**Scarcity as a means of governing: challenging neoliberal hydromentality in the context of the South African drought**

**ABSTRACT**

This article investigates the role of scarcity in water governance with a particular focus on South Africa. It applies a (green) governmentality perspective and argues that in neoliberal hydromentality scarcity is used as a regulatory device that governs people’s water access. In South Africa, water governance and water scarcity have for a long time been central to the construction of a particular state with particular social purposes. While scarcity in the post-apartheid period has mainly been used as a means of governing the poor, the role of scarcity has in the recent water crisis been transformed; scarcity has increasingly become a material concern for all of society. Notwithstanding that the crisis is due not only to the lack of rain but also to political and institutional factors, it has, in media and policy circles, involved a preoccupation with scarcity as a physical phenomenon. Such a preoccupation risks obscuring the reasons why poorer populations have long suffered from the lack of water. At the same time, the article contends, the current crisis presents South Africa with an opportunity for revisiting water scarcity as a technology of governing in creating a more sustainable and equitable water allocation.

**Keywords**

Water, Hydromentality, Biopolitics, Scarcity, South Africa

**Introduction**

A recurring message in global media during the first months of 2018 was that the city of Cape Town, South Africa, was about to ‘run out of water’. The concept of ‘Day Zero’ – the day when the water taps were projected to be closed in the city – created anxiety locally and nationally as well as globally, and stimulated a discussion around the question: ‘Who’s next?’[[1]](#footnote-1) In the context of the current crisis, this article explores the historical and current role of water scarcity in South African water governance.

Critical geographers and political ecologists have explored the ‘manufacturing of scarcities’ (Johnston, 2003; Linton, 2010: 68; Mehta, 2005, 2010), especially in what has been termed the ‘hydrosocial research’ (Birkenholz, 2013; Linton, 2010; Linton and Budds, 2014; Loftus, 2015; Sultana, 2013; Swyngedouw, 2009, 2015). According to this framework, scarcity is not a natural or neutral phenomenon, but rather socially constructed within the present social and economic order. However, at the same time as being ‘constructed’, water accessibility, or the lack of it, is also inherently ‘material’; the availability, distribution and use of water are central to the organisation of the economy, to survival, health and possible lifestyles, and to the ways in which ecosystems function (or not). In this sense, and this is a key argument of critical water research, water is productive of the societies in which we live (Linton, 2010) and central to how we understand our place in the social hierarchy (author).

Based on the above-mentioned literature, this article investigates how notions of scarcity work so as to support particular forms of governance. The article does so by applying a governmentality analysis to water management (for other water governmentality studies, see Birkenholz, 2009; Boelens, Gemechu, 2018; Hoogesteger and Baud, 2015; Kooy and Bakker, 2008b; Ward, 2013; author). The article draws on earlier studies of how different populations and their use of resources have been understood in (neo)liberal economic and political thought (Dean, 2015; Tellmann, 2013). As this literature has pointed out, the biopolitics at play in resource governance needs to be revised in relation to the original Foucauldian notions of the government of the population. By expanding on these insights in the particular context of water management, we can better comprehend how scarcity works as a ‘regulatory device’ in relation to different populations (for other biopolitical studies of water governance, see Bakker, 2010, 2012, 2013; author).

The aim of this article is not only to provide a theoretical reading of scarcity but also to investigate scarcity as a technology of governing in the case of South Africa. In this exploration, we learn that for a century South Africa has used water and water governance as an explicit tool for building the state and for social purposes. While its hydromentality first was a modernist and racist one, it became labelled as both inclusive and sustainable after the democratic transition. In practice, however, the inequalities established in the apartheid era were maintained (see also, for example, Bond, 2000; Loftus, 2005; Rodina, 2016; Rodina and Harris, 2016; author). The article explores the role of scarcity in this development. It argues that scarcity, as a governing device, has mainly been directed at poor people’s water use and their access to water both for domestic and productive uses. However, in the current South African water crisis the role of scarcity has changed; it has increasingly become a material concern for all populations and sectors. While this crisis poses enormous challenges, the article argues that it simultaneously presents the country with an opportunity for a transformation to a more socially inclusive and ecologically sustainable water management.

The article is organised as follows. The first section introduces a green governmentality perspective and explains how notions of scarcity and population(s) can be problematised from this perspective. It outlines key insights of critical geography regarding how we can understand the role of water and water scarcity in contemporary societies, and it describes how the two bodies of literature, that is, green governmentality and critical geography, are combined for the purpose of studying water scarcity in this article. The second section of the article focuses on the South African case. It first discusses South African water scarcity and drought under apartheid. It then provides an overview of governing rationales in the post-apartheid period and shows how scarcity has been a means of governing water both for household consumption and for productive uses and livelihood purposes. Subsequently, the third section of the article deals with the role of scarcity in the current water crisis and the way that the South African state aims to address its water challenges. Based on the findings in the article, the text is then concluded in terms of how we can move beyond neoliberal problematisations of water scarcity.

**(Green) governmentality, the population-resource nexus and scarcity**

Green governmentality studies issues related to resources, nature and the environment based on Foucauldian notions of governmentality and biopolitics (see, for example, Agrawal, 2005; Darier, 1999; Rutherford, 2007). While governmentality refers to the organised practices of governing, involving a variety of ‘mentalities, rationalities, and techniques’ (Mayhew, 2004), biopolitics refers to the regulation of the conditions of life at the level of population (Dean, 1999; Foucault, 1998: 139; Foucault, 2003). Governmentality literature has a particular approach to the concept of neoliberalism. From a governmentality perspective, neoliberalism is not a political philosophy but understood as an ‘art of government’ (Dean, 1999: 210) that makes use of a range of different techniques, including biopower over populations and the governing of the self (Lemke, 2002).

In early elaborations, Luke (1999: 146) explained green governmentality with reference to Foucault’s notion of government as ‘the right disposition of things’. He described green governmentality as ‘disciplinary articulations of sustainability and development [that] centre on establishing and enforcing “the right disposition of things” between humans and their environment’ (Luke, 1999: 146). Luke argued that Foucauldian notions of the biopolitics of the population could be extended to include an analysis of how ‘biopolitical strategies and technological systems’ wagered not only human life, but also the lives of other species (1995: 66). This aspect, namely, that biopolitical regulation extends to lifeforms other than human, was not explicitly addressed by Foucault, although it is, according to green governmentality theorists, implicated in the understanding of the concept of biopolitics.

One of the central themes in green governmentality that Foucault did engage with more explicitly is the notion of scarcity. In *Security, Territory, Population* (2007), Foucault outlines how the understanding of the concept of scarcity changed in the shift from a mercantilist economy to a system that allowed a ‘free circulation of the grain’ in 17th and 18th century France. His discussion is simultaneously a description of the transition from a disciplinary society to a society that focuses on the regulation of the population. In this shift, scarcity is transformed. It is transformed from being something that should be avoided through price control, control of storage and exports of grain — so that urban areas could be fed at the lowest cost and so that the risk of revolts could thereby be hindered— to a system which promotes ‘the free circulation of the grain’ as the better system for avoiding scarcity (Foucault, 2007: 33). In the new system, market forces were to compensate for the fluctuations in production. Scarcity then changed from being something that was both an ‘individual’ and a ‘collective’ phenomenon — because of how hunger was suffered both by individual people and by the nation in times of lack of food — to becoming something of a ‘chimera’ (Foucault, 2007: 33). It was not a chimera in the sense that scarcity disappears for everyone: ‘it may well be that some people die of hunger after all’ (Foucault, 2007: 42), Foucault writes. Rather, the point here is that a shift had taken place in the politico-economic rationalities so that the level that is pertinent for government action was the population, whereas the individual was only a point of interest as an instrument to achieve the government’s goals at the general level of the population. What Foucault provides here is a description of the emergence of the population as a political subject and of biopolitical regulation, which he in these lectures refers to as the ‘apparatuses of security’ (Foucault, 2007: 34).

What is also included in this description is the supposition of neoliberal governance that, in the absence of a disciplining state, it is important that people ‘conduct themselves properly’ (Foucault, 2007: 43). Those who do not conduct themselves properly – and suffer from hunger as a consequence – can be understood as people who ‘bring about their own misery’. Thus, in this governance model, a kind of moralism features in the way that people should take responsibility for, and act in accordance with, the larger system. We recognise such a moralism from Malthus’ *An Essay on the Principle of Population* (1798).

In environmental discourse, it is widely recognised that Malthus’ population thesis has been one of the most influential publications when it comes to setting the stage for how the relationships between populations and resources have been understood. Malthus’ thesis stipulated that the population increases faster than its means of subsistence but that the growth is ‘kept equal to the means of subsistence, by misery and vice’ (Malthus, 1798). What is important here, for the argument of this article, is that Malthus’ population thesis not only placed the notion of scarcity at the centre of environmental and population discourses and established the widely believed idea that there is a ‘possibility that there are, will or could be too many people than is good for us’ (Sandilands, 1999: 82). As Tellman (2013) demonstrates, Malthus’ thesis also makes a distinction between different populations regarding their relationship to futurity and their ability to attain material progression. Such a distinction is based on a colonial imaginary and a colonial hierarchy that differentiate between dangerous ‘“savage” and economic “civilized” life’ (Tellmann, 2013: 135).

The reason why some populations do not reach the stage of civilisation is, according to Malthus, the immediacy with which populations react to access to resources. While the ‘animals and uncivilized states of man’ react to an abundance of resources with ‘a large proportion of the procreative power’ (Malthus, cited in Tellmann, 2013: 144), civilised man is able to turn present abundance into a viable future (Tellman, 2013: 146). According to this perspective, ‘savage life’ becomes locked into ‘an endless circle of abundance and destruction’ (Tellmann, 2013: 144), as it is occupied with living in the present without a sense of either history (Tellmann, 2013) or future.

In the Brundtland report (WCED, 1987), Malthus’ argumentation around different populations and their relation to futurity was expressed through the so-called ‘downward spiral’. In this spiral, the poor were assumed to place pressure on resources, and the environmental degradation that followed this pressure was in turn assumed to lead to increasing poverty (Scherr, 2000: 481). In these descriptions, the poor were portrayed as lacking the capacity to act responsibly and sustainably due to their absence of alternatives. In line with Malthus’ thesis, this involves the assumption that while the poor are preoccupied with surviving the present, wealthy individuals can invest in the future, which means that environmental conservation, agency and the ability to make (good and environmentally sound) choices are seen as characteristic of wealthier populations.

However, as argued convincingly by Tellmann (2013) and Dean (2015), Foucault failed to account properly for the ‘Malthus effect’ (cf. Dean, 2015). What is missing in Foucault’s accounts of biopolitics is how Malthus’ stipulations introduced a ‘caesura’ into the biopolitical conceptualisation of the population, a caesura that builds on a colonial hierarchy and the difference between ‘savage’ and ‘civilized’ life (Tellmann, 2013). From a green governmentality perspective, two things become important here.

First, acknowledging the ‘Malthus effect’ in the biopolitics of the population is vital, because it provides a perspective on how different populations are distinguished between in relation to resource use and environmental effects. It also provides a perspective on how *certain* populations have become viewed as the problem in environmental discourse. Thus, Malthus’ population thesis was (and still is) productive of a fear that the poor and ‘underdeveloped’ will, as Tellmann writes, ‘eat up the future for all’ (2013: 151). Here, the population is not a form of collective but is rather ‘determined by an inner “ladder of hierarchisations.” This ladder differentiates between more animal, more savage and more catastrophic forms of life on the one hand and more human, more civilized and more economic forms of life on the other’ (Tellmann, 2013: 151). In order to make sense of these hierarchisations, Georgio Agamben’s theories can help us. Even though Agamben’s and Foucault’s theories differ, and in several ways are incompatible with each other, the Italian philosopher’s developments of biopolitical theory have a language for describing how different populations (or forms of lives) have become defined and understood. Agamben’s theories place in focus the difference between *zoë*, referring to ‘the simple fact of living common to all living beings’ (Agamben, 1998: 1), and *bios,* meaning ‘the form or way of living proper to an individual or a group’ (Agamben, 1998: 1), that is, the difference between biological life and the political life (or mere life and the good life [Plonowska Ziarek, 2012: 1]).

Second, scarcity, in this context, acquires a particular function. It does not merely depict a situation in which demand is larger than the resources available. Rather, it functions as a ‘regulatory device’ (Tellmann, 2013), or in other words, a governing technique. Such a governing technique aims at instilling a sense of limitation and at stimulating acting ‘“as if” scarcity prevails in any given moment’ (Tellmann, 2013: 146). Here, scarcity has an ‘uncertain status’: ‘It wavers between what is given and what is not yet; between what is and what should be apprehended and averted’ (Tellmann, 2013: 146). From this perspective, scarcity can be understood as a technology of governing within (neo)liberal governmentality, in which biopolitical strategies of governing, which both target and hierarchise populations, are a crucial and necessary part (cf. Dean, 1999: 113).

**Studying scarcity and the population-resource nexus in neoliberal hydromentality**

In this article, the two insights described above will be taken as a point of departure in order to study the role of water scarcity and the conceptualisation of different populations in South Africa. In order to do so we need to make sense of the role that water plays for societies in general, and for the South African society in particular. Critical geography offers such insights, as it has placed the question of what water *is* and *does* on the research agenda (Linton, 2010; Linton and Budds, 2014; Yates, Harris and Wilson, 2017; author; see also Strang, 2004). According to this line of research, water is not only a resource necessary for survival but ‘what we make of it’ produces ‘the worlds and the selves we inhabit’ (Linton, 2010: 3). Such research has demonstrated how water and our access to it are part of ‘making society’ (cf. Linton, 2010: 5) and of constructing identities and subjectivities relating to class, race and gender (Ahlers and Zwarteveen, 2009; Harris, 2009; Kooy and Bakker, 2008a,b; O’Reilly, 2006; Sultana, 2009). It has also shown how water and water infrastructure are productive of certain ideas of modernity (Gandy, 2014; Kaika, 2005). In specific relation to the South African context, such research has shown how the right to water is unevenly and unequally implemented (Loftus, 2005; Rodina and Harris, 2016; Marcatelli, 2017) and how water technologies have produced certain ideas of citizenship (von Schnitzler, 2008) and particular subjectivities around the ‘good’, responsible and sustainable use of water, as well as ideas of privilege and deprivation (author). This means that water governance is part of forming the relationship between the state and its citizens, and of (re)producing social hierarchies. Water governance can thereby be understood as a strong (bio)political tool for creating particular societies and citizens and crucial for whether citizens feel included or excluded in the political community of rights (author).

‘Hydro-social research’ has problematised the notion of scarcity, arguing that rather than being a natural phenomenon, water scarcities are constructed within the prevailing political economy. Swyngedouw writes that ‘[t]rue scarcity does not reside in the physical absence of water in most cases, but in the lack of monetary resources and political and economic clout’ (2009: 58). Metha has questioned the taken-for-granted nature of scarcity and unpacked different constructions of the concept (2005, 2010). One useful distinction is between lived/experienced and constructed scarcity (2010: 23). The former type of scarcity is felt by local people due to biophysical shortage and the latter is the kind of scarcity that is manufactured through socio-political processes. Manufactured scarcity is often used by powerful actors in order to hinder redistribution of water resources and to legitimise particular solutions in water governance. In turn, this becomes an obstacle to a more equal distribution of the resource (2010: 7). Furthermore, in mainstream policy discourse scarcity is often understood as an absolute concept: as a physical and volumetric lack of water, an imbalance between supply and demand. Such a notion of scarcity produces the understanding that ‘more water’ is needed (Jairath, 2010). Historically, large dam constructions are examples of how this has been solved, while today, desalination plants can be added to such infrastructural supply solutions.

From a critical perspective, scarcity is not an absolute but a relative concept: water is scarce in relation to ‘an assumed notion of what is sufficient’ (Jairath, 2010). This notion, in turn, is related to the political economy and, as is argued in this article, to ideas on what constitutes a decent standard of living for different populations. Additionally and relatedly, different ‘scarcities’ tend to be conflated; challenges of meeting basic needs for the poor are ‘clubbed together’ with the scarcity of water for a luxury consumer who cannot water her garden or wash the car (Jairath, 2010). A critical and constructivist perspective on scarcity — that nevertheless does not neglect the very materiality of water and water availability — questions universal and naturalised understandings of scarcity and asks questions such as: How and by whom has scarcity been created? Who is affected? Who benefits? What do conventional understandings of water scarcity obscure? It also begs for new visions of how the ‘scare of scarcity’ can be challenged (Mehta, 2010).

In order to study water scarcity, this article combines insights of ‘hydro-social research’ with a (green) governmentality perspective. This takes us to the concept of hydromentality. Hydromentality draws on the concept of governmentality and makes possible a problematisation of contemporary water governance (author; see also Lankford’s [2013] conceptualisation of the concept with emphasis on infrastructure). It is here defined as: *assemblages of governing rationalities, techniques of rule and ways of thinking about, and defining, water* (author).

Learning from green governmentality theories, contemporary global water governance can be addressed as *neoliberal* hydromentality. Viewing hydromentality as neoliberal in a governmentality sense does, however, not merely mean that processes of privatisation, commercialisation, and liberalisation are promoted, but that its neoliberal characteristics are understood in a broader sense. Rather than a *laissez-faire* view on water allocation, it is acknowledged that constant interventions are required in order to make society function in accordance with the market being seen as the ideal model (cf Foucault, 2008). For example, water for basic needs can be addressed as such an intervention, as it has an important function; by granting the poor their basic water, commodification of the resource can be allowed to continue above that level. Water for basic needs should therefore not, from a governmentality perspective, be seen as standing in opposition to a neoliberal approach to water governance but rather as something that is essential to its functioning. Following from this, a *neoliberal* hydromentality can be described as a hydromentality that *includes a focus on market-based solutions to water problems but at the same time recognises the need for interventions, such as guaranteeing a human right to water and water for the environment, which in the end will make market rationalities function* (author).

Applying the concept of hydromentality places focus on specific governing *techniques*, such as responsibilisation and the ‘conduct of conduct’, that is, the steering of people’s behaviour around water. Furthermore, it draws attention to how subjectivities are formed in hydropolitical relations of power and how the agency of water users is utilised in order to secure the objectives of government. As explained in the previous section, there is a particular biopolitics at play in neoliberal governance; it involves a certain view on how different populations relate to the use of resources and the right to access them. In this article, this theoretical framework is used as a backdrop in order to pose the questions of how the population-resource nexus as well as scarcity have been applied and used in strategies of governing water use and access in South Africa.

**Water scarcity and drought in the making of the apartheid state**

In South Africa, a statement that is often reiterated by its Department of Water and Sanitation (DWS) is that the country is one of the 30 driest in the world. This statement sends the message that water scarcity is a physical phenomenon and a central problem for the country’s water governance. In addition to this, South Africa has, during the last few years, experienced a major drought.[[2]](#footnote-2) Droughts, which are defined as periods of below-average rainfall, are natural to South Africa. Due to its location and topography, the country has a climate characterised by variability and below average rainfall (WRC, 2018). The current drought, which started in some areas as early as 2014/2015, has, however, been especially severe and proclaimed to have caused a national disaster.

This drought has been compared to the drought which hit South Africa hard in the 1930s. The drought in the 1930s had severe effects on agriculture, and was, together with the depression, a main incentive for the development of water resources on a large scale. It was one of the ‘main stimuli of the hydraulic mission of the twentieth century in South Africa’ (Turton et al., 2004: 399), a paradigm that is not specific to South Africa but one that became established across the globe. The hydraulic mission was characterised by a belief that there is an abundance of water that can meet the growing needs of a modernising society through hydraulic technologies (Bakker, 2010). In this paradigm, state/public ownership of water resources and water services provision was the norm and justified by the large-scale investments that were needed in order to construct infrastructure both regarding the abstraction of water and for providing access (Bakker, 2010).

In South Africa, not only did the hydraulic mission mean that water on a larger scale could be provided to industry and agriculture in order to build up the South African economy; it was also used as a ‘matter of social policy’ (Muller, 2012). Large water resources development projects meant that jobs could be given to white workers, which functioned so as to alleviate ‘the poor white problem that had been haunting South Africa since the 1890s’ (Turton et al., 2004: 399). In this period, the black population was neglected and the situation worsened when the Nationalist Party came to power in 1948 (Funke et al., 2007: 13). The apartheid state intensified state control over water resources, both in white South Africa and in the homelands. For the black population, apartheid involved dispossession, forced removals and distorted farming activities, and the homelands had to negotiate water access in competition with users outside of their territories (Funke et al., 2007: 13). The basin management of the apartheid state ignored both administrative and country boundaries and declared rivers that flowed through the homelands ‘international drainage basins’ (van Koppen and Schreiner, 2014). The apartheid regime invested strongly in water infrastructure for irrigation and constructed a vast amount of dams, reservoirs, canals, tunnels and pumping systems in order to harness and redirect water to secure access for the economic and urban centres (van Koppen and Schreiner, 2014).Water was thus central to the building of the apartheid state, not only as a means to support industry, agriculture and the urban areas but also as ‘a very effective weapon in the apartheid government’s arsenal of oppression and control’ (Funke et al., 2007: 13), and it was, consequently, part of the particular racist and repressive form of biopolitics that apartheid entailed.

In other contexts, the hydraulic mission meant that resource accessibility was taken for granted (Linton, 2010). However, in South Africa, because of its relative dryness, water scarcity became an issue already during the period of the hydraulic mission. For example, in a report published in 1970 by the Commission of Inquiry into Water Matters (RSA, 1970), issues of water saving were discussed versus the construction of new water projects. Here, water efficiency and water pricing were portrayed as remedies of scarcity. The report stated: ‘[t]he application of a realistic price policy that reflects underlying scarcities is one of the most efficient ways of ensuring the effective exploitation of a country’s resources’ (RSA, 1970: 8).

At this time, changes in the water sector — which were not only stimulated by scarcity but also by the stagflation in South African economy — included a transformation of irrigation management from state responsibility to irrigation boards, and water trading was encouraged (van Koppen and Schreiner 2014: 546). While the commission proposed restrictions in the state’s financing of water schemes as well as a stronger focus on cost recovery, such reforms were never implemented. Changes in water governance did therefore not affect the wellbeing of the white minority, as the apartheid state continued to ensure water flows for white industry and agriculture (van Koppen and Schreiner 2014: 545-548). Water was also set aside for ‘natural assets’ (RSA, 1970: 17), which meant that white ecologists could regulate water resources in nature reserves (van Koppen and Schreiner, 2014: 547). Instead, the control of water in the homelands increased, resulting in a highly unequal distribution of water. In rural areas, 95% of the water was used by only 1.2% of the population (van Koppen and Schreiner, 2014: 545-548).

Historically, the notion of water scarcity, as a physical phenomenon, has thus played an important role both politically and socially in South Africa. Water governance has been absolutely central to the building of the state and water is also a resource that has been, and still is, as we will see below, part of creating and maintaining distinctions between different populations.

**Water scarcity and the population-resource nexus in the post-apartheid period**

The hydraulic mission came to be challenged, in South Africa and around the globe. The new water management paradigm, Integrated Water Resources Management (IWRM), embraced an integrated approach that takes into account the dimensions of *sustainability* and *equity* along with *efficiency*. In South Africa these shifts in water management coincided with the democratic transition and South Africa crafted new water legislation in line with global guidelines. South African water legislation has therefore been showcased as a success story in the advancement of integrated water management principles and practices. Something which has been especially recognised is that the right to sufficient water is protected by the South African constitution (RSA, 1996).

In this transition, water management was to shift from being something that had benefited commercial agriculture, industry and white workers, and where water rights exclusively belonged to white individuals (Turton and Meissner, 2002), to becoming ‘a tool in the transformation of society towards social and environmental justice’ (Schreiner et al., 2002: 127). In the new water legislation, the state became the custodian of the nation’s water resources. A new system of water use rights was created based on different categorisations. These categorisations include the so-called Reserve, which has priority over other usesand is divided into an ecological reserve and a basic needs reserve. The intention of the legislation was that all other water uses should require a licence[[3]](#footnote-3) (NWA, 1998).

The new South African water management faced major material and institutional challenges, however. One fundamental challenge was the (perception of) increasing water scarcity. The White Paper on National Water Policy for South Africa (DWAF, 1997) stated that since much of the accessible water resource had already been developed, a ‘new reality’ had to be addressed. This new reality meant that rather than continuing to harness new resources, as had been done under the hydraulic mission, the task for water management after the democratic transition was ‘increasingly to manage within the constraints that are given us by nature’ (DWAF, 1997). Another material challenge was the legacy of apartheid in terms of infrastructure; the costly investments that had been made under the hydraulic mission had been built for white domestic, industrial and agricultural use.

Institutionally, there were additional challenges. The new decentralised system suffered from implementation and capacity problems, especially in rural and poor municipalities, now responsible for water services according to the new legislation (RSA, 1997). Moreover, in the supposedly integrated water management there has been a lack of coordination between different spheres of government, for instance between the department responsible for water and the department responsible for agriculture. The effect has been that water needs for productive uses and livelihood purposes of historically disadvantaged individuals have not been acknowledged enough and this has hampered investments of irrigation infrastructure in rural communities (van Koppen and Schreiner, 2014: 552). Another challenge for the redistribution of water use rights is that the question of land reform has remained unsolved. Here, issues of water licensing have been paramount, as goals of redistribution have co-existed with the simultaneous perception of the need to keep white commercial farmers afloat because of their (assumed) role for efficiency and a working economy (Movik, 2014; Marcatelli, 2017; van Koppen and Schreiner, 2014). I will return to this after the subsequent discussion of the access to water for household consumption.

***Water for household consumption***

The Free Basic Water (FBW) policy is the main tool for achieving the constitutional right to water. The policy was given legal status under the Water Services Act in 2001 and granted everyone in South Africa ‘a minimum quantity of potable water of 25 litres per person per day or 6 kilolitres per household per month’ (RSA, 2001).[[4]](#footnote-4) At the time, the policy was controversial in that it went against the conventional wisdom that was globally prevalent, namely, that water should be paid for (Muller, 2008: 67). It nevertheless resonated with global guidelines in the sense of resting on discourses about the need to pay for water (above the basic need level) because of the costs involved in the process of delivering water to the consumers, as well as the scarcity of the resource. Even though the implementation of the policy has been associated with a number of problems, such as limited realisation in rural areas and service unreliability, it has been a success; the FBW policy has provided water to millions of South Africans since the end of apartheid.

Yet, the new water governance regime has not transformed the structural inequalities of water access. Rather, the policy of FBW is based on, and entrenches, a distinction between different populations in which the poor are granted the right to mere survival, while richer individuals can enjoy an abundant access to water that is part of creating a convenient lifestyle. Scarcity has here been a strong means of governing. The image of forever running communal standpipes in the townships has been the symbol of the need to govern the ‘wasteful poor’. This idea has taken specific material forms, where technologies to monitor and restrict poor people’s access to water have been a significant feature (see also Loftus, 2005: 3). These technologies involve a particular biopolitics, as they have been designed and applied to suit different populations (author, author). For example, pre-payment water meters and flow limiters that allow for a limited amount of water to flow to the user, have only been implemented in poor communities. Such rationalities have also manifested themselves in education and information in relation to water conservation, yet again only directed at poor populations (Nash, 2013; author).

The technologies referred to above have regulated and restricted water use and made users pay for their water above the FBW level. They have also responsibilised water users for their own use (author) and produced particular notions of responsibility and sustainability where both concepts are related to the *ability* and *need* to pay for water because of its scarcity (Rodina and Harris, 2016; Von Schnitzler, 2008; author). In Foucauldian terms, this means that water users themselves have recognised their need to ‘conduct themselves properly’ (Foucault, 2007: 43) so that they do not ‘bring about their own misery’. In this context, the poor have had to be meticulously careful of how much water they are using in order to avoid accessing more water than they can pay for or in order to prevent the prepayment meter or the water restrictor shut off supply. In this process, water wastage has come to mean the use of water (above FBW level) that is not paid for, a rationale that not only finds a place in governing bodies but is also demonstrated in how the water users form particular subjectivities in relation to their use of and relationship to water (author).

In terms of lived/experienced scarcity, previous research has shown that scarcity has acquired different meanings. The poor have suffered a material lack of water because of inadequate infrastructure or the inability to pay. In contrast, the more well-off have related water scarcity to notions, as put forward in mainstream sustainable development and water governance discourses, which portray water scarcity as a future global and national problem that requires action both by the government and by the users themselves. For this group of water users, who use relatively large quantities of water, water use often creates guilt and a bad conscience as it is related to ideas of looming scarcity and the so-called global water crisis (author).

Scarcity in this context can be understood as a trope that legitimises, and produces, a certain way of life (Mehta, 2010: 11), or rather certain way*s* of li*ves,* through a biopolitical caesura between different populations. Previous research has shown how such a way of governing resonates with how water users identify themselves. It has displayed how water users who rely on water for basic needs see themselves both as subjects of rights and as excluded in relation to water service delivery, since they have a lower standard of water services relative to other groups in society (author).

***Water for productive uses and livelihood purposes***

While water governance in South Africa has focused on, and also proved to be successful in, extending basic services for household consumption to previous disadvantaged populations, transformation regarding the distribution of water for productive uses and livelihood purposes has been slow. This aspect has received relatively little attention compared to the intense debates on water service delivery (Movik, 2014). This fact is in itself an illustration of how strong the notion of basic needs is as a way of creating a just distribution of water. Importantly, however, in relation to the productive uses of water it is even more evident how governing logics resonate with a Malthusian understanding of different populations and their relationship to futurity and ability to act in a responsible and sustainable way.

One central controversy in the transition to a new water governance regime has been the role and entitlements of the water users who were granted their water rights in previous periods, the so-called “Existing Lawful Uses” (ELUs). In the National Water Act (RSA, 1998), the ELUs were exempted from the licence obligation. While this meant that white commercial farmers could continue using a big share of the country’s water resources after the democratic transition, the ELU clause did not include water rights in the former homelands (Marcatelli, 2017: 63; van Koppen and Schreiner, 2014). The mechanism was intended to be transitional; the entitlements covered in the clause were eventually to be turned into licences. The process has been slow, however. Many still use water under the clause and in cases where water users with ELUs have applied for a licence they have either been granted such a licence or been financially compensated (Marcatelli, 2017: 64). According to figures from the DWS, 95% of the water in the agricultural sector is used by white commercial farmers (NWSMP2, 2018: 4-1). For emerging users, in contrast, the process of applying for a licence has involved a heavy administrative burden which has been especially difficult to overcome for rural and sometimes illiterate users, women in particular (van Koppen and Schreiner, 2014: 553).

Synne Movik (2014) has shown how different groups of water users were discursively framed in the work under the Water Allocation Reform (WAR) that started in 2003. The WAR focused on two main groups of water users: those who used water under the ELU clause (hereafter existing users), and the Historically Disadvantaged Individuals (HDIs) or so-called emerging users. Movik displays how, throughout the process, the existing users were portrayed as essential to the economy of the country and thereby as both ‘productive’ and ‘beneficial’. Emerging users, in contrast, were described as more economically disruptive and environmentally damaging in their ‘struggle to establish productive uses of the reallocated water’ (WAR cited in Movik, 2014: 192). Environmentally destructive activities of existing uses were not mentioned. Movik notes how these characterisations draw on narratives of what she terms ‘environmental myths’, that is, myths that predict ‘environmental degradation’ and ‘social instability’ if the entitlements of the existing users are taken away (Movik, 2014: 192). While Movik observes that the categorisations of the different water users were toned down in later versions of the WAR policy, she concludes that it remained clear that emerging users were to be ‘judged on their capacity to make productive use’[[5]](#footnote-5) (Movik, 2014: 192). In such a framing, equity in water access becomes ‘contingent on the ability to engage in efficient and productive use’ (Movik, 2104: 193).

The ‘environmental myths’ that Movik identifies in the discursive representation of the different water users are the equivalence of what in this article is referred to as ‘the Malthus effect’. It is a biopolitics that differentiates between the poor —who involve risks both to the economy and the environment — and the more economic forms of life whose use of water is assumed to be beneficial and productive for society as a whole.

Scarcity is here an underlying rationale for the need to license, quantify and monitor water use (see also Marcatelli, 2017: 64). As a technology of governing, it is, however, yet again, differently applied to (and understood by) different groups of water users. While emerging users in many cases have experienced a lack of water for institutional and infrastructural reasons, existing users have to a much larger extent enjoyed an abundance of water. In the case of the Waterburg, Marcatelli (2017) has, for example, shown that farmers’ perception of water resources is not that it is a scarce resource that needs to be allocated between competing uses but rather that it is a resource of their ‘own’ which should not be shared at all.

Water governance in the post-apartheid period has thus been focused both on provisioning and restricting water to the poor and on revenue collection.[[6]](#footnote-6) The discursive framings of different water users, concerning their relationship to environmental and economic risks, have played a central role in justifying and maintaining an unequal distribution. In this mode of governing, the scarcity of water becomes a ‘chimera’. Rather than depicting a general lack of water, it is used as a means of governing, involving a biopolitics that governs different populations in different ways. The ways in which water access has been provided for household consumption, as well as for productive and livelihood purposes, have become part of perpetuating the caesura between different populations that was established in the colonial and apartheid eras. Rather than being founded on race, however, this has been informed by a problematisation of different populations and their relationship to resource use, as put forward in liberal governmentality through mainstream environmental discourse.

**Water scarcity as the ‘New Normal’**

The last few years’ experience of drought has challenged governing rationales in water management and altered the role of scarcity. In this crisis, tariffs have not been able to balance the supply and demand of water for household use. This has forced water service providers to start focusing water demand initiatives on high-consumption households to a greater extent (Yates and Harris, 2018), and water restrictions have had to be introduced in several parts of the country, the City of Cape Town being the most well-known. The crisis has also brought the question of the share of water resources that is used for agriculture to the table and it has, furthermore, brought incompatibilities and conflicts between national and provincial/local government to the fore.

Regarding the Cape Town experience, it has been argued that decision makers on the local and regional level have mismanaged resources through dismissing recommendations of risk assessments performed by the national government and that they have thereby delayed big capital investment in water infrastructure (Muller, 2018: 175). On the other hand, the national government has been accused of failing to respond to the financial needs of The Western Cape province, by not allocating money that would have been used to increase water supplies, and of failing to, in time, curtail allocation to agriculture — a national responsibility — despite drought conditions(Olivier, 2018).[[7]](#footnote-7) What has caused the situation is thus a matter of debate — as is also the severity of the drought (Muller, 2018) — and the crisis is not only due to the lack of rain but also related to institutional, social and political factors. Consequently, it is here important to underline that water availability is not the only problem of South African water governance at present. It suffers from institutional challenges, including the lack of capacity in national and local bodies, both in regards to engineering (in national departments as well as locally) and concerning revenue collection (in rural municipalities),[[8]](#footnote-8) insufficient capital for maintaining and developing infrastructure as well as degrading and failing water supply systems. Another big challenge is the gap between urban and rural service delivery (Palmer, Moodley and Parnell, 2017). The national department has also been accused of several cases of financial mismanagement and fraud (SAWC 2017; Saba, 2019).

At the same time, the experience of the drought has meant that water scarcity has increasingly become a material concern for all populations and sectors in South African society. In Cape Town, Level 6B Water Restrictions were implemented in February 2018. These restrictions meant that, amongst other restraints, ‘[a]ll residents are required to use no more than 50 litres of municipal drinking water per person per day in total […]’ (City of Cape Town, 2018: 2). Cape Town is not the only place that has been affected by the drought, however; it has severely impinged on the whole of Western Cape. The commercial agricultural sector in the province had its water curtailed by 60% due to the drought (restrictions were relaxed on 3 December 2018 [South African Government, 5 December 2018]). It has been reported that the production of, for example, fruit and wine fell between 10 and 30% as a result of the measures taken because of the drought (Gosling, 2018; Johnston, 2018). The drought has also affected other provinces, including KwaZulu-Natal, Free State, North West, Limpopo and Mpumalanga and the Northern and Eastern Cape.

Despite the fact that the drought has been felt in numerous places across the country and that those who usually suffer the most are small-scale farmers who rely on rain-fed subsistence crops (WRC, 2018), the media image of the crisis has been that of worried Captonians. In particular the concept ‘Day Zero’, which is the date when the household water taps were predicted to be closed in the city, has drawn attention to the case.[[9]](#footnote-9) Yet the restricted amount of water that residents in Cape Town are allowed, namely, 50 litres per person per day, is an amount which is twice as much as the one defined in the FBW policy. This means that it is twice as much water as many South Africans rely on every day under normal circumstances, which has been seen as an improvement in comparison to their previous conditions. The attention given, both globally and nationally, to the situation for the residents of The City of Cape Town, many of whom belong to the middle class and are not used to having to cut back on water use, can be explained by dominant imaginaries of what is appropriate for particular populations. These imaginaries are based on Malthusian hierarchisations between different forms of lives, understood, on the one hand, as those who just survive, that is, ‘mere life’, and, on the other, as those who live ‘proper’ forms of lives, the latter being seen as both more sustainable and responsible and, furthermore, more entitled to water, because of their ability to pay for it.

In national water governance, it is argued that while droughts are a normal feature in South Africa, what has recently been experienced ‘is more than a drought’ and involves a so-called ‘New Normal’. This means that the country needs to adapt to a situation of increasing water scarcity. The new normal is due to other challenges connected to water, such as a growing urban population, industrialisation and climate change as well as the pollution of water resources.

A National Water and Sanitation Masterplan has recently been proposed by the Department of Water and Sanitation (NWSMP1, 2, 2018).[[10]](#footnote-10) It establishes water security as a ‘critical challenge confronting South Africa in the 21st century’ in relation to ‘social wellbeing and economic growth’ and defines South Africa as a ‘water scarce country’ (NWSMP2, 2018: 1-2). The report states that ‘South Africa has a semi-arid climate, with an average annual rainfall of 465 mm, compared to the world average of 860 mm, [and that] as a result, South Africa’s water resources are scarce and extremely limited’ (NWSMP, 2018: 3-8), and also that:

Based on current demand projections and without effective interventions, the water deficit confronting the country could be between 2.7 and 3.8 billion cubic meters, a gap of approximately 17% of available water sources, by 2030. The South African water sector must take bold steps to adopt a ‘new normal’ to head off the projected water gap. (NWSMP2, 2018: 1-2)

Several meanings of scarcity appear in the document. Defining the concept of scarcity, the plan acknowledges that ‘[w]ater is scarce relative to human demands, not in and of itself’ (Annexure 5), which indicates an understanding of scarcity as a relative concept. The meaning of scarcity that prevails in the masterplan is, however, one that refers to scarcity in physical and absolute terms, as it is expressed in terms of ‘average annual rainfall’. The scarcity of water in South Africa is, furthermore, referred to as a ‘fact’ (see, for example, pp. 3-34). This functions so as to create a sense that scarcity is a natural phenomenon and, moreover, that there is an urgency to reform water governance.

As a governing technology, scarcity incites a change in the so-called ‘water mix’. This means that the country should diversify the reliance on different kinds of water. According to the masterplan, the share of groundwater, reused waste water, desalinated mine water, and brackish water and sea water, is to be increased, while the share of surface water is to be decreased. While changing the water mix accordingly requires investments in new infrastructure, there is also a need to plough money into existing and ageing infrastructure in order to deal with relatively high figures of water losses and high degrees of failures in water service delivery. The masterplan states that South Africa’s non-revenue water stands at around 41% with actual physical losses at 35% (NWSMP2, 2018: 1-4). The masterplan does not only focus on diversifying and extending water sources and reducing water losses; it also embraces water conservation and demand management (WC/WDM) as ways of coming to terms with its above global average use of water for domestic purposes (237 lcd compared to 173 lcd) (NWSMP2, 2018: 1-4). In connection to this, attitude and behavioural change is seen as critical (NWSMP2, 2018: 3-25). Therefore, the plan calls for both supply and demand management solutions in order to combat water scarcity. It also posits that scarcity increases the value of water, which, in turn, increases competition between users. This value is to be reflected in tariffs, as the plan reiterates the need to pay for water, but the document also recognises other values of water, such as its environmental, strategic and political value (NWSMP2, 2018:12-23).

The plan recognises that national government has been ‘largely reactive’ when it comes to reallocating water to black users and that it has limited the possibilities for these users to make ‘productive use of the land’ (NWSMP2, 2018: 4-3). While the plan posits that the reallocation between water use sectors is an ‘obvious and powerful’ method for shifting water use ‘from low to higher economic use’, it simultaneously states that when this conflicts with achieving ‘racial equity’ in access, priority must be given to the latter (NWSMP2, 2018: 4-2).

At the same time, the plan emphasises that capital costs for new storage infrastructure are too high to provide ‘any significant amount of affordable additional water to the agricultural sector’ (NWSMP2, 2018: 4-3). Expansion therefore needs to be done within the water that is already allocated to the sector. Several measures for providing raw water to black users are suggested. These include developing irrigation in areas where it is suitable, rehabilitating irrigation schemes in the former homelands as well as allocating water for agriculture development in areas where water use has been reduced, for example, closed mines and water conservation efforts, or where extra water can be provided by, for example, small dams or groundwater. It is also stated that General Authorisations will be used proactively to support reallocation of water to black users, and to legalise small-scale water use without the need for a licence. Voluntary contributions from farmers are also recognised as a way to promote reallocation (NWSMP2, 2018, 4-3-4-6).

Consequently, in the draft masterplan, scarcity continues to appear as the overarchinglogic that determines the possibility for reallocation. Together with a maintained focus on tariffs as a way of reflecting the value of water, such an understanding of what scarcity entails further risks entrenching the social and ecological unsustainability of the current water management approach.

**Discussion and conclusion: beyond neoliberal problematisations of scarcity?**

This article has brought to light the role of scarcity in South African water management and has problematised the framings and governing of different populations in relation to their water use. We have learnt that notions of water scarcity have played a central role in the making of the apartheid state. Furthermore, we have learnt that particular understandings of scarcity have affected how the distribution of water resources has been thought about and practised in the post-apartheid period. During this time, scarcity has been a technology of governing mainly directed at the poor.

The article has also explored how the notion of water scarcity has changed in the current water crisis. This crisis is not exclusive to, but has been amplified by, the severe drought the country has recently been experiencing. The crisis has meant that water scarcity has increasingly become a material concern not only for poor populations but across social economic groups and sectors. In this crisis, both policy makers and the public have been made acutely aware of the need for changes in the country's management and use of its water resources, and the balance between revenue collection and water conservation has shifted. The crisis could thereby offer a structural opportunity to move away from neoliberal understandings of water scarcity and redress some of the problems of the present water governance. Thus, taking stock of the political and social value of water, as put forward both by critical geographers and by the South African masterplan for water and sanitation, the notion of scarcity has the potential to be used progressively as a means of governing. This would, however, require a thorough change of the logics that guide water governance at present. Notwithstanding the institutional, legal and political challenges that such a transformation would involve, this article has drawn attention to three areas.

First, a progressive water governance needs to take seriously what a relative understanding of water scarcity entails, so that political and redistributive aspects come to the forefront of the discussions around water management. While the masterplan endorses such an understanding in its definition of the concept of scarcity, scarcity still comes across as a physical phenomenon throughout the text. Such preoccupation with water scarcity as a physical phenomenon risks conflating the different reasons for the lack of water experienced by the water users in South Africa. Hence, the increased focus on the availability of water during the drought, and the subsequent problems of servicing the more well-off with unlimited amounts of water, should not obscure the reasons why poorer populations have long suffered from the lack of water, including the lack of capacity, financial gaps, institutional failures and ageing or non-existent infrastructure.

Consequently, and second, a progressive water management approach needs to place the question of infrastructure at the centre of the discussions. But rather than focusing on how to fill the gap between supply and demand through technology, such as desalination and other investments that will allow for changes in the water mix, it needs to carefully balance the need for such new infrastructure against the need for developing, maintaining and putting in place infrastructure in underprivileged areas, especially in rural communities. Such a balancing needs to be done in tandem with a discussion around what constitutes reasonable and sustainable uses of water. This might, in turn, disentangle ideas of what constitutes a modern city, a modern state or modern ways of life, such as unlimited access to water at all times (for those who can pay for it), flushing toilets and green lawns.

Third, Malthusian assumptions about different populations’ relationship to resource use need to be disentangled. This involves moving away from an approach that places emphasis on governing and limiting the poors’ access to water resources, while the financial capacity of the more well off renders them both sustainable and responsible. In practice, this means separating entitlements to water from the ability to pay; it also means exchanging the focus on tariff structures, as a way of steering use, for a greater concentration on placing limitations to accessibility for all users. The mass roll-out of technological devices, for example, prepayment water meters, flow limiters and dry sanitation solutions such as Urine Diversion Toilets, to all populations and areas in South Africa, could be the way forward here, as argued by Galvin (2018), and could be combined with a fixed daily or monthly limit to water access that applies to all domestic users. Regarding water for productive uses, there are vast challenges in transferring water use to historically disadvantaged populations. Strong legal and institutional measures need to be put in place in order to prioritise and address the question of equity in water allocation. Such a focus is, however, not sufficient; reallocation needs to be done in collaboration with the Department of Agriculture[[11]](#footnote-11) and land reform. How to tackle this challenge is well beyond the scope of this article, as it is an immense and highly political task that will shape the future of the South African society.

A move beyond neoliberal problematisations of water scarcity and a thorough questioning of current structures of water use, as proposed here, are steps towards a more egalitarian water distribution. It could also help to avoid another Cape Town situation in future drought periods. Such a governance model would refuse the distinctions made between different populations based on a Malthusian problematisation. Rather than portraying the poor as the ones who live without a sense of social and ecological futurity, it would instead make those who think they can do anything with water, since they have the means to pay, appear as the true ‘catastrophic form of life’ (cf Tellmann, 2013; author).

**References**

Agamben G (1998) *Homo Sacer: Sovereign power and Bare Life*. Stanford: Stanford University Press.

Agrawal A (2005) *Environmentality: Technologies of Government and the Making of Subjects*. Durham: Duke University Press.

Ahlers R and Zwarteveen M (2009) The water question in feminism: water control and gender inequalities in a neoliberal-era. *Gender, Place and Culture: A Journal of Feminist Geography* 16(4): 409-426.

Bakker K (2010) *Privatizing Water: Governance Failure and the World’s Urban Water crisis*. Ithaca, NY: Cornell University Press.

Bakker K (2012) Water: Political, Biopolitical, Material. *Social Studies of Science*, 42(4): 616-623.

Bakker K (2013) Constructing “Public” Water: The World Bank, Urban Water Supply, and the Biopolitics of Development. *Environment and Planning D: Society and Space* 31(2): 280-300.

Birkenholz T (2009) Groundwater Governmentality: hegemony and technologies of resistance in Rajasthan’s (India) groundwater governance. *The Geographical Journal* 175(3): 208-220.

Birkenholz T (2013) “On the network, off the map”: developing intervillage and intragender differentiation in rural water supply. *Environment and Planning D: Society and Space* 31(2): 354-371.

Boelens R, Hoogesteger J and Baud M (2015) Water reform governmentality in Ecuador: Neoliberalism, centralization, and the restraining of polycentric authority and community rule-making. *Geoforum* 64: 281-291.

Bond P (2000) *Cities of Gold, Townships of Coal – essays on South African New Urban Crisis*. Trenton and Asmara: African World Press Inc.

City of Cape Town (2018) Level 6B Water Restrictions. <http://resource.capetown.gov.za/documentcentre/Documents/Procedures%2C%20guidelines%20and%20regulations/Level%206B%20Water%20restriction%20guidelines-%20eng.pdf> (accessed 30May 2018).

Darier E (ed) (1999) *Discourses of the Environment*. Malden: Blackwell Publishers.

Dean M (1999) *Governmentality: Power and Rule in Modern Society*. Los Angeles: Sage.

Dean M (2015) The Malthus Effect: population and the liberal government of life. *Economy and Society* 44(1): 18-39.

DWAF (Department of Water Affairs And Forestry) (1997) White Paper on National Water Policy for South Africa.

DWAF (Department of Water Affairs And Forestry) (2002) Draft White Paper on Water Services; Water is Life, Sanitation is Dignity. Pretoria: Department of Water and Forestry Affairs.

Foucault M (1998) [1976] *The Will to Knowledge: History of Sexuality I*. Harmondsworth, UK: Penguin books.

Foucault M (2003) *“Society Must Be Defended", Lectures at the Collège de France 1975-1976*. New York, Picador.

Foucault M (2007) *Security, Territory, Population, Lectures at the Collège de France 1977-1978*. New York: Picador.

Foucault M (2008) *The Birth of Biopolitics, Lectures at the Collège de France 1978-1979*. New York: Palgrave Macmillan.

Funke N, Nortje K, Findlater K, Burns M, Turton A, Weaver A and Hattingh H (2007) Redressing Inequality: South Africa’s New Water Policy. *Environment: Science and Policy for Sustainable Development* 49(3): 10-23.

Galvin M (2018) Bold steps are needed toward a new normal that allocates water fairly in South Africa. *The Conversation* <https://theconversation.com/bold-steps-are-needed-toward-a-new-normal-that-allocates-water-fairly-in-south-africa-92191> (accessed 6 March 2018)

Gandy M (2014) *The fabric of space: water, modernity, and the urban imagination*. Cambridge, MA: The MIT Press.

# Gemechu (2018) On water users’ repertoire: Market rationality and governmentality in Peeth village’s water supply, Rajasthan (India). *Geoforum* 94: 33-40.

Goslin M (2018) Cape farmers lose 25% of orchards, vineyards as result of drought. *Mail & Guardian* 22 March 2018.

GWP (Global Water Partnership) (2000) TAC Background Paper No. 4: Integrated Water Resources Management. Denmark: Global Water Partnership.

Harris L (2009) Gender and emergent water governance: comparative overview of neoliberalized natures and gender dimensions of privatization, devolution and marketization. *Gender, Place and Culture* 16(4): 387-408.

Jairath J (2010) Advocacy of Water Security: Leakages in the Argument. In Mehta L (Ed) *The Limits to Scarcity*. London and Washington DC: Earthscan.

Johnston BR (2003) The Political Ecology of Water: An Introduction. *Capitalism, Nature, Socialism* 14 (3): 73-90.

Johnston P (2018) How Western Cape farmers are being hit by the drought. *The Conversation* <https://theconversation.com/how-western-cape-farmers-are-being-hit-by-the-drought-91700> (accessed 13 February 2019)

Kaika M (2005) *City of Flows: Modernity, Nature and the City*. London: Routledge.

Kooy M and Bakker K (2008a) Splintered networks: Urban water governance in Jakarta. *Geoforum* 39(6): 1843-1858.

Kooy M and Bakker K (2008b) Technologies of Government: Constituting Subjectivities, Spaces, and Infrastructures in Colonial and Contemporary Jakarta. *International Journal of Urban and Regional Research* 32(2): 375-391.

Lankford, B (2013) Infrastructure Hydromentalities: Water Sharing, Water Control and Water (In)security. In Lankford B, Bakker K, Zeiton M and Conway D (eds). *Water Security: Principles, Perspectives and Practices*. New York and London: Earthscan/Routledge.

Linton J (2010) *What is Water? The History of a Modern Abstraction*. Vancouver: UBS Press.

Linton J and Budds J (2014) The hydrosocial cycle: Defining and mobilizing a relational-dialectical approach to water. *Geoforum* 57: 170-180.

Loftus A (2005) *A Political Ecology of Water Struggles in Durban, South Africa*. PhD thesis, University of Oxford, UK.

Loftus A (2006) The metabolic processes of capital accumulation in Durban’s waterscape. In Heynen N, Kaika M and Swyngedouw E (eds). *In the Nature of Cities: Urban political ecology and the politics of urban metabolism*. London: Routledge.

Loftus A (2015) Water (in)security: securing the right to water. *The Geographical Journal* 181(4): 350-356.

Luke TW (1995) On Environmentality: Geo-Power and Eco-Knowledge in the Discourses of Contemporary Environmentalism. *Cultural Critique* 31: 57-81.

Luke TW (1999) Environmentality as Green Governmentality. In Darier E (ed) *Discourses of the Environment*. Malden: Blackwell Publishers.

Lemke, T (2002) Foucault, Governmentality, and Critique, *Rethinking Marxism*, 14(3).

Malthus T (1798) *An Essay on the Principle of Population*. London: Dents and Sons.

Marcatelli M. (2017) Legitimizing Inequality: A Political Ecology of Water in the Waterberg, South Africa. PhD Thesis, Erasmus University Rotterdam. The Netherlands.

Mayhew S (2004) ‘Governmentality’, in *A Dictionary of Geography*. Oxford: Oxford University Press.

Mehta L (2001) The Manufacture of Popular Perceptions of Water Scarcity: Dams and Water-Related Narratives in Gujarat, India. *World Development* 29 (12): 2025-2041.

Mehta L (ed) (2010) *The Limits to Scarcity*. London and Washington DC: Earthscan.

Movik S (2014) A fair share? Perceptions of Justice in South Africa’s water allocation reform policy. *Geoforum* 54: 187-195.

Muller M (2018) Lessons from Cape Town’s drought. *Nature* 559 12 July: 174-176.

Muller M (2012) *Lessons from South Africa on the management and development of water resources for inclusive and sustainable growth*. <https://ec.europa.eu/europeaid/sites/devco/files/erd-consca-dev-researchpapers-muller-20110101_en.pdf> (accessed 5 June 2018)

Muller M (2008) Free Basic Water — a sustainable instrument for a sustainable future in South Africa. *Environment and Urbanization* 20: 67-87.

Nash F (2013) Participation and Passive Revolution: The Reproduction of Neoliberal Water Governance Mechanisms in Durban, South Africa. *Antipode* 45(1): 101-120.

NWSMP1 (2018) *National Water and Sanitation Master Plan: Ready for the Future and Ahead of the Curve*, Vol 1 draft version 3.3, March 2018. Department of Water and Sanitation, Republic of South Africa. <http://www.dwa.gov.za/National%20Water%20and%20Sanitation%20Master%20Plan/Documents/NWSMP%20Call%20to%20Action%20Final%20Draft%20PDF.pdf>

NWSMP2 (2018) *National Water and Sanitation Master Plan: Ready for the Future and Ahead of the Curve*, Vol 2 draft version 3.3, March 2018. Department of Water and Sanitation, Republic of South Africa. <http://www.dwa.gov.za/National%20Water%20and%20Sanitation%20Master%20Plan/Documents/20180329%20NWSMP%20Volume%202%20Final%20Draft%20(3.3).pdf> (accessed 4June 2018)

# Olivier DW (2018) **Cape Town’s water crisis: driven by politics more than drought** *The Conversation* [*https://theconversation.com/cape-towns-water-crisis-driven-by-politics-more-than-drought-88191*](https://theconversation.com/cape-towns-water-crisis-driven-by-politics-more-than-drought-88191)(accessed 20 February 2019).

O’Reilly K (2006) “Traditional” women, “Modern” water: Linking gender and commodification in Rajasthan, India. *Geoforum* 37(6): 958-972.

Palmer I, Moodley N & Parnell S (2017) *Building a capable state: Service delivery in Post-Apartheid South Africa*. Cape Town: UCT Press.

Plonowska Ziarek E (2012) Bare Life. In Sussman, H. (ed) *Impasses of the Post-Global: Theory in the era of climate change, vol 2*. Ann Arbor: Open Humanities Press.

Rodina L (2016) Human right to water in Khayelitsha, South Africa – Lessons from a ‘lived experiences’ perspective. *Geoforum* 72: 58-66.

Rodina L and Harris LM (2016) Water services, lived citizenship, and notions of the state in marginalised urban spaces: The case of Khayelitsha, South Africa. *Water Alternatives* 9(2): 336-355.

RSA (Republic of South Africa) (1970) *Report of the Commission of Enquiry into Water Matters*. Pretoria: Government Printers. Doc. No. R.P. 34/1970.

RSA (Republic of South Africa) (1996) *Constitution of the Republic of South Africa*, Act 108 of 1996. Pretoria: Government Printer.

RSA (Republic South Africa) (1997) Water Services Act, no 108 of 1997. Pretoria: Government Gazette.

RSA, (Republic South Africa) (1998) National Water Act, no 36 of 1998. Pretoria: Government Gazette.

RSA (Republic South Africa) (2001) Gazette No 22355, Notice R509 of 2001 (8 June 2001) published in terms of section 9 of the South African Water Services Act 108 of 1997. Pretoria: Government Gazette.

Rutherford S (2007) Green governmentality: insights and opportunities in the study of nature’s rule. *Progress in Human Geography* 31(3): 291-307.

Saba, A (2019) Another scandal hits water affairs. *Mail & Guardian* 18 January 2019.

Sandilands C (1999) Sex at the Limits. In Darier E (ed) *Discourses of the Environment*. Malden: Blackwell Publishers.

SAWC (South African Water Caucus) (2017) *Report on the state of the department of water and sanitation*. <http://emg.org.za/images/downloads/water_cl_ch/SAWC_State-of-DWS-Report.pdf> (accessed 21 February 2019).

Schreiner B, van Koppen B and Khumbane T (2002) From bucket to basin: A new paradigm for water management, poverty eradication and gender equity. In Turton A and Henwood, R (eds) *Hydropolitics in the developing world: A Southern African Perspective.* Pretoria: African Water Research Unit.

Scherr SJ (2000) A downward spiral? Research evidence on the relationship between poverty and natural resource degradation. *Food Policy* 25: 479-498.

South African Government (2018) <https://www.gov.za/speeches/national-government-relaxes-water-restrictions-urban-and-agricultural-use-western-cape-5> Media Statement 5th of December (accessed 8 February 2019).

Strang V (2004) *The Meaning of Water*. Oxford: Berg Publishers.

Sultana F (2009) Fluid lives: subjectivities, gender and water in rural Bangladesh. *Gender, Place and Culture* 16(4): 427-444.

Sultana F (2013) Water, Technology, and Development: Transformations of Development Technonatures in Changing Waterscapes. *Environment and Planning D: Society and Space* 31(2): 337-353.

Swyngedouw E (2009) The Political Economy and Political Ecology of the Hydro-Social Cycle. *Journal of Contemporary Water Research and Education* 142(1): 56-60.

Swyngedouw E (2015) *Liquid Power: contested Hydro-Modernities in Twentieth-Century Spain*. Cambridge, MA, London: MIT Press.

Tellmann U (2013) Catastrophic Populations and the Fear of the Future: Malthus and the Genealogy of Liberal Economy. *Theory, Culture and Society* 30(2): 135-155.

Turton AR, Meissner R, Mampane PM and Seremo O (2004) *A Hydropolitical History of South Africa’s International Rivers Basins*. African Water Issues Research Unit (AWIRU) Pretoria: University of Pretoria.

van Koppen B and Schreiner B (2014) Moving beyond integrated water resource management: developmental water management in South Africa. *International Journal of Water Resources Development* 30 (3): 543–558.

von Schnitzler A (2008) Citizenship Prepaid: Water, Calculability, and Techno-Politics in South Africa. *Journal of Southern Africa Studies* 34(4).

Ward L (2013) Eco-governmentality revisited: Mapping divergent subjectivities among Integrated Water Resources Management experts in Paraguay. *Geoforum* 46: 91-102.

WCED (World Commission on Environment and Development) (1987) *Our Common Future*. Oxford: Oxford University Press.

Welch C (2018) Why Cape Town is Running Out of Water and Who’s Next. National Geographic, 5th of March. <https://news.nationalgeographic.com/2018/02/cape-town-running-out-of-water-drought-taps-shutoff-other-cities/> (accessed 1June 2018)

WRC (Water Research Commission) (2018) Drought SA <http://www.droughtsa.org.za> (accessed 4June 2018)

Yates J, Harris L and Wilson N (2017) Multiple ontologies of water: Politics, conflict and implications for governance. *Environment and Planning D: Society and Space* 35(5): 797-815.

Yates J and Harris L (2018) Hybrid regulatory landscapes: The human right to water, variegated neoliberal water governance, and policy transfer in Cape Town, South Africa, and Accra, Ghana. *World Development* 110: 75-87.

References to the author will be added

1. See, for example, Welch (2018). [↑](#footnote-ref-1)
2. Drought conditions have been felt in different parts of the country during different periods of time. [↑](#footnote-ref-2)
3. Exempted from this were the so-called Schedule One uses, which included small-scale uses such as livestock watering and home gardening. General Authorisations could also be given to other low-impact uses in specific areas or communities (Movik, 2014; van Koppen and Schreiner 2014). I will return to the issue of the so-called Existing Lawful Uses (ELUs), which were also exempted from the licence obligation. [↑](#footnote-ref-3)
4. The policy considers the number of members of a household to be 8. [↑](#footnote-ref-4)
5. The later version of the policy had a clearer egalitarian focus but it was soon crowded out by the Water for Growth and Development Strategy, launched in 2009. This strategy placed emphasis on growth and hydrological security rather than on equity (Movik, 2014: 193). [↑](#footnote-ref-5)
6. Revenue collection remains a central challenge for many municipalities. [↑](#footnote-ref-6)
7. The fact that the Western Cape is the only province run by the opposition has rendered the relationship between the national government and the province especially difficult. [↑](#footnote-ref-7)
8. In rural municipalities, water and sanitation expenditure is sourced at 29% from tariffs, while the figure for the metros and secondary cities is 121%. [↑](#footnote-ref-8)
9. The date has been pushed back several times and seems to be evaded completely for 2018. [↑](#footnote-ref-9)
10. The document referred to is the draft version (3.3). The masterplan was expected to be formally

    signed by the new Water Minister during 2018 but the process has been delayed. [↑](#footnote-ref-10)
11. The full name of this department is at present Department of Agriculture, Forestry and Fisheries. [↑](#footnote-ref-11)