semi-structured)	18
	Semi-structured	1
Private water service providers - Private landowners (x 3) - Local attorney - (Water silo concept inventor)	Semi-structured	5
Modimolle Local Municipality - Divisional Manager Water and Sanitation (x 3) - Supervisor Water and Sanitation – Vaalwater (x 3) - Artisan Water Services – Modimolle - Indigent Clerk – Vaalwater (x 2) - Ward Councillor 1 (x 2) - Ward Councillor 2	Semi-structured	13
Transvaal Agricultural Union	Semi-structured	1
Wildlife Ranching South Africa	Semi-structured	1
Department of Water and Sanitation - Directorate Option Analysis - Directorate Water Services - Directorate National Water Resource Planning - Waterberg District Office - Validation and Verification Limpopo Regional Office	Semi-structured	5
Private Service Provider	Semi-structured	1
Eskom (Medupi site)	Semi-structured	1
Total		**184**

For anonymity reasons, respondents are identified with the category of residents they belong to or alternatively with their institutional affiliation rather than with their actual names.

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Curriculum vitae

Michela Marcatelli (Bologna, 1982) studied development studies at the School of Political Sciences of the University of Bologna (Italy), where she obtained her First Level Degree in International Development and Cooperation Studies (with Distinction) in 2004 and her Second Level Degree in Local and International Development and Cooperation Studies (with Distinction) in 2007. For her Second Level Degree, she received a Thesis Fieldwork Grant from the University of Bologna, to conduct research on public-private partnerships for the provision of water services in South Africa. In 2008, she was awarded a Huygens Scholarship from the Netherlands Universities Foundation for International Cooperation (Nuffic) to pursue a Master's Degree in Development Studies at the International Institute of Social Studies (ISS) of Erasmus University Rotterdam. She graduated (with Merit) from ISS with a research paper titled 'A political economy perspective on the right to water in South Africa'. In April 2012, she started her PhD research at ISS. During her PhD, she spent more than one year in South Africa, with academic affiliations at the Institute for Poverty, Land and Agrarian Studies (PLAAS) of the University of the Western Cape (2013-2014) and at the Wits Institute for Social and Economic Research (WISER) of the University of the Witwatersrand (2015). Both before and during her PhD, she has published on the human right to and the political economy of water in South Africa.